ATTACHMENT - REQUIRED STATE AGENCY FINDINGS

FINDINGS
C = Conforming
CA = Conditional
NC = Nonconforming
NA = Not Applicable

DECISION DATE: January 28, 2013
FINDINGS DATE: February 4, 2013

TEAM LEADER: Lisa Pittman
SECTION CHIEF: Craig R. Smith

PROJECT I.D. NUMBERS:

J-10017-12/University of North Carolina Hospitals at Chapel Hill/ Develop 12 new rehabilitation beds at its existing location for a total of 42 beds and renovate existing space/ Orange County

J-10018-12/WakeMed Rehabilitation Hospital/ Develop 12 new rehabilitation beds on the WakeMed Raleigh Campus for a total of 110 beds and construct an addition to house the new beds and 29 beds currently housed in semi-private rooms in the existing Rehab Hospital / Wake County

J-10021-12/Duke University Health System d/b/a Duke Raleigh Hospital/ Develop 12-bed inpatient rehabilitation unit at Duke Raleigh Hospital/ Wake County

J-10022-12/Johnston Memorial Hospital Authority d/b/a Johnston Health/ Develop 8-bed inpatient rehabilitation unit at Johnston Medical Center-Smithfield/ Johnston County

REVIEW CRITERIA FOR NEW INSTITUTIONAL HEALTH SERVICES

G.S. 131E-183(a) The Department shall review all applications utilizing the criteria outlined in this subsection and shall determine that an application is either consistent with or not in conflict with these criteria before a certificate of need for the proposed project shall be issued.

(1) The proposed project shall be consistent with applicable policies and need determinations in the State Medical Facilities Plan, the need determination of which constitutes a determinative limitation on the provision of any health service, health service facility, health service facility beds, dialysis stations, operating rooms, or home health offices that may be approved.

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The 2012 State Medical Facilities Plan (SMFP) contains a need determination, on page 121, for 20 additional inpatient rehabilitation beds in Health Service Area (HSA) IV. The need determination was increased from four to 20 as the result of the approval of an adjusted need determination.

Four applications were received by the Certificate of Need Section proposing the development of a total of 44 inpatient rehabilitation beds. However, the limit on the number of inpatient rehabilitation beds that can be approved pursuant to the need determination is 20. Thus, all four applications cannot be approved. See the Comparative Analysis section for the decision regarding the development of 20 additional inpatient rehabilitation beds in HSA IV. Each proposal is briefly described below.

University of North Carolina Hospitals at Chapel Hill proposes to develop 12 new inpatient rehabilitation beds for a total of 42 rehabilitation beds on the seventh floor of University of North Carolina Hospitals at Chapel Hill's (**UNC**) original hospital and renovate ancillary and support space. The applicant proposes to locate the 12 inpatient rehabilitation beds in Orange County, in HSA IV. Consequently, the application is conforming to the need determination in the 2011 SMFP.

WakeMed Rehabilitation Hospital (WakeMed) proposes to develop 12 new inpatient rehabilitation beds in newly constructed space on the WakeMed Raleigh Campus, for a total of 110 inpatient rehabilitation beds, including 14 beds that have been approved but are not yet operational. The applicant proposes to locate the addition, which will house the 12 new beds and 29 beds currently housed in semi-private rooms in the existing Rehab Hospital, in Wake County, in HSA IV. Consequently, the application is conforming to the need determination in the 2012 SMFP.

Duke Raleigh Hospital proposes to develop a 12-bed inpatient rehabilitation unit on the third floor of Duke Raleigh Hospital (**Duke Raleigh**). The applicant proposes to locate the 12 inpatient rehabilitation beds in Wake County, in HSA IV. Consequently, the application is conforming to the need determination in the 2012 SMFP.

Johnston Health proposes to develop an 8-bed inpatient rehabilitation unit on the third floor of the original hospital building at Johnston Medical Center-Smithfield (**Johnston**). The applicant proposes to locate the 8 inpatient rehabilitation beds in Johnston County, in HSA IV. Consequently, the application is conforming to the need determination in the 2012 SMFP.

There are two policies in the 2012 SMFP applicable to this review, Policy GEN-3 and Policy GEN-4.

Policy GEN-3 states:

"A certificate of need applicant applying to develop or offer a new institutional health service for which there is a need determination in the North Carolina State Medical Facilities Plan shall demonstrate how the project will promote safety and quality in the delivery of health care services while promoting equitable access and maximizing healthcare value for resources expended. A certificate of need applicant shall document its plans for providing access to services for patients with limited financial resources and demonstrate the availability of capacity to provide these services. A certificate of need applicant shall also document how its projected volumes incorporate these concepts in meeting the need identified in the State Medical Facilities Plan as well as addressing the needs of all residents in the proposed service area."

Policy GEN-4 states:

"Any person proposing a capital expenditure greater than $2 million to develop, replace, renovate or add to a health service facility pursuant to G.S. 131E-178 shall include in its certificate of need application a written statement describing the project's plan to assure improved energy efficiency and water conservation.

In approving a certificate of need proposing an expenditure greater than $5 million to develop, replace, renovate or add to a health service facility pursuant to G.S. 131E-178 the Certificate of Need Section shall impose a condition requiring the applicant to develop and implement an Energy Efficiency and Sustainability Plan for the project that conforms to or exceeds energy efficiency and water conservation standards incorporated in the latest editions of the North Carolina State Building Codes. The plan must be consistent with the applicant's representation in the written statement as described in paragraph one of Policy GEN-4.

Any person awarded a certificate of need for a project or an exemption from review pursuant to G.S. 131E-184 are required to submit a plan for energy efficiency and water convservation that conforms to the rules, codes and standards implemented by the Construction Section of the Division of Health Service Regulation. The plan must be consistent with the applicant's representation in the written statement as described in paragraph one of Policy GEN-4. The plan shall not adversely affect patient or resident health, safety or infection control."

UNC's discussion of Policy GEN-3 is as follows:

<u>Maximize Healthcare Value</u>

In Section III.2, page 73, the applicant states that patient safety and quality of care are priority objectives with the proposed project, and:

"The project will be planned and developed to incorporate patient safety features, reduce the risk of falls, enhance infection control and provide needed capacity. Adding inpatient rehabilitation beds will enable the Center to both accept admissions from UNC Hospitals

and from other facilities without delay and to provide timely and efficient care. Increasing the number of private patient rooms will provide rehabilitation patients with greater privacy and sufficient space for in-room therapies that focus on improving functional independence and self care (eating, bathing, and dressing). One of the additional private rooms will be an isolation room (that is required by hospital licensure rules) for those patients who have or are suspected of having infections transmitted by the airborne route.

Access to the inpatient rehabilitation services will continue to follow the existing policies that UNC Hospitals has in place. … UNC Hospitals has the obligation to accept any North Carolina citizen requiring treatment. No North Carolina citizen is denied access to non-elective care because of race, sex, creed, age, handicap, financial status or lack of medical insurance."

The applicant does not adequately demonstrate that the proposal will maximize healthcare value and that the financial projections, that are inconsistent with publically available data, incorporate these basic principles in meeting the need identified in the 2012 SMFP and the needs of all residents in the service area. Therefore, the applicant does not adequately demonstrate how its proposal maximizes healthcare value.

Promote Equitable Access

In Section III.2, pages 73-74, the applicant states:

"Access to the inpatient rehabilitation services will continue to follow the existing policies that UNC Hospitals has in place. As North Carolina's only state-owned referral, tertiary and quaternary care center, UNC Hospitals has the obligation to accept any North Carolina citizen requiring treatment. No North Carolina citizen is denied access to non-elective care because of race, sex, creed, age, handicap, financial status or lack of medical insurance. The facility will be designed in accordance with the latest State of North Carolina and federal guidelines for handicapped accessibility. The project will incorporate all applicable provisions of the Americans with Disabilities Act. Please see additional information in Section VI."

In addition, in Section VI.5, page 96, the applicant provides a description of UNC's commitment to provide care to all patients. Exhibit 8 contains admission policies. Exhibit 23 contains financial assistance, debt collection and charity care policies. The applicant adequately demonstrates how its proposal promotes equitable access.

Promote Safety and Quality

In Section III.2, page 73, the applicant states:

"Patient safety and quality of care are priority objectives with the proposed project. The project will be planned and developed to incorporate patient safety features, reduce the risk of falls, enhance infection control and provide needed capacity. Adding inpatient rehabilitation beds will enable the Center to both accept admissions from UNC Hospitals

and from other facilities without delay and to provide timely and efficient care. Increasing the number of private patient rooms will provide rehabilitation patients with greater privacy and sufficient space for in-room therapies that focus on improving functional independence and self care (eating, bathing, and dressing). One of the additional private rooms will be an isolation room (that is required by hospital licensure rules) for those patients who have or are suspected of having infections transmitted by the airborne route."

In Section II.6, pages 33-35, the applicant describes UNC's Performance Improvement program, the Inpatient Rehabilitation Center's commitment to maintaining accreditation by the Commission on Accreditation of Rehabilitation Facilities (CARF), and the use of benchmarking data.

The applicant adequately demonstrates that the proposal will promote safety and quality. However, the applicant does not adequately demonstrate that the proposal will maximize healthcare value and that the financial projections that are inconsistent with publically available data incorporate these basic principles in meeting the need identified in the 2012 SMFP and the needs of all residents in the service area. In summary, the application is not consistent with Policy GEN-3.

The applicant's discussion of Policy GEN-4 is as follows:

In Section XI.5(a), pages 128-129, UNC states:

"*UNC Hospitals will develop and implement an Energy Efficiency and Sustainability Plan for the inpatient rehabilitation project that conforms to or exceeds the energy efficiency and water conservation standards incorporated in the latest editions of the North Carolina State Building Codes. The Plan shall not adversely affect patient or resident health, safety or infection control.*

The facility renovation plans and specifications for the project shall be researched and developed by the project architect, with input from facility engineering and administration, to include specific design features to ensure improved energy efficiency and water conservation. UNC Hospitals will develop and implement an Energy Efficiency and Sustainability Plan that is specific to the project and will address the following systems and features:

1) Lighting Systems …
2) Water Systems …
3) Heating, Ventilation, and Air-conditioning (HVAC) Systems …
4) Minor Equipment …
5) Other potential energy conservation measures for the project will be researched and evaluated by the project engineer and architect as well as UNC administration."

The applicant states that the Plan will address the following systems and features: lighting systems, water systems, HVAC systems, and minor equipment. The applicant adequately demonstrates that applicable energy saving features have been incorporated into the construction plans.

The application is consistent with Policy GEN-4.

In summary, the application is conforming to GEN-4 and to the need determination in the 2012 SMFP; however it is not consistent with Policy GEN-3. Therefore, the application is non-conforming to this criterion.

WakeMed's discussion of Policy GEN-3 is as follows:

Maximize Healthcare Value

In Section III.2, page 79, the applicant states:

> *"The addition of beds to WakeMed Rehab Hospital will also maximize healthcare value for the resources expended. As HSA IV's largest and most comprehensive inpatient rehabilitation provider, WakeMed Rehab has staffing, clinical programming, information systems, and administrative structures in place to accommodate 12 additional beds with minimal additional operational expenses. A provider starting up a new inpatient unit must incur a number of fixed expenses that WakeMed Rehab will not be required to make. Given the specialized programs available at WakeMed Rehab Hospital, patients utilizing the proposed 12 additional beds will have access to more comprehensive range of services that at any other provider in HSA IV.*
>
> *Please see Section VI for additional information regarding WakeMed's efforts to serve the medically underserved."*

The applicant adequately demonstrates how its proposal maximizes healthcare value.

Promote Equitable Access

In Section III.2, page 78, the applicant states:

> "*WakeMed has long been committed to improving patient access. WakeMed was founded in 1961 as a Hill-Burton hospital and was the first racially integrated medical facility in the community. The system was initially comprised of a tertiary central campus and four community hospitals in Wake Forest, Apex, Zebulon, and Fuquay-Varina. These facilities provided access and dramatically improved the quality of life* [in] *those communities. As healthcare delivery has advanced, much has changed, but WakeMed still operates its facilities in Zebulon and Fuquay-Varina, and has developed a healthplex facility in Apex. WakeMed North Healthplex, located in north Raleigh, is very convenient to residents of Wake Forest.*
>
> *Section VI of this application provides additional details regarding WakeMed's commitment to providing access to all persons, as well as its disproportionate share of Wake County's uninsured burden. In FY 2011, WakeMed provided approximately $264*

million in charges for charity care, an amount and proportion of gross revenues that far exceed other providers in Wake County. Payer mixes, charity care and bed debt percentages identified in this application document that the project will promote access to all patients, regardless of their ability to pay. WakeMed continues to develop and enhance its partnerships with community groups, all geared toward increasing medically underserved groups' access to care. Please see the response to Questions V.4 and VI.2 for more details.

The proposed project represents an increase in inpatient rehab bed capacity, which will improve access to all patients in need of rehabilitative services, including persons in medically underserved groups."

In Section VI.2, pages 135-136, the applicant states:

"As a private, not-for-profit hospital system, WakeMed traditionally ensures access to health care services for all patients noted in items (a) through (f) above. …

WakeMed has multiple, explicit statements of non-discrimination in its policies and corporate documents:

- *The WakeMed Administrative Policy 'Patient Rights and Responsibilities' states, 'Patients are admitted to WakeMed facilities without regard to race, religion, gender, sexual orientation, national origin, disability, or source of payment for care.' Please see Attachment 22 for a copy of this policy."*

In Section VI.4(a), page 142, the applicant confirms that all persons will have access to the proposed facility or services regardless of their ability to pay. The applicant adequately demonstrates how its proposal promotes equitable access.

Promote Safety and Quality

In Section III.2, page 78, the applicant states:

"As noted in the response to Question II.6, WakeMed is committed to patient safety and quality, as evidenced by its Performance Improvement Plan (see Attachment 10), its Patient Safety Plan (see Attachment 12), its educational offerings for employees (see Attachment 16), and its quality reporting initiatives. WakeMed's Center for Patient Safety is involved in all aspects of patient care and employs the philosophy of "Providing the Right Care to the Right Patient at the Right Time Every Time" to reduce and eliminate medical errors, to improve outcomes, and to ensure that protocols are followed consistently. In October 2009, WakeMed was once again accredited by The Joint Commission, validating that it provides safe and quality patient care. WakeMed Rehab Hospital is accredited by the Commission on Accreditation for Rehabilitation Facilities (CARF) International through August 2014. The proposed project will alleviate capacity issues that result in delays in patient admission, thereby promoting safety and quality of care."

In Section II.6, pages 40-50, the applicant describes in detail the methods used by the facility to ensure and maintain quality care. The applicant adequately demonstrates that the proposal will promote safety and quality. Furthermore, the applicant adequately demonstrates that the proposal will maximize healthcare value and that the projected volumes for the proposed inpatient rehabilitation beds incorporate these basic principles in meeting the need identified in the 2012 SMFP and the needs of all residents in the service area. In summary, the application is conforming to Policy GEN-3.

The applicant's discussion of Policy GEN-4 is as follows:

In Section III.2, pages 79-80, the applicant states:

> *"The proposed project is consistent with 2012 SMFP Policy GEN-4: Energy Efficiency and Sustainability for Health Service Facilities…*
>
> *WakeMed develops all capital projects with a goal of maximizing energy efficiency. WakeMed's Strategic Plan contains a statement that the hospital system will: 'pursue environmentally-friendly 'green' design in facility and grounds projects.' The hospital system develops new buildings to utilize passive solar energy and natural lighting to the greatest extent possible. In both new construction and renovations, WakeMed uses energy-efficient windows and insulation to maximize energy efficiency. Heating and HVAC systems are high-efficiency units, and reflect the best technology available on the market. In 2010, a new Central Plant facility opened at WakeMed Raleigh Campus, replacing a facility that was more than 30 years old. The new Central Plant utilizes more energy-efficient chilled water and boiler equipment, and also have greater capacities than the equipment they replaced.*
>
> *WakeMed is committed to designing its new and renovated facilities, with the goal of meeting the Leadership in Energy and Environmental Design (LEED) certification criteria, as established by the U.S. Green Building Council (USGBC)."*

In Section XI.5(a)-(b), pages 174-175, WakeMed states:

> *"All new construction and renovation designs will meet the 2012 North Carolina Energy Code, which requires inclusion of energy efficient items such as lighting ballasts, sustainable materials, low-flow water devices, such as sinks and toilets, and air handling systems.*
>
> *This project will be served by the recently completed Central Plant facility at the Raleigh Campus, which has energy efficient chillers for the chilled water system and high efficiency air handlers. The new Central Plant replaced a facility that was more than 30 years old, and which utilized outdated equipment."*

The application is conforming to Policy GEN-4.

In summary, the application is consistent with Policies GEN-3 and GEN-4 and is conforming to the need determination in the 2012 SMFP. Therefore, the application is conforming to this criterion.

Duke Raleigh's discussion of Policy GEN-3 is as follows:

Maximize Healthcare Value

In Section III.2, pages 87-88, the applicant states that the proposed project minimizes capital expenditures, maximizes staffing efficiencies and productivity, allows for shared utilization of support services and administration, and provides effective coordination and communication for acute care and post-acute care providers and patients. The applicant adequately demonstrates how its proposal maximizes healthcare value.

Promote Equitable Access

In Section VI.2, page 87, the applicant states:

> *"By developing 12 inpatient rehabilitation beds at DRAH, the project will promote access for all patients, including the medically underserved. As noted in Section VI of this application, DRAH projects a combined Medicare and Medicaid payor mix of 75.9%.*
>
> *All individuals will have access to DRAH's proposed services. DRAH will not deny services to anyone due to economic status, race, gender, age, or handicap, as stated more fully in Section VI."*

In Section VI.4(a), page 120, the applicant confirms that all persons will have access to the proposed facility or services regardless of their ability to pay.

In addition, in Section VI.2, 5, and 6, pages 118-123, the applicant provides a description of Duke Raleigh's commitment to provide care to all patients, including their charity care policy. The applicant adequately demonstrates how its proposal promotes equitable access.

Promote Safety and Quality

In Section III.2, page 87, the applicant states that the project will promote quality and safety by locating the beds within Duke Raleigh thus eliminating the need for Duke Raleigh to transfer patients to other locations.

In Section II.6, pages 20-21, the applicant discusses its quality management plan:

> *"DRAH's quality management program emphasizes a customer-oriented perspective that is used by each department to determine the needs of patients, physicians and others that use the Hospital's services. Each department strives to exceed customers' expectations.*

Direction for Quality Improvement comes from the Performance Improvement Oversight Committee (PIOC), which identifies Performance Improvement projects for the Hospital. PIOC is chaired by the President and consists of members of the Hospital's medical staff, department directors and administrative staff. There are two key committees reporting into the PIOC. The first committee, Patient Safety and Clinical Quality Committee (PSCQ), represents members from various hospital committees and assesses reports from each of the hospital committees and patient safety/clinical quality teams. The second committee, Six Sigma Oversight Committee (SSOC), is chaired by the Chief Operating Officer and includes active membership from the Chief Medical Officer, Chief Nursing Officer, Assistant Chief Nursing Officer, performance improvement leaders, and black belt trained employees. Taking direction from the PIOC, this committee establishes projects aligning with the operational and performance improvement goals.

…

The goal of using the FOCUS PDCA methodology has been to standardize the quality improvement process throughout the Hospital, joining clinical and non-clinical quality efforts with a process that can be easily implemented, measured and maintained. Please see Exhibit 4 for copies of the following documents relating to the Hospital's efforts to ensure quality care:

- *Organizational Performance Improvement and Patient Safety Plan*
- *Utilization Management Plan."*

The applicant adequately demonstrates that the proposal will promote safety and quality, and maximize healthcare value. Furthermore the applicant adequately demonstrates that the projected volumes for the proposed inpatient rehabilitation beds incorporate these basic principles in meeting the need identified in the 2012 SMFP and the needs of all residents in the service area. In summary, the application is consistent with Policy GEN-3.

The applicant's discussion of Policy GEN-4 is as follows:

In Section III.2, page 88, the applicant states: *"DRAH is committed to energy efficiency and sustainability that balances the need for healthcare services and environmental sustainability. New high efficiency lighting, heating and air conditioning enhancement, and improved plumbing fixtures will be provided in the renovated areas."*

In Section XI.5, pages 154-155, Duke Raleigh states:

"DRAH will work with experienced architects and engineers to develop this proposed renovation project to ensure energy efficient systems are incorporated. The design team for this project has LEED and GGHC experience, and will seek to deliver the following:

- *Meet or exceed the requirements of the NC Building Code in effect when construction drawings are submitted for review to the DHSR Construction Section,*
- *Use the EPA Energy Star for Hospital's rating system to compare performance across DUHS, North Carolina, and the United States following 12 months of continuous operation.*

- *Use USGBC LEED guidelines and Hospitals for a Healthy Environment Green Guide for Healthcare (GGHC) as appropriate to identify opportunities to improve facility-wide operations, safety and patient outcomes.*
- *Use energy guidelines of the US Dept. of Housing and Urban Development, US Dept. of Energy, and the American Society of Heating, Refrigeration, and Air Conditioning Engineers for the design of health care facilities.*

…

The proposed facility renovations will be completed using energy efficient materials and methods, such as efficiency lighting, heating and air conditioning enhancements, and upgraded plumbing fixtures. …

Plumbing Fixtures: New fixtures will be institutional grade with types and mounting heights suitable for the application. Fixtures will include the following features:

1. *Low flow, floor mounted flush valve toilets*
2. *Low flow faucet aerators for lavatories and hand-wash sinks*
3. *Low flow shower heads*
4. *Water coolers with non-HCFC refrigerants*
5. *Low flow urinals in public restrooms*
6. *Toilet flush valves with dual flush technology in public restrooms*
7. *Automatic sensor faucets in public restrooms"*

The application is consistent with Policy GEN-4.

In summary, the application is consistent with Policy GEN-3 and Policy GEN-4 and is conforming to the need determination in the 2011 SMFP. Therefore, the application is conforming to this criterion.

Johnston's discussion of Policy GEN-3 is as follows:

Maximize Healthcare Value

In Section III.2, page 99, the applicant states that the proposed project will be a cost effective way to provide these services to residents of Johnston County:

"First, locating the unit in the hospital in renovated existing space will be less expensive than constructing new space for the unit. In 2007, Johnston Health was approved to construct a new bed tower and with that project relocated the majority of its licensed bed capacity. The project was needed because renovating multiple floors of a 60 year old hospital to create new inpatient bed units would not be cost effective. However, constructing new space for a much smaller project, such as the proposed eight-bed unit is not as cost effective as it is to renovate existing space, even when the space was constructed in the early 1950s. When Johnston Health opened its new bed tower, the bed relocation left a significant amount of vacant space in the old hospital tower. …

Johnston Health plans to renovate 9,097 square feet of space to meet the requirements of inpatient rehabilitation services which will be the most cost effective means of creating space for the new unit.

In addition to the cost savings realized by renovating existing space, the new rehabilitation unit will also be more cost effective through the use of shared costs with other hospital services. For example, the rehabilitation unit will need many of the same support services as other hospital departments. … The more departments that share costs for services, the lower the cost for each department, including the new rehabilitation unit."

However, the applicant does not adequately demonstrate that the proposal will maximize healthcare value and that the projected volumes for the proposed inpatient rehabilitation beds incorporate these basic principles in meeting the need identified in the 2012 SMFP and the needs of all residents in the service area. Therefore, the applicant did not adequately demonstrate that the proposal would maximize healthcare value.

Promote Equitable Access

In Section III.2, page 100, the applicant states:

"At present, Johnston County does not have an inpatient rehabilitation facility. Residents of the county that need inpatient rehabilitation care must travel outside the county to receive these services. HSA IV has four inpatient rehabilitation facilities located in four counties: Durham Regional Hospital (Durham County), UNC Hospitals (Orange County), WakeMed (Wake County), and Maria Parham (Vance County). Based on discharge data provided by Truven, Durham Regional Hospital, UNC Hospitals, and WakeMed are the primary facilities used by Johnston County residents. As shown in the table below, distances from Smithfield (county seat of Johnston County) to each of the inpatient rehabilitation facilities range from 30 miles to 75 miles.

Distance from Smithfield to:	***Miles***
WakeMed (Wake County)	*30*
Durham Regional Hospital (Durham County)	*55*
UNC Hospitals (Orange County)	*58*
Maria Parham Hospital (Vance County)	*75*

Source: Google maps

Certainly, having an inpatient rehabilitation facility in the hospital where residents receive much of their health care is a better option than driving to other counties to unfamiliar hospitals and health care facilities and most assuredly is an improvement in access to these specialized services."

In Section VI.2, page 127, the applicant states:

"Johnston Health does not discriminate against low-income persons, racial or ethnic minorities, women, handicapped persons, the elderly, or other underserved persons, including the medically indigent. Johnston Health provides access to care to all patients

regardless of age, race, national or ethnic origin, disability, gender, income, or immediate ability to pay. …

During FY 2011, Johnston Health provided over $54.6 million or ten percent of gross revenue in bad debt and charity care."

In Section VI.4(a), page 128, the applicant confirms that all persons will have access to the proposed facility or services regardless of their ability to pay.

In addition, in Section VI.5-6, pages 129-130, the applicant provides a description of Johnston's commitment to provide care to all patients, including their admissions and financial policies. The applicant adequately demonstrates how its proposal promotes equitable access.

Promote Safety and Quality

In Section III.2, page 98, the applicant describes how it promotes safety and quality:

"As described in the response to II.6, Johnston Health utilizes a variety of quality initiative tools that support continued improvement in the services it provides. Johnston Health has a deep commitment to quality care that will result in a positive impact on the quality of care provided through the proposed inpatient rehabilitation unit.

In addition, Johnston Health proposes to contract with UNC Hospitals for management of the rehabilitation unit. UNC Hospitals has experience in operating inpatient rehabilitation services and is accredited by the Commission on Accreditation of Rehabilitation Facilities (CARF). Johnston Health will seek accreditation from CARF at its earliest opportunity.

In Section II.6, pages 29-33, the applicant states that the proposed inpatient rehabilitation unit will adhere to overall hospital policies and procedures including those regarding quality. A variety of mechanisms to assure that high quality, cost-effective care is provided include a Performance Improvement Plan, a Utilization Review Plan, and Risk Management Policies. (See Exhibits 14-16). The applicant states:

"the purpose of the Performance Improvement Plan is to demonstrate the coordination of performance improvement activities throughout the organization. The scope of the plan includes an overall assessment of the efficacy of performance improvement activities with a focus on continually improving care provided, and patient safety practices conducted, throughout the hospital. The program consists of the following focus components: performance improvement, patient safety, quality assessment improvement, and quality control activities. …

As outlined in the Utilization Review Plan, the objectives of the plan are to 'endeavor to facilitate appropriate utilization of hospital resources through review, analysis and evaluation of departmental and clinical practices.' Johnston Health's Utilization

Management committee is responsible for handling utilization review to assure quality outcomes. …

The purpose of Johnston Health's Risk Management Policies, Exhibit 16, are to identify and reduce or eliminate the risk of injury to patients, visitors, employees, and medical staff members, and to protect the organization's financial resources. "

The applicant adequately demonstrates that the proposal will promote safety and quality. However, the applicant did not adequately demonstrate that the proposal will maximize healthcare value. Therefore, the applicant is not consistent with Policy GEN-3.

The applicant's discussion of Policy GEN-4 is as follows:

In Section III.2, page 101, the applicant refers to Exhibit 25 which contains a written statement by Johnston's CEO regarding Johnston's plan for improved energy efficiency and water conservation. The statement in Exhibit 25 reads in part:

"As indicated in Section XI.5.(a) and (b) of the application, Johnston Health proposes specific actions related to mechanical, plumbing and electrical systems efficiencies and how those actions will translate into improving utility costs. …

In regard to water conservation, Johnston Health proposes the following actions. Water conservation as related to the renovation of space in the existing hospital will occur primarily through plumbing fixtures. Specifically, Johnston Health offers the following table to explain the conservation measures to be achieved through water conserving flow plumbing as opposed to standard flow plumbing.

Fixture Type	***Standard Flow/Consumption***	***Water Conserving Flow/Conserving***
Sink/Lavatory Faucets	*2.0 gpm*	*1.5 gpm*
Kitchen Sink Faucet	*2.2 gpm*	*1.5 gpm*
Shower Faucet	*2.5 gpm*	*1.5 gpm*
Water Closet Flush Valve	*1.6 gallons/flush*	*1.28 gallon/flush(1)*

Johnston Health believes these specific actions will improve energy efficiency and water conservation with the proposed project. Moreover, should Johnston Health become aware of other measures that will support and enhance these actions to further improve conservation of any of our resources, we will certainly move to implement additional actions as appropriate for the wellbeing of the facility and the patients we serve."

In Section XI.5(a), pages 158-159, Johnston states:

"As part of the existing hospital facility, the renovations for the proposed inpatient unit will incorporate energy saving features used in the hospital as well as other appropriate upgrades and improvements. These existing and proposed features include the following.

<u>Mechanical and Plumbing Systems</u>

- *The heating, ventilating and air conditioning (HVAC) loads will be calculated using computer load simulating program (Trane's Trace) to avoid over-sizing equipment capacities.*
- *Mechanical systems will be selected to comply with the North Carolina Energy Code based on the acceptable practice. Compliance measures will include:*
    - *Minimum pipe insulation compliance.*
    - *Minimum duct insulation compliance.*
    - *Sealed ductwork to minimize air leakage.*
    - *Supply air temperature reset to minimize overcooling or overheating.*
    - *Setback and optimum start / stop of systems.*
    - *Minimum equipment efficiency compliance, such as use of premium efficiency motors.*
- *Leak testing of new and existing medium pressure duct in the renovation area.*
- *Pre-test HVAC existing HVAC* [sic] *equipment performance to identify areas to improve or correct excess air flows, and better control building envelop infiltration issues.*
- *Select, older air terminal units will be replaced with new, more efficient units with direct digital controls and heating water coils to better react to space temperature requirements and reduce duct pressure requirements for proper operation. Units will be connected to the hospital's energy management system.*
- *New air terminal units will have direct digital controls allowing space temperature monitoring and supply air temperature reset when area in* [is] *unoccupied. Units will be connected to the hospital's energy management system.*
- *New ventilation air handling unit's direct digital controls will pre-treat (heat or cool) air based on a constant review of space temperature requirements of areas served. Unit will be connected to hospital's energy management system.*
- *New ventilation air handling unit's supply fan will have a variable frequency drive to adjust optimum speed to meet minimum airflow demand.*
- *Microprocessor-based medical gas area alarm.*

<u>Electrical</u>

- *Multi-level light switching, dimming where possible*
- *LED exit and night lighting*
- *T-8 lamps*
- *Electronic Ballasts*
- *Compact Florescent Lamps*
- *Electrical distribution system to new air handling unit 277 /480V*
- *All dry-type transformers will meet the NEMA Standard TP-1"*

The application is conforming to Policy GEN-4.

In summary, the application is conforming to the need determination in the 2012 SMFP and to Policy GEN-4; however it is not consistent with Policy GEN-3. Therefore, the application is not conforming to this criterion.

(2) Repealed effective July 1, 1987.

(3) The applicant shall identify the population to be served by the proposed project, and shall demonstrate the need that this population has for the services proposed, and the extent to which all residents of the area, and, in particular, low income persons, racial and ethnic minorities, women, handicapped persons, the elderly, and other underserved groups are likely to have access to the services proposed.

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Duke Raleigh

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Johnston

UNC proposes to develop 12 additional inpatient rehabilitation beds at its existing location, for a total of 42 beds to be comprised of 24 private beds and 18 semi-private beds, and renovate existing space.

Population to be Served

In Section III.4, page 77, UNC provides its current inpatient rehabilitation patient origin, by county of residence, for FY12, as shown in the table below:

Patient Origin of UNC Inpatient Rehabilitation Patients in FY12

County	Cases	% of Total
Alamance	44	7.86%
Beaufort	3	0.54%
Bladen	1	0.18%
Brunswick	3	0.54%
Buncombe	2	0.36%
Burke	3	0.54%
Caldwell	1	0.18%
Carteret	1	0.18%
Caswell	9	1.61%
Chatham	44	7.86%
Columbus	1	0.18%
Craven	8	1.43%
Cumberland	37	6.61%
Dare	2	0.36%
Duplin	3	0.54%
Durham	31	5.54%
Edgecombe	1	0.18%
Forsyth	2	0.36%
Franklin	3	0.54%
Gates	1	0.18%
Guilford	11	1.96%
Halifax	5	0.89%
Harnett	12	2.14%
Henderson	1	0.18%
Hoke	4	0.71%
Iredell	1	0.18%
Johnston	13	2.32%
Lee	27	4.82%

County	Cases	% of Total
Lenoir	1	0.18%
Martin	1	0.18%
Mecklenburg	3	0.54%
Montgomery	4	0.71%
Moore	7	1.25%
Nash	7	1.25%
New Hanover	8	1.43%
Northampton	1	0.18%
Onslow	12	2.14%
Orange	88	15.71%
Pasquotank	1	0.18%
Pender	1	0.18%
Perquimans	1	0.18%
Person	7	1.25%
Randolph	9	1.61%
Richmond	5	0.89%
Robeson	20	3.57%
Rockingham	2	0.36%
Sampson	12	2.14%
Vance	7	1.25%
Wake	56	10.00%
Wayne	7	1.25%
Wilson	4	0.71%
Yancey	1	0.18%
NC Total	**539**	**96.25%**
Other US Total	21	3.75%
Total	**560**	**100.00%**

In Section III.5, page 78, the applicant provides projected patient origin, by county of residence, for the second year of operation following completion of the project, as shown in the following table:

Projected Patient Origin of UNC Inpatient Rehabilitation Patients in PY 2 (FY16)

County	Cases	% of Total
Alamance	60	7.86%
Beaufort	4	0.54%
Bladen	1	0.18%
Brunswick	4	0.54%
Buncombe	3	0.36%
Burke	4	0.54%
Caldwell	1	0.18%
Carteret	1	0.18%
Caswell	12	1.61%
Chatham	60	7.86%
Columbus	1	0.18%
Craven	11	1.43%
Cumberland	50	6.61%
Dare	3	0.36%
Duplin	4	0.54%
Durham	42	5.54%
Edgecombe	1	0.18%
Forsyth	3	0.36%
Franklin	4	0.54%
Gates	1	0.18%
Guilford	15	1.96%
Halifax	7	0.89%
Harnett	16	2.14%
Henderson	1	0.18%
Hoke	5	0.71%
Iredell	1	0.18%
Johnston	18	2.32%
Lee	37	4.82%

County	Cases	% of Total
Lenoir	1	0.18%
Martin	1	0.18%
Mecklenburg	4	0.54%
Montgomery	5	0.71%
Moore	10	1.25%
Nash	10	1.25%
New Hanover	11	1.43%
Northampton	1	0.18%
Onslow	16	2.14%
Orange	120	15.71%
Pasquotank	1	0.18%
Pender	1	0.18%
Perquimans	1	0.18%
Person	10	1.25%
Randolph	12	1.61%
Richmond	7	0.89%
Robeson	27	3.57%
Rockingham	3	0.36%
Sampson	16	2.14%
Vance	10	1.25%
Wake	76	10.00%
Wayne	10	1.25%
Wilson	5	0.71%
Yancey	1	0.18%
NC Total	**733**	**96.25%**
Other US Total	29	3.75%
Total	**762**	**100.00%**

On page 79, the applicant states:

> *"The methodology for projecting patient origin was based on actual data from UNC Hospitals' FY 2012 records. Since patient origin has historically remained consistent with respect to utilization trends, the same patient origin mix is projected forward. No material change in the patient origin is expected for inpatient rehabilitation."*

The applicant adequately identified the population it proposes to serve.

Demonstration of Need

In Section III.1, pages 41-62, the applicant discusses the need for the project which is based in part on the 2012 SMFP need determination for 20 additional inpatient rehabilitation beds in HSA IV, in addition to the following, beginning on page 48:

- *"The projected growth and aging of the population in Health Service Area IV will generate higher demand for inpatient rehabilitation.*

- *Additional inpatient rehabilitation beds are justified for the western region of the HSA IV based on geographic/demographic analysis.*

- *The project will provide needed capacity for continuity of care and to accommodate growth from UNC Hospitals' acute care discharges as well as increased transfers from other facilities.*

- *UNC Rehabilitation Center recognizes the need to increase the number of private rooms to enhance patient satisfaction and convenience.*

- *The UNC methodology for the proposed 12 additional inpatient beds is based on accurate historical data and reasonable and conservative assumptions; the project conforms to the NC regulatory performance standard for inpatient rehabilitation projects.*

- *The need for the project is supported by support letters from UNC physicians, community physicians and hospitals.*

- *UNC Rehabilitation Center recognizes the needs to expand bed capacity to support the expansion of the PM&R residency program to add one physiatrist faculty position and three PM&R medical residents."*

The applicant states that annual occupancy of its inpatient rehabilitation center has exceeded 80% for the five years from FY 2007 through FY 2012.

Continuing in Section III, beginning on page 50, the applicant discusses demographics and the geographical distribution of existing beds:

> *"From 2012 through 2017, the population of Health Service Area IV is projected to increase by 158,636 persons. This projected growth of 8.39 percent exceeds the statewide growth of 5.37 percent. …*
>
> *The aging of the population will drive greater demand for inpatient rehabilitation as the senior population segments (ages 65 and older) have the highest incidence of musculoskeletal, neurological, and cardiovascular diseases."*

As shown in the following table, Orange County's age 65+ population is projected to increase 31% between 2012 and 2017, a slightly larger percentage increase than that of HSA IV during the same time period (27%).

	2012 Population 65+	2012 Percent of Total County Pop. 65+	2017 Population 65+	2017 Percent of Total County Pop. 65+	Percent Increase in Pop. 65+ 2012-2017*	2017 Percent of HSA IV Population 65+
Chatham	13,253	20.14%	17,192	23.84%	29.7%	7%
Durham	28,762	10.42%	35,443	12.05%	23.2%	13%
Franklin	8,721	13.80%	11,219	16.27%	28.6%	4%
Granville	8,309	13.53%	10,220	15.96%	23.0%	4%
Johnston	19,506	11.12%	24,481	12.89%	25.5%	9%
Lee	8,456	14.40%	9,523	15.66%	12.6%	4%
Orange	14,605	10.60%	19,167	12.98%	31.2%	7%
Person	6,528	16.22%	7,862	18.44%	20.4%	3%
Vance	6,916	15.13%	7,773	16.73%	12.4%	3%
Wake	88,066	9.32%	115,390	11.08%	31.0%	44%
Warren	4,293	9.32%	4,863	23.32%	13.3%	2%
Total HSA IV	207,415	11.83%	263,133	13.83%	26.9%	100%
State Total	1,349,431	13.80%	1,603,468	15.56%	18.8%	-

Source: Table on page 51of application.
*Analyst calculated

Continuing on page 51, the applicant states:

> *"Based on these demographic factors, combined with the high utilization of existing licensed beds, Orange County is a highly effective location for the proposed addition of inpatient rehabilitation beds. UNC Hospitals provides a high level of access to patients from most all of the rural counties that have high senior population percentages.*
>
> *Geographical Distribution of Existing Rehabilitation Beds*
>
> *The proposed project will add 12 inpatient rehabilitation beds at UNC Hospitals and will enhance geographic access for medically underserved patients from many rural counties from within HSA IV and other HSAs with high senior population percentages. It would be incorrect to analyze and compare the current and proposed number of inpatient rehabilitation beds for UNC Hospitals based on the population of Orange County, because UNC Hospitals is designated by the North Carolina Legislature as a public academic medical center operated by and for all the people of North Carolina. Consistent with the mission of UNC Hospitals, the patient origin data for the UNC acute care services and inpatient rehabilitation demonstrates that patients from throughout the state are being served.*
>
> *In contrast to UNC Hospitals, other hospitals in HSA IV have more compact and localized service areas which are reflected in their respective patient origin data. The current allocation of 98 existing and approved inpatient rehabilitation beds located in Wake County provides abundant inpatient rehabilitation capacity to serve the Wake*

County population. The previous CON approval to add 14 beds to the existing 84 beds at WakeMed (CON Project ID # J-8631-11) assigned to them 58 percent of the Inpatient Rehabilitation bed inventory in Wake County, which has only 50 percent of the total population of HSA IV.

	Wake County	***HSA IV***	***Percentages***
Inpatient Rehabilitation Beds	*98*	*169*	*58.0%*
2012 Population	*945,209*	*1,890,466*	*50.0%*

Hospitals located in Wake County draw the majority of their patients from within the home county and are less effective as compared to UNC Hospitals at serving populations of rural counties both within and outside of HSA IV."

UNC next discusses medical conditions requiring hospitalization that are precursors to inpatient rehabilitation. In Section III.1, page 52, the applicant states:

Medical Conditions

There are multiple conditions that require hospitalization and are precursors to inpatient rehabilitation. The thirteen conditions (and ICD-9 codes) defined by CMS as the core populations with a need for acute rehabilitation include:

- *Stroke*
- *Spinal Cord Injury (Traumatic and Non-Traumatic)*
- *Brain Injury (Traumatic and Non-Traumatic)*
- *Multiple Major Trauma*
- *Congenital Deformities*
- *Amputation*
- *Fracture of Femur*
- *Neurological Disorders*
- *Burns*
- *Rheumatoid Arthritis*
- *Systemic Vasculidities*
- *Osteoarthritis*
- *Joint replacement with one or more of the following specified criteria:*
    - *Bi-lateral knee or hip joint replacement*
    - *Body Mass Index >50*
    - *85 years of age or older upon admission*

As an academic medical center, UNC Hospitals admits adult and pediatric acute care patients and provides a complete scope of tertiary and quaternary services to treat all of the above conditions. The growth and aging of the population of the service area will increase demand for acute care and subsequent inpatient rehabilitation services due to specific disease categories. "

Continuing on page 59, the applicant discusses its overall inpatient bed situation, making the following points:

- UNC is a referral hospital, trauma center, and provider of specialty care for complex conditions affecting patients across the state.
- Over the past several years, beds to accommodate specific patient needs are often full, thus UNC has had to delay or decline some transfer requests.
- Several previously-approved CON projects to increase total acute and intensive care bed capacity are in development. Acute care admissions will increase as the beds become licensed. Additional acute/ICU admissions and transfers will generate higher demand for inpatient rehabilitation beds.
- Additional inpatient rehabilitation capacity is needed to move patients through the continuum of care.
- Moving patients through the continuum without delay promotes patient recovery and lower lengths of stay.

On page 60, UNC discusses its need to increase private rooms in the inpatient rehabilitation center, as follows:

- In the past year, UNC transferred 59 acute care patients to other inpatient rehabilitation facilities for the following reasons:
  - Full capacity – 7
  - Closer to family/patient home – 28
  - Family choice – 24
    - UNC estimates at least half of "family choice" was because no private patient rooms were available.
- Shriners Hospitals change in policy
  - Previously provided services at no charge, so some transfers from UNC
  - Beginning July 2011, began billing insurance and charging co-payments
  - UNC expects increase in pediatric admissions to inpatient rehabilitation
- Addition of private rooms will support higher utilization of all patient types
  - Including pediatric and burn patients
    - Patient categories that require private rooms - for infection control, privacy issues and psychosocial needs.

"The project involves an increase of 12 beds and an increase in the number of private patient rooms as shown in the following chart:

Current	***Rooms***	***Beds***
Semi-private	*9*	*18*

Private	*12*	*12*
Totals	*21*	*30*
Proposed	***Rooms***	***Beds***
Semi-private	*9*	*18*
Private	*24*	*24*
Totals	*33*	*42*

All of the additional rooms will be private. Private patient rooms reduce the risk of hospital-acquired infections, allow for greater flexibility in operation and management, and have a positive therapeutic impact on the patients. Increasing the number of private patient rooms will provide rehabilitation patients with greater privacy and sufficient space for in-room therapies that focus on improving functional independence and self care (eating, bathing, and dressing)."

In Section III.1, page 61, UNC provides historical inpatient rehabilitation occupancy data for all HSA IV facilities and for UNC as shown in the following two tables.

HSA IV Hospitals with Inpatient Rehabilitation Beds

	# Licensed Beds	# Beds Approved, Not Yet Operational	FY 2010	FY 2011	FY 2010 Occupancy	FY 2011 Occupancy
UNC Hospitals	30	0	8,937	9,100	81.62%	83.11%
WakeMed	84	14	28,220	28,415	92.04%	92.68%
Maria Parham	11	0	2,482	2,657	61.82%	66.18%
Durham Regional Hospital	30	0	8,662	8,467	79.11%	77.32%
Total Combined HSA IV	**155**	**14**	**48,301**	**48,639**	**85.38%**	**85.97%**

Annual occupancy of UNC's inpatient rehabilitation beds has exceeded 80 percent for the past five years, as shown in the following table from page 61.

UNC Inpatient Rehabilitation Bed Occupancy FY07- FY11

Annual Reporting Periods	# Beds	Annual Days	Occupancy %
FY 2006	30	8,429	76.98%
FY 2007	30	9,084	82.96%
FY 2008	30	9,046	82.61%
FY 2009	30	9,303	84.96%
FY 2010	30	8,937	81.62%
FY 2011	30	9,100	83.11%

In Section III.1, pages 62-63, UNC lists the following major factors underlying their methodology and assumptions for projecting future utilization:

- Growth and aging of the population is expected to increase demand for inpatient rehab for all types of inpatient rehabilitation diagnoses.
- UNC has 23 new acute care beds becoming operational in October 2012 with additional acute care beds becoming operational over the next several years. This increased capacity will allow additional admissions and transfers which will increase internal demand for inpatient rehabilitation beds.
- UNC is implementing strategies to reduce transfers to other inpatient rehabilitation facilities.

On pages 63-72, UNC outlines its methodology and assumptions which begin with **Step 1: The most recent 12 months' data**, as shown below:

UNC Inpatient Rehabilitation Utilization FY 2012

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Totals
Pt. Discharges	46	50	53	36	57	46	44	49	39	37	57	46	560
Pt. Days	788	766	743	750	702	719	773	690	815	810	839	740	9,135
Bed Days	930	930	900	930	900	930	930	870	930	900	930	900	10,980
ALOS	17.13	15.32	14.02	20.83	12.32	15.63	17.57	14.08	20.90	21.89	14.72	16.09	16.31
Occupancy	84.7%	82.4%	82.6%	80.6%	78.0%	77.3%	83.1%	79.3%	87.6%	90.0%	90.2%	82.2%	83.2%

Step 2: Assume 8% annual growth in patient discharges, and **Step 3: Assume that the overall average length of stay (ALOS) remains at 16.3 days based on the most recent 12 months' ALOS.** See the table below:

Methodology	**Actual**	**Assumptions**	**Intervening Years**		**PY1**	**PY2**	**PY3**
	2012		**FY13**	**FY14**	**FY15**	**FY16**	**FY17**
Pt. Discharges	560	8% increase	605	653	705	762	823
Pt. Days	9,135		9,866	10,655	11,507	12,428	13,422
Licensed Beds	30		30	30	42	42	42
Bed Days	10,980		10,950	10,950	15,330	15,372	15,330
ALOS	16.31	Remains same	16.31	16.31	16.31	16.31	16.31
Occupancy	83.2%		90.10%	97.31%	75.07%	80.85%	87.56%

The following table provides a numerical breakdown of the sources, discussed above, of the additional patients projected for each year.

8% Annual Growth Justification	**Actua**	**Intervening**	**PY1**	**PY2**	**PY3**

Summary	l	Years				
	FY12	FY13	FY14	FY15	FY16	FY17
Total Inpatient Rehab Patients	560	605	653	705	762	823
% Increase Per Year		8%	8%	8%	8%	8%
Increased # Patients From Prior Year		**45**	**48**	**52**	**56**	**61**
Breakdown of Sources of Additional Patients						
Pop. Growth, Aging, Additional Patients		11	12	13	14	15
Fewer Patients Transferring to Other Rehab Facilities		12	12	13	14	15
Increasing Pediatric Patients		9	11	12	13	14
Increasing Burn Patients		13	13	14	15	17
Totals		**45**	**48**	**52**	**56**	**61**

Step 4: Break out the patient population between adult and pediatric patients.

Admissions	Actual	Intervening Years		PY1	PY2	PY3
	2012	FY13	FY14	FY15	FY16	FY17
Pediatric Patients	1	9	11	12	13	14
Adult Patients	559	596	642	693	749	809
Total Patients	560	605	653	705	762	823

Steps 5 and 6: Distribute pediatric and adult cases across rehabilitation admission types, are discussed in detail on pages 66-67, and shown below. **Step 7**: **Provide projected days of care and ALOS**, is discussed on pages 68-70.

UNC Inpatient Rehabilitation Pediatric Patient Projections

Rehab Admission Type	PY1 FY15	PY2 FY16	PY3 FY17	Estimated ALOS
Amputation				
Arthritis				
Burn				
Cardiac				
Fracture				
Guillain Barre				
Joint Replacement				
Major Multiple Trauma w Brain or Spinal Cord Injury				
Major Multiple Trauma w/out Brain or Spinal Cord Injury				
Miscellaneous	1	1	1	15.9
Neurological	1	2	2	16.3
Non-Traumatic Brain Injury	2	2	2	19.3
Non-Traumatic Spinal Cord Injury				
Other Orthopedic				
Pulmonary				
Stroke				
Traumatic Brain Injury	4	5	5	15.5
Traumatic Spinal Cord Injury	1	2	3	29.8
Totals	**12**	**13**	**14**	

UNC Inpatient Rehabilitation Adult Patient Projections

Rehab Admission Type	PY1 FY15	PY2 FY16	PY3 FY17	Estimated ALOS
Amputation	39	41	44	12.77
Arthritis	0	0	0	0
Burn	14	15	17	14.05
Cardiac	4	4	4	10.67
Fracture	54	58	63	12.95
Guillain Barre	5	5	5	23.54
Joint Replacement	36	40	43	10.07
Major Multiple Trauma w Brain or Spinal Cord Injury	15	16	17	17.75
Major Multiple Trauma w/out Brain or Spinal Cord Injury	38	40	43	11.77
Miscellaneous	86	91	98	15.41
Neurological	40	43	46	15.85
Non-Traumatic Brain Injury	29	33	36	18.71
Non-Traumatic Spinal Cord Injury	76	82	88	22.08
Other Orthopedic	15	16	17	11.25
Pulmonary	0	0	0	0
Stroke	174	190	205	16.44
Traumatic Brain Injury	42	45	49	15.00
Traumatic Spinal Cord Injury	28	31	33	28.95
Totals	**693**	**749**	**809**	**16.31**

Step 8: Calculate quarterly utilization, as shown below, from page 71.

	PY1 FY15					PY2 FY16				
	Q1	**Q2**	**Q3**	**Q4**	**Total PY1**	**Q1**	**Q2**	**Q3**	**Q4**	**Total PY2**
Pt. Discharges	173	176	176	180	**705**	187	190	190	194	**762**
Pt. Days	2,819	2,877	2,877	2,934	**11,507**	3,045	3,107	3,107	3,169	**12,428**
Beds	42	42	42	42	**42**	42	42	42	42	**42**
Bed Days	3,864	3,864	3,780	3,822	**15,330**	3,864	3,864	3,822	3,822	**15,372**
ALOS	16.3	16.3	16.3	16.3	**16.3**	16.3	16.3	16.3	16.3	**16.3**
Occupancy	72.96%	74.45%	76.11%	76.78%	**75.07%**	78.80%	80.41%	81.29%	82.92%	**80.85%**

The applicant's projected rehabilitation bed utilization is reasonable given its historical utilization, additional acute care beds, fewer transfers and the projected population aging and growth in the service area. In addition, the assumptions and methodology are reasonable and support UNC's projected utilization.

In summary, UNC adequately identified the population to be served and demonstrated the need the population has for the proposed 12 additional inpatient rehabilitation beds. Therefore the application is conforming with this criterion.

WakeMed proposes to develop 12 additional inpatient rehabilitation beds in newly constructed space at the WakeMed Raleigh Campus for a total of 110 beds, including 14 beds that have been approved but are not operational. The 12 new beds will be private beds and all semi-private beds (58) will be converted to private beds, with 29 beds moving to the new space. The new addition also includes space for adult day treatment/outpatient therapy, an expanded pediatric treatment area and transitional living space on each floor. The proposed project calls for renovating approximately 5,000 square feet in the existing Rehab Hospital.

Population to be Served

In Section IV.1(d), pages 99-100, the applicant defines its service area and geographic market area, as follows:

> *"For this CON application, the term 'service area' refers to Wake County (primary), and Franklin, Harnett, Johnston, Nash, Sampson, Wayne and Wilson Counties (secondary). This service area mirrors the traditional service area of WakeMed Raleigh Campus, which serves as a tertiary referral center for these counties. Approximately 88 percent of WakeMed Rehab Hospital's 2011 cases originated from this 8-county area.*
>
> *The term 'geographic market area" refers to counties in HSA IV (Chatham, Durham, Franklin, Granville, Johnston, Lee, Orange, Person, Vance, Wake and Warren), to which the 2012 SMFP bed need is allocated, as well as to Cumberland, Duplin, Halifax, Harnett, Nash, Sampson, Wayne and Wilson Counties, which are not located in HSA IV but where a significant portion of WakeMed Rehab Hospital's patients originate. This 19-county geographic market area was used to develop the need methodology below, and comprised approximately 94 percent of WakeMed Rehab Hospital's total inpatient cases in 2011."*

The counties the applicant includes above in its "geographic market area" are located in contiguous HSAs.

In Section III.4, pages 85-86, WakeMed provides its current inpatient rehabilitation patient origin by county of residence for FY12, as shown in the table below:

Patient Origin of WakeMed Inpatient Rehabilitation Patients FY12

County	Cases	% of Total
Wake	938	56.75%
Johnston	154	9.32%
Harnett	128	7.74%
Franklin	73	4.42%
Nash	54	3.27%
Sampson	53	3.21%
Wayne	33	2.00%
Halifax	23	1.39%
Wilson	22	1.33%
Cumberland	18	1.09%
Duplin	14	0.85%
Durham	12	0.73%
Edgecombe	9	0.54%
Lee	9	0.65%
Northampton	8	0.48%
Granville	7	0.42%
Warren	7	0.42%
Orange	6	0.36%
Vance	6	0.36%
Bladen	3	0.18%
Guilford	3	0.18%
Lenoir	3	0.18%
Moore	3	0.18%
Alamance	2	0.12%
Anson	2	0.12%

County	Cases	% of Total
Carteret	2	0.12%
Caswell	2	0.12%
New Hanover	2	0.12%
Person	2	0.12%
Robeson	2	0.12%
Ashe	1	0.06%
Beaufort	1	0.06%
Bertie	1	0.06%
Caldwell	1	0.06%
Catawba	1	0.06%
Chatham	1	0.06%
Columbus	1	0.06%
Greene	1	0.06%
Henderson	1	0.06%
Hertford	1	0.06%
Hoke	1	0.06%
Martin	1	0.06%
Pitt	1	0.06%
Richmond	1	0.06%
Rowan	1	0.06%
Stokes	1	0.06%
Tyrrell	1	0.06%
Out of State	37	2.24%
Total	1,653	100.00%

In Section III.5, pages 86-87, the applicant provides projected patient origin by county of residence for the first two years of operation following completion of the project, as shown in the following table:

Projected Patient Origin of WakeMed Inpatient Rehabilitation Patients

County	**PY 1** October 1, 2016 – September 30, 2017		**PY 2** October 1, 2017 – September 30, 2018	
	Cases	**% of Total**	**Cases**	**% of Total**
Wake	1,170	57.30%	1,192	57.45%
Johnston	228	11.17%	231	11.13%
Harnett	152	7.44%	155	7.47%
Franklin	87	4.26%	88	4.24%
Nash	50	2.45%	51	2.46%
Sampson	49	2.40%	49	2.36%
Wayne	45	2.20%	45	2.17%
Wilson	30	1.47%	31	1.49%
Vance	21	1.03%	21	1.01%
Durham	19	0.93%	19	0.92%
Halifax	18	0.88%	18	0.87%
Duplin	14	0.69%	14	0.67%
Cumberland	12	0.59%	12	0.58%
Lee	11	0.54%	11	0.53%
Granville	9	0.44%	9	0.43%
Warren	6	0.29%	6	0.29%
Orange	5	0.24%	5	0.24%
Chatham	4	0.20%	4	0.19%
Person	2	0.10%	2	0.10%
All Other N.C. & Out of State	110	5.39%	112	5.40%
Total	2,042	100.00%	2,075	100.00%

Continuing on page 87, the applicant states:

> *"In projecting patient origin, WakeMed Rehab Hospital assumes that future patient origin will be similar to historic patient origin. Patient origins for Project Years 1 and 2 were based on projections developed in the need methodology in Section IV, which projected inpatient rehabilitation cases and patient days for the 19-county geographic market area. Projected patient origin in Question III.5.(a) is based on the most recent 12 months' data provided in the response to Question III.4.*
>
> *It is assumed that WakeMed Rehab Hospital will continue to attract patients from a wide geographic area, although the majority of patients will continue to originate from a few counties in the region. Counties with higher rates of projected population growth, such as Wake and Johnston, will garner larger proportions of WakeMed Rehab Hospital's total cases. Population growth and increased demand for inpatient rehabilitation*

services within the geographic market area will drive utilization, which in turn will result in a smaller proportion of total cases from other North Carolina counties and Out of State.

Because many counties may have only one patient at WakeMed Rehab Hospital in any given year, it would be impossible to develop a need methodology that always accounts for 100 percent of patient origin. Therefore, WakeMed has strived to project utilization and patient origin for the counties where the majority of the Rehab Hospital's patients consistently originate." [Emphasis in original.]

The applicant adequately identified the population it proposes to serve.

Demonstration of Need

In Section III.1, pages 56-68, the applicant discusses the need for the project which is based in part on the 2012 SMFP need determination for 20 additional inpatient rehabilitation beds in HSA IV, in addition to the following, beginning on page 56:

"Utilization at WakeMed Rehab Hospital has remained above 90 percent from FY 2002 through FY 2011, and utilization through the first nine months of FY 2012 is also above 90%. As utilization surpasses 95%, there is virtually no capacity for additional patients.
…

Even the addition of 16 beds between 2007 and 2009 had little effect on WakeMed Rehab Hospital's utilization. Monthly utilization has remained above 90 percent since July 2009, with monthly occupancy falling below 90 percent on only 6 occasions during the last 36 months. The most tangible effect of the additional bed capacity has been that WakeMed Rehab Hospital has been able to eliminate waiting lists for patient admissions. However, demand for rehab beds has not diminished. The planned opening of 14 additional rehabilitation beds at WakeMed Rehab in early 2013 is also not expected to result in long-term decline in utilization. The 'fill rate' for these new beds is expected to be quick.

If an inpatient rehabilitation facility is considered to be utilized at 'practical capacity' at 80 percent occupancy, WakeMed Rehab Hospital has been operating above practical capacity since FY 2000, making it the most highly utilized rehabilitation facility in both HSA IV and North Carolina. No other inpatient rehab facility has experienced utilization this consistent or at levels this high."

Continuing on page 69, the applicant discusses population growth and aging in HSA IV:

"Population Growth in HSA IV

Health Service Area (HSA) IV, which includes 11 counties in central North Carolina, is growing rapidly. Data from the N.C. Office of State Budget and Management (OSBM)

shows that HSA IV's population is projected to increase by 11.7 percent between 2012 and 2019, with a compound annual growth rate of 1.6 percent.

…

The table above indicates that, in addition to the rapid population growth, HSA IV is becoming more urban, with over one-half of the entire HSA's population projected to live in Wake County by 2019. According to OSBM, Wake County is projected to experience the greatest statistical increase in population in HSA IV during this period, and will also experience the highest numeric population growth, adding nearly 135,000 residents – this is more than the projected numeric population growth in the other ten counties <u>*combined*</u>*.* [Emphasis in original.]

Population Aging in HSA IV

In addition to total population growth, HSA IV will, like the rest of North Carolina, experience an aging of the population, as the 'baby boom' generation, persons born between 1946-64, continues to age and move into older adulthood. The older adult population is projected to grow more rapidly than the general population. In 2012, 207,415 residents of HSA IV were estimated to be age 65 and older (11.0 percent of total). By 2019, the age 65+ population is expected to be 287,516 (15.2 percent of total), an increase of 38.6 percent from 2012-2019.

…

Wake County, compared with other HSA IV counties, has a relatively low proportion of residents age 65 and over. However, approximately 42 percent of HSA IV's residents age 65 and over currently reside in Wake County, and this segment of the population continues to grow rapidly.

Older adults, in this case defined as persons age 65 and older, tend to be greater users of inpatient rehabilitation services than younger adults or children. According to the Truven Health Analytics' (formerly Thompson Reuters) FY 2011 inpatient database, 61.2 percent of patients in North Carolina inpatient rehabilitation facilities were age 65 and over[1]*. WakeMed Rehab Hospital's own experience mirrors this statistic. Therefore, an increase in the number and proportion of older adults, relative to the total population, will likely correspond to greater demand for inpatient rehabilitation services."*

Continuing on page 70, the applicant discusses "***Injuries, Illnesses and Conditions Warranting Inpatient Rehabilitation"***:

"The medical conditions discussed below are recognized by the Centers for Medicare and Medicaid Services (CMS) as precursors to inpatient rehabilitation. To a great extent, these conditions occur more frequently with aging.

Spinal Cord Injury

…

[1] *Includes inpatients with MS-DRGs 945 (Rehabilitation w CC/MCC) and 946 (Rehabilitation w/o CC/MCC), which superseded DRG 462.*

Traumatic Brain Injury

… The Brain Injury Association of North Carolina estimates that approximately 160,000 residents of North Carolina currently live with disabilities resulting from TBI. …

Non-traumatic Brain Injury

…

Stroke/CVA

According to the American Stroke Association, a stroke occurs in the United States every 40 seconds[20]. The North Carolina State Center for Health Statistics (SCHS) estimates that strokes are the fourth-leading cause of death in the state[21], behind cancer, heart disease and chronic lower respiratory diseases. North Carolina has the unfortunate distinction of being located in the middle of the so-called 'stroke belt' that runs through the southeastern United States, roughly from Louisiana to Virginia, which have the highest stroke mortality rates in the nation. North Carolina, along with South Carolina and Georgia, form the 'stroke buckle', states with the highest concentration of stroke deaths. According to the North Carolina Stroke Registry, North Carolina ranks seventh nationally in stroke death rate. Residents of North Carolina have high incidences of many of the risk factors for strokes, including inactivity, obesity, cigarette smoking, and diabetes.

…

Strokes are also the leading cause of disability in the United States. A number of public health initiatives … have made progress in reducing stroke mortality. However, given that incidence of stroke increases with aging, and the population of North Carolina is also aging, the number of strokes is likely to continue to increase, as will survival rates. Improved survival rates will likely result in an increase in need for inpatient rehabilitation to restore patients' physical and cognitive functioning.

Orthopaedic Injuries and Conditions

…

Neurological Illnesses and Conditions

…

Cardiac Diseases and Conditions

…

Amputations

…

Debility

…

Pediatric Inpatient Rehabilitation*"*

In Section IV.1(d), pages 101-121, WakeMed provides its need methodology, as follows:

"***<u>Inpatient Rehabilitation Bed Need Methodology</u>***

Step 1: *Identify the group of counties that reasonably reflects the geographic market area for inpatient rehabilitation patients' counties of origin as served by WakeMed Rehab Hospital.*

Step 2: *For counties identified in Step 1, select rehabilitation cases and patient days (MS-DRGs 945 and 946) for all providers, regardless of location, from the Truven Health Analytics inpatient market databases for the five-year period FY 2007 to FY 2011.*

Step 3: *For each of the counties identified in Step 1, obtain the most recent total population estimates and projections for the years 2007 through 2011 from the North Carolina Office of State Budget and Management (OSBM).*

Step 4: *Calculate inpatient rehabilitation use rates per 1000 population for each of the counties by dividing cases (Step 2) by total population (Step 3) for each of the historical years FY 2007 through FY 2011. Develop a 5-year average use rate per 1000 population for each county.*

Step 5: *For each of the counties identified in Step 1, obtain the most recent total population estimates and projections for the years 2012 through 2019 from OBSM. This represents the interim years and Project Years 1-3.*

Step 6: *For each county, apply the 5-year average inpatient rehabilitation use rates (Step 4) to the projected OSBM county populations (Step 5) and project the total rehabilitation cases by year by county for FYs 2012 through 2019. (Note: The 5-year average use rate will be held constant during the interim period and Project Years 1-3).*

Step 7: *For each county in the geographic market area, obtain WakeMed Rehab Hospital's cases and patient days for the years 2007 through 2012. Calculate the WakeMed Rehab Hospital 5-year average market share (using cases) for each county for 2007-2011.*

Step 8: *Using the 5-year average market shares from Step 7, calculate WakeMed Rehab Hospital's projected inpatient rehabilitation cases from each county in the geographic market area for FYs 2013-2019 (Step 6). (Note: The 5-year average market share for each county will be held constant during each of the Interim years and Project Years 1-3.)*

Step 9: *Calculate WakeMed Rehab Hospital's normalized weighted average length of stay for FYs 2007-2012, and apply this average LOS to the counties in the geographic market area to obtain patient days for FYs 2013-2019.*

Step 10: *Split WakeMed Rehab Hospital's total projected cases into adult and pediatric groups. Assume that the proportion of pediatric cases will increase slightly over time, as more bed capacity is made available.*

Step 11: *Distribute WakeMed Rehab Hospital's projected adult and pediatric cases and patient days for FYs 2012-2019 across service lines, using categories provided by WakeMed Rehab Hospital Administration, based on primary rehab diagnosis."*

On pages 102-121, the applicant provides further explanation, including data and formulas referenced in each step of its methodology, some of which is included below.

Step 1: **Identify patient origin/ market area** is explained in detail in Section IV.1(d), pages 102-105.

Step 2: For counties identified in Step 1, select rehabilitation cases and patient days for all providers for the five-year period FY 2007 to FY 2011, is explained in detail on pages 105-106, and shown in the tables below:

From Table IV.3
Total Rehabilitation Cases in 19-County Geographical Market Area, Regardless of Provider, 2007-2011

County	Cases				
	2007	**2008**	**2009**	**2010**	**2011**
Chatham	100	80	76	64	105
Cumberland	853	989	907	824	905
Duplin	71	63	65	74	80
Durham	259	300	329	365	328
Franklin	101	94	97	115	104
Granville	51	53	57	79	68
Halifax	205	179	186	183	187
Harnett	175	234	230	227	192
Johnston	259	253	251	216	242
Lee	104	90	97	86	59
Nash	331	328	317	318	327
Orange	171	173	173	141	140
Person	46	40	65	45	52
Sampson	126	129	151	149	135
Vance	26	23	29	184	198
Wake	1,094	1,173	1,115	1,121	1,091
Warren	20	11	18	57	62
Wayne	126	133	154	146	200
Wilson	193	184	216	204	199
Total	**4,311**	**4,529**	**4,533**	**4,598**	**4,674**

Source: Truven

From Table IV.3
Total Rehabilitation Patient Days in 19-County Geographic Market Area, Regardless of Provider, 2007-2011

County	Patient Days				
	2007	**2008**	**2009**	**2010**	**2011**
Chatham	1,285	972	931	794	1,201
Cumberland	12,010	13,929	12,923	11,756	12,429
Duplin	1,069	1,059	1,040	1,314	1,162
Durham	3,706	3,710	4,440	5,636	4,489
Franklin	1,365	1,374	1,423	1,681	1,680
Granville	566	682	773	996	869
Halifax	2,747	2,310	2,320	2,511	2,428
Harnett	2,372	3,276	3,300	3,235	2,944
Johnston	3,576	3,591	3,715	3,232	3,837
Lee	1,114	1,282	1,345	1,280	635
Nash	4,483	4,364	4,103	4,391	4,480
Orange	2,305	2,451	2,293	1,828	1,714
Person	602	490	851	682	761
Sampson	2,040	1,936	2,350	2,412	2,094
Vance	338	374	368	2,070	2,326
Wake	15,282	17,110	16,897	18,763	18,925
Warren	312	204	255	748	759
Wayne	2,106	2,254	2,579	2,251	3,281
Wilson	2,764	2,433	3,238	2,928	2,872
Total	**60,042**	**63,801**	**65,144**	**68,767**	**68,886**

Source: Truven

Step 3: **Obtain population estimates for the years 2007 – 2011**, from pages 106-107, is shown below:

Table IV.4
Geographic Market Area Total Population By County, 2007-2011

County	***2007***	***2008***	***2009***	***2010***	***2011***
Chatham	*59,234*	*61,198*	*62,408*	*63,806*	*64,553*
Cumberland	*307,793*	*311,113*	*319,040*	*327,348*	*327,643*
Duplin	*55,892*	*56,880*	*57,788*	*58,728*	*59,476*
Durham	*251,952*	*258,336*	*263,601*	*268,412*	*272,314*
Franklin	*56,762*	*58,463*	*59,502*	*60,836*	*61,651*
Granville	*57,573*	*58,511*	*59,529*	*60,513*	*60,863*
Halifax	*55,206*	*55,116*	*54,885*	*54,565*	*64,397*
Harnett	*105,310*	*108,490*	*112,003*	*115,792*	*118,615*
Johnston	*154,635*	*160,062*	*165,111*	*169,669*	*172,570*
Lee	*55,334*	*56,505*	*57,297*	*57,882*	*58,304*
Nash	*92,282*	*93,432*	*94,745*	*95,878*	*96,122*
Orange	*127,278*	*129,584*	*132,215*	*134,201*	*135,776*
Person	*38,136*	*38,226*	*39,097*	*39,448*	*39,700*
Sampson	*62,525*	*63,191*	*63,317*	*63,511*	*63,746*
Vance	*44,802*	*45,091*	*45,267*	*45,375*	*45,558*
Wake	*823,616*	*856,927*	*882,344*	*906,788*	*925,938*
Warren	*20,651*	*20,762*	*20,801*	*20,955*	*20,883*
Wayne	*118,778*	*120,000*	*121,852*	*122,815*	*123,710*
Wilson	*78,325*	*79,626*	*80,677*	*81,373*	*81,380*
Total	*2,566,084*	*2,631,513*	*2,691,479*	*2,747,895*	*2,783,199*

Source: NCOSBM

Step 4: Calculate county use rates, is explained in detail on pages 107-108, and shown in the table below:

[Chatham County Use Rate 2007 = (2007 rehabilitation cases / 2007 population) x 1,000=

(100 / 59,234) x 1,000=
.0016882 x 1,000 = 1.6882]

Table IV.5
Inpatient Rehab Use Rates Per 1000 Population by County, 2007-2011 and Five-Year Average Use Rates

	Annual Use Rates/1000					*5-Year Average Use Rate / 1000*
County	***2007***	***2008***	***2009***	***2010***	***2011***	
Chatham	*1.6882*	*1.3072*	*1.2178*	*1.0030*	*1.6266*	*1.3686*
Cumberland	*2.7713*	*3.1789*	*2.8429*	*2.5172*	*2.7622*	*2.8145*
Duplin	*1.2703*	*1.1076*	*1.1248*	*1.2600*	*1.3451*	*1.2216*
Durham	*1.0280*	*1.1613*	*1.2481*	*1.3598*	*1.2045*	*1.2003*
Franklin	*1.7794*	*1.6079*	*1.6302*	*1.8903*	*1.6869*	*1.7189*
Granville	*0.8858*	*0.9058*	*0.9575*	*1.3055*	*1.1173*	*1.0344*
Halifax	*3.7134*	*3.2477*	*3.3889*	*3.3538*	*3.4377*	*3.4283*
Harnett	*1.6618*	*2.1569*	*2.0535*	*1.9604*	*1.6187*	*1.8903*
Johnston	*1.6749*	*1.5806*	*1.5202*	*1.2731*	*1.4023*	*1.4902*
Lee	*1.8795*	*1.5928*	*1.6929*	*1.4858*	*1.0119*	*1.5326*
Nash	*3.5868*	*3.5106*	*3.3458*	*3.3167*	*3.4019*	*3.4324*
Orange	*1.3435*	*1.3350*	*1.3085*	*1.0507*	*1.0311*	*1.2138*
Person	*1.2062*	*1.0464*	*1.6625*	*1.1407*	*1.3098*	*1.2731*
Sampson	*2.0152*	*2.0414*	*2.3848*	*2.3461*	*2.1178*	*2.1811*
Vance	*0.5803*	*0.5101*	*0.6406*	*4.0551*	*4.3461*	*2.0264*
Wake	*1.3283*	*1.3688*	*1.2637*	*1.2362*	*1.1783*	*1.2751*
Warren	*0.9685*	*0.5298*	*0.8653*	*2.7201*	*2.9689*	*1.6105*
Wayne	*1.0608*	*1.1083*	*1.2638*	*1.1888*	*1.6167*	*1.2477*
Wilson	*2.4641*	*2.3108*	*2.6773*	*2.5070*	*2.4453*	*2.4809*

Step 5: **Obtain population estimates for 2012-2019** (the interim years and Project Years 1-3), is shown on pages 108-109 and below. CAGR for the seven year period is 1.32%.

Table IV.6
Population Projections for Counties in the Geographic Market Area, 2012-2019

County	***2012***	***2013***	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***
Chatham	*65,814*	*67,072*	*68,334*	*69,593*	*70,854*	*72,112*	*73,372*	*74,633*
Cumberland	*330,958*	*333,106*	*334,892*	*336,378*	*337,612*	*338,641*	*339,494*	*340,206*
Duplin	*60,329*	*61,117*	*61,943*	*62,747*	*63,564*	*64,372*	*65,185*	*65,997*
Durham	*275,946*	*279,579*	*283,209*	*286,841*	*290,473*	*294,105*	*297,739*	*301,368*
Franklin	*63,214*	*64,233*	*65,640*	*66,508*	*67,943*	*68,954*	*70,373*	*71,318*
Granville	*61,417*	*61,948*	*62,469*	*62,987*	*63,508*	*64,028*	*64,546*	*65,067*
Halifax	*54,223*	*54,045*	*53,867*	*53,691*	*53,515*	*53,336*	*53,160*	*52,984*
Harnett	*121,493*	*124,369*	*127,246*	*130,123*	*132,999*	*135,872*	*138,752*	*141,627*
Johnston	*175,467*	*178,361*	*181,263*	*184,158*	*187,056*	*189,953*	*192,848*	*195,745*
Lee	*58,712*	*59,119*	*59,527*	*59,933*	*60,340*	*60,748*	*61,153*	*61,561*
Nash	*96,585*	*96,921*	*97,314*	*97,680*	*98,060*	*98,432*	*98,807*	*99,182*
Orange	*137,760*	*139,741*	*141,723*	*143,709*	*145,692*	*147,675*	*149,658*	*151,639*
Person	*40,247*	*40,746*	*41,225*	*41,698*	*42,169*	*42,640*	*43,112*	*43,588*
Sampson	*63,977*	*64,211*	*64,441*	*64,674*	*64,905*	*65,137*	*65,367*	*65,598*
Vance	*45,708*	*45,860*	*46,010*	*46,162*	*46,314*	*46,467*	*46,617*	*46,770*
Wake	*945,209*	*964,481*	*983,754*	*1,003,024*	*1,022,298*	*1,041,571*	*1,060,841*	*1,080,113*
Warren	*20,962*	*20,941*	*20,916*	*20,894*	*20,873*	*20,849*	*20,827*	*20,806*
Wayne	*124,486*	*125,306*	*126,123*	*126,941*	*127,759*	*128,577*	*129,397*	*130,215*
Wilson	*82,130*	*82,878*	*83,630*	*84,376*	*85,124*	*85,875*	*86,624*	*87,371*
Total	*2,824,647*	*2,864,034*	*2,903,526*	*2,942,117*	*2,981,058*	*3,019,344*	*3,057,872*	*3,095,788*

Step 6: **Project total rehabilitation case volume by county**, is discussed and provided on pages 109-110 and shown below:

[Total Projected Chatham County Rehabilitation Cases for 2012 =
5-Year Average Use Rate x 2012 Projected Population) / 1,000=

(1.3686 x 65,814) / 1,000 = 90,073.04 / 1,000 = 90.07]

Table IV.7
Geographic Market Area Projected Rehab Cases by County, 2012-2019
Using 5-Year Average Use Rates

County	***2012***	***2013***	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***
Chatham	*90*	*92*	*94*	*95*	*97*	*99*	*100*	*102*
Cumberland	*931*	*938*	*943*	*947*	*950*	*953*	*956*	*958*
Duplin	*74*	*75*	*76*	*77*	*78*	*79*	*80*	*81*
Durham	*331*	*336*	*340*	*344*	*349*	*353*	*357*	*362*
Franklin	*109*	*110*	*113*	*114*	*117*	*119*	*121*	*123*
Granville	*64*	*64*	*65*	*65*	*66*	*66*	*67*	*67*
Halifax	*186*	*185*	*185*	*184*	*183*	*183*	*182*	*182*
Harnett	*230*	*235*	*241*	*246*	*251*	*257*	*262*	*268*
Johnston	*261*	*266*	*270*	*274*	*279*	*283*	*287*	*292*
Lee	*90*	*91*	*91*	*92*	*92*	*93*	*94*	*94*
Nash	*332*	*333*	*334*	*335*	*337*	*338*	*339*	*340*
Orange	*167*	*170*	*172*	*174*	*177*	*179*	*182*	*184*
Person	*51*	*52*	*52*	*53*	*54*	*54*	*55*	*55*
Sampson	*140*	*140*	*141*	*141*	*142*	*142*	*143*	*143*
Vance	*93*	*93*	*93*	*94*	*94*	*94*	*94*	*95*
Wake	*1,205*	*1,230*	*1,254*	*1,279*	*1,304*	*1,328*	*1,353*	*1,377*
Warren	*34*	*34*	*34*	*34*	*34*	*34*	*34*	*34*
Wayne	*155*	*156*	*157*	*158*	*159*	*160*	*161*	*162*
Wilson	*204*	*206*	*207*	*209*	*211*	*213*	*215*	*217*
Total	*4,747*	*4,806*	*4,862*	*4,915*	*4,974*	*5,027*	*5,082*	*5,136*

Step 7: Calculate WakeMed's 5-year average market share by county, based on the years 2007 – 2012, is discussed on pages 110-112, and shown below.

[WakeMed's Chatham County 2007 rehabilitation market share =

2007 WakeMed rehabilitation cases from Chatham County (Table IV.8) / 2007 total rehabilitation cases from Chatham County (Table IV.3) = 5 / 100 = .05]

Table IV.8
WakeMed Rehab Hospital Market Area <u>Cases</u> Originating in the Geographic Market Area by County, 2007-2012

County	***2007***	***2008***	***2009***	***2010***	***2011***	***2012 (9 mos. ann.)***
Chatham	*5*	*2*	*5*	*3*	*1*	*1*
Cumberland	*8*	*14*	*16*	*5*	*13*	*20*
Duplin	*18*	*9*	*12*	*12*	*13*	*15*
Durham	*11*	*18*	*14*	*21*	*20*	*8*
Franklin	*71*	*66*	*76*	*80*	*80*	*68*
Granville	*8*	*9*	*7*	*8*	*7*	*7*
Halifax	*20*	*21*	*17*	*21*	*14*	*25*
Harnett	*95*	*134*	*140*	*143*	*116*	*136*
Johnston	*219*	*212*	*201*	*170*	*184*	*151*
Lee	*11*	*13*	*9*	*7*	*10*	*9*
Nash	*48*	*52*	*53*	*49*	*40*	*52*
Orange	*7*	*3*	*6*	*4*	*1*	*7*
Person	*1*	*2*	*3*	*1*	*0*	*3*
Sampson	*36*	*47*	*55*	*57*	*43*	*51*
Vance	*6*	*9*	*9*	*18*	*12*	*5*
Wake	*970*	*1,057*	*991*	*978*	*935*	*915*
Warren	*1*	*4*	*7*	*5*	*4*	*7*
Wayne	*45*	*49*	*36*	*38*	*36*	*33*
Wilson	*26*	*30*	*32*	*29*	*25*	*23*
Total from Geog. Market Area	*1,606*	*1,751*	*1,689*	*1,649*	*1,554*	*1,536*

Table IV.9
WakeMed Rehab Hospital <u>Patient Days</u> Originating in the Geographic Market Area, by County, 2007-2012

County	*2007*	*2008*	*2009*	*2010*	*2011*	*2012 (9 mos. ann.)*
Chatham	*51*	*21*	*37*	*55*	*50*	*5*
Cumberland	*99*	*293*	*295*	*56*	*247*	*383*
Duplin	*277*	*96*	*191*	*151*	*200*	*266*
Durham	*232*	*440*	*332*	*502*	*371*	*175*
Franklin	*939*	*995*	*1,126*	*1,224*	*1,411*	*1,173*
Granville	*116*	*108*	*111*	*117*	*84*	*134*
Halifax	*319*	*294*	*202*	*361*	*194*	*506*
Harnett	*1,210*	*1,822*	*1,911*	*2,084*	*1,923*	*1,938*
Johnston	*2,892*	*2,988*	*2,962*	*2,544*	*3,071*	*2,497*
Lee	*137*	*182*	*159*	*121*	*139*	*146*
Nash	*751*	*690*	*905*	*872*	*658*	*999*
Orange	*148*	*33*	*187*	*97*	*14*	*127*
Person	*33*	*73*	*55*	*28*	*0*	*45*
Sampson	*448*	*733*	*838*	*900*	*689*	*988*
Vance	*74*	*135*	*93*	*276*	*204*	*100*
Wake	*13,036*	*14,991*	*15,172*	*15,890*	*15,750*	*15,254*
Warren	*21*	*95*	*98*	*97*	*66*	*104*
Wayne	*651*	*652*	*535*	*630*	*516*	*669*
Wilson	*383*	*442*	*511*	*380*	*383*	*341*
Total from Geog. Market Area	*21,817*	*25,083*	*25,720*	*26,385*	*25,980*	*25,850*

Table IV.10
WakeMed Rehab Hospital Proportion of Inpatient Rehabilitation Cases by Geographic Market Area County, 2007-2011

County	*2007*	*2008*	*2009*	*2010*	*2011*	*5-Year Average*

						Market Shares
Chatham	*5.00%*	*2.50%*	*6.58%*	*4.69%*	*0.95%*	*3.94%*
Cumberland	*0.94%*	*1.42%*	*1.76%*	*0.61%*	*1.44%*	*1.23%*
Duplin	*23.35%*	*14.29%*	*18.46%*	*16.22%*	*16.25%*	*18.11%*
Durham	*4.25%*	*6.00%*	*4.26%*	*5.75%*	*6.10%*	*5.27%*
Franklin	*70.30%*	*70.21%*	*78.35%*	*69.57%*	*76.92%*	*73.07%*
Granville	*15.69%*	*16.98%*	*12.28%*	*10.13%*	*10.29%*	*13.07%*
Halifax	*9.76%*	*11.73%*	*9.14%*	*11.48%*	*7.49%*	*9.92%*
Harnett	*54.29%*	*57.26%*	*60.87%*	*63.00%*	*60.42%*	*59.17%*
Johnston	*84.56%*	*83.79%*	*80.08%*	*78.70%*	*76.03%*	*80.63%*
Lee	*10.58%*	*14.44%*	*9.28%*	*8.14%*	*16.95%*	*11.88%*
Nash	*14.50%*	*15.85%*	*16.72%*	*15.41%*	*12.23%*	*14.94%*
Orange	*4.09%*	*1.73%*	*3.47%*	*2.84%*	*0.71%*	*2.57%*
Person	*2.17%*	*5.00%*	*4.62%*	*2.22%*	*0.00%*	*2.80%*
Sampson	*28.57%*	*36.43%*	*36.42%*	*38.26%*	*31.85%*	*34.31%*
Vance	*23.08%*	*39.13%*	*31.03%*	*9.78%*	*6.06%*	*21.82%*
Wake	*88.67%*	*90.11*	*88.88%*	*87.24%*	*85.70%*	*88.12%*
Warren	*5.00%*	*36.36%*	*38.89%*	*8.77%*	*6.45%*	*19.09%*
Wayne	*35.71%*	*36.84%*	*23.38%*	*26.03%*	*18.00%*	*27.99%*
Wilson	*13.47%*	*16.30%*	*14.81%*	*14.22%*	*12.56%*	*14.27%*

Step 8: **Calculate WakeMed's market share of projected rehabilitation cases**, is discussed on page 113, and shown below:

[WakeMed's projected 2013 rehabilitation cases from Chatham County =

WakeMed's 5-year average market share of Chatham County's rehabilitation cases (Table IV.10) x Total Projected Rehabilitation Cases for Chatham County 2013 (Table IV.7) = 3.94% x 92 = 3.6248]

Table IV.11
WakeMed Rehab Hospital Projected Cases from Geographic Market Area, 2012-2019

County	***2012 (9 mos. ann.)***	***2013***	***2014***	***2015***	***2016***	***2017 (Yr. 1)***	***2018 (Yr. 2)***	***2019 Yr. 3)***
Chatham	*1*	*4*	*4*	*4*	*4*	*4*	*4*	*4*
Cumberland	*20*	*12*	*12*	*12*	*12*	*12*	*12*	*12*
Duplin	*15*	*14*	*14*	*14*	*14*	*14*	*14*	*14*
Durham	*8*	*18*	*18*	*18*	*18*	*19*	*19*	*19*
Franklin	*68*	*80*	*83*	*83*	*85*	*87*	*88*	*90*
Granville	*7*	*8*	*8*	*8*	*9*	*9*	*9*	*9*
Halifax	*25*	*18*	*18*	*18*	*18*	*18*	*18*	*18*
Harnett	*136*	*139*	*143*	*146*	*149*	*152*	*155*	*159*
Johnston	*151*	*214*	*218*	*221*	*225*	*228*	*231*	*235*
Lee	*9*	*11*	*11*	*11*	*11*	*11*	*11*	*11*
Nash	*52*	*50*	*50*	*50*	*50*	*50*	*51*	*51*
Orange	*7*	*4*	*4*	*4*	*5*	*5*	*5*	*5*
Person	*3*	*1*	*1*	*1*	*2*	*2*	*2*	*2*
Sampson	*51*	*48*	*48*	*48*	*49*	*49*	*49*	*49*
Vance	*5*	*20*	*20*	*21*	*21*	*21*	*21*	*21*
Wake	*915*	*1,084*	*1,105*	*1,127*	*1,149*	*1,170*	*1,192*	*1,213*
Warren	*7*	*6*	*6*	*6*	*6*	*6*	*6*	*6*
Wayne	*33*	*44*	*44*	*44*	*45*	*45*	*45*	*45*
Wilson	*23*	*29*	*30*	*30*	*30*	*30*	*30*	*30*
Cases from Geog. Mkt. Area	*1,536*	*1,804*	*1,837*	*1,866*	*1,902*	*1,932*	*1,963*	*1,995*
Cases from Out of Area	*88*	*103*	*105*	*106*	*108*	*110*	*112*	*114*
Total Cases	*1,624*	*1,907*	*1,942*	*1,972*	*2,010*	*2,042*	*2,075*	*2,109*

Step 9: **Project number of patient days for 2013-2019 using a normalized weighted ALOS for FYs 2007-2012,** is discussed in detail on pages 114-116, and shown below:

[Projected Chatham County 2012 patient days = Weighted 5-year Average ALOS x Chatham County Projected Cases (Table IV.11)

Chatham County Weighted 5-year Average ALOS =
(((Chatham County 2007 patient days / 2007 patient cases) x 0.048) +
((Chatham County 2008 patient days / 2008 patient cases) x 0.095) +
((Chatham County 2009 patient days / 2009 patient cases) x 0.143) +
((Chatham County 2010 patient days / 2010 patient cases) x 0.190) +
((Chatham County 2011 patient days / 2011 patient cases) x 0.238) +
((Chatham County 2012 patient days/ 2012 patient cases) x 0.286))

((51/5) x 0.048) + ((21/2) x 0.095) + ((37/5) x 0.143) + ((55/3) x 0.190) + ((50/1) x 0.238) + ((5/1) x 0.286)) =
(10.20 x 0.048) + (10.50 x 0.095) + (7.40 x 0.143) + (18.33 x 0.190) + (50 x 0.238) + (5 x 0.286) =
0.4896 + 0.9975 + 1.0582 + 3.4833 + 11.9 + 1.43 = 19.36]

Table IV.13 WakeMed Rehab Hospital Annual ALOS by County and Weighted Average ALOS's Geographic Market Area for 2007-2012

Weight	***0.048***	***0.095***	***0.143***	***0.190***	***0.238***	***0.286***	***1.000***
	Annual ALOS						***Weighted 5-Year Average ALOS***
County	***2007***	***2008***	***2009***	***2010***	***2011***	***2012***	
Chatham	*10.20*	*10.50*	*7.40*	*18.33*	*50.00*	*5.00*	*19.37*
Cumberland	*12.38*	*20.93*	*18.44*	*11.20*	*19.00*	*19.15*	*17.35*
Duplin	*15.39*	*10.67*	*15.92*	*12.58*	*15.38*	*17.73*	*15.15*
Durham	*21.09*	*24.44*	*23.71*	*23.90*	*18.55*	*21.88*	*21.94*
Franklin	*13.23*	*15.08*	*14.82*	*15.30*	*17.64*	*17.25*	*16.23*
Granville	*14.50*	*12.00*	*15.86*	*14.63*	*12.00*	*19.14*	*15.21*
Halifax	*15.95*	*14.00*	*11.88*	*17.19*	*13.86*	*20.24*	*16.15*
Harnett	*12.74*	*13.60*	*13.65*	*14.57*	*16.58*	*14.25*	*14.65*
Johnston	*13.21*	*14.09*	*14.74*	*14.96*	*16.69*	*16.54*	*15.63*
Lee	*12.45*	*14.00*	*17.67*	*17.29*	*13.90*	*16.22*	*15.69*
Nash	*15.65*	*13.27*	*17.08*	*17.80*	*16.45*	*19.21*	*17.24*
Orange	*21.14*	*11.00*	*31.17*	*24.25*	*14.00*	*18.14*	*19.64*
Person	*33.00*	*36.50*	*18.33*	*28.00*	*0.00*	*15.00*	*17.29*
Sampson	*12.44*	*15.60*	*15.24*	*15.79*	*16.02*	*19.37*	*16.61*
Vance	*12.33*	*15.00*	*10.33*	*15.33*	*17.00*	*20.00*	*16.17*
Wake	*13.44*	*14.18*	*15.31*	*16.25*	*16.84*	*16.67*	*16.05*
Warren	*21.00*	*23.75*	*14.00*	*19.40*	*16.50*	*14.86*	*17.13*
Wayne	*14.47*	*13.31*	*14.86*	*16.58*	*14.33*	*20.27*	*16.44*
Wilson	*14.73*	*14.73*	*15.97*	*13.10*	*15.72*	*16.83*	*14.86*

[Chatham County Weighted 5-year Average ALOS x Chatham County Projected Cases
19.36 x 4 = 77.44]

Table IV.14
WakeMed Rehab Hospital Projected Patient Days from Geographic Market Area, 2012-2019

County	*2012 (9 mos. ann.)*	*2013*	*2014*	*2015*	*2016*	*2017 (Yr. 1)*	*2018 (Yr. 2)*	*2019 Yr. 3)*
Chatham	*5*	*77*	*77*	*77*	*77*	*77*	*77*	*77*
Cumberland	*383*	*208*	*208*	*208*	*208*	*208*	*208*	*208*
Duplin	*266*	*212*	*212*	*212*	*212*	*212*	*212*	*212*
Durham	*175*	*395*	*395*	*395*	*395*	*417*	*417*	*417*
Franklin	*1,173*	*1,298*	*1,347*	*1,347*	*1,380*	*1,412*	*1,428*	*1,461*
Granville	*134*	*122*	*122*	*122*	*137*	*137*	*137*	*137*
Halifax	*506*	*291*	*291*	*291*	*291*	*291*	*291*	*291*
Harnett	*1,938*	*2,036*	*2,095*	*2,139*	*2,183*	*2,227*	*2,271*	*2,329*
Johnston	*2,497*	*3,345*	*3,407*	*3,454*	*3,517*	*3,564*	*3,611*	*3,673*
Lee	*146*	*173*	*173*	*173*	*173*	*173*	*173*	*173*
Nash	*999*	*862*	*862*	*862*	*862*	*862*	*879*	*879*
Orange	*127*	*79*	*79*	*79*	*98*	*98*	*98*	*98*
Person	*45*	*17*	*17*	*17*	*35*	*35*	*35*	*35*
Sampson	*988*	*797*	*797*	*797*	*814*	*814*	*814*	*814*
Vance	*100*	*323*	*323*	*340*	*340*	*340*	*340*	*340*
Wake	*15,254*	*17,398*	*17,735*	*18,088*	*18,441*	*18,779*	*19,132*	*19,469*
Warren	*104*	*103*	*103*	*103*	*103*	*103*	*103*	*103*
Wayne	*669*	*723*	*723*	*723*	*740*	*740*	*740*	*740*
Wilson	*341*	*431*	*446*	*446*	*446*	*446*	*461*	*461*
Days from Geog. Mkt. Area	*25,850*	*28,890*	*29,412*	*29,873*	*30,452*	*30,935*	*31,427*	*31,932*
Days from Out of Area	*1,642*	*1,783*	*1,818*	*1,835*	*1,869*	*1,904*	*1,939*	*1,973*
Total Patient Days	*27,492*	*30,673*	*31,230*	*31,708*	*32,321*	*32,839*	*33,366*	*33,905*

Steps 10 and 11: Split total projected cases into pediatric and adult cases and distribute those cases across service lines, is discussed in detail on pages 116-121, and shown below:

From Tables IV.18 & 19

WakeMed Rehab Hospital Projected Proportional Split of Adult Cases and Patient Days by Primary Rehab Diagnosis Category										
Primary Rehab Diagnosis Category	**Adult Cases**					**Adult Patient Days**				
	2012 (9 mos ann.)	**2016**	**2017 PY1**	**2018 PY2**	**2019 PY3**	**2012 (9 mos ann.)**	**2016**	**2017 PY1**	**2018 PY2**	**2019 PY3**
Spinal Cord Injury	128	158	160	163	165	2,503	2,851	2,890	2,931	2,972
Traumatic BI*	97	118	120	122	124	1,799	2,091	2,120	2,146	2,182
Stroke	385	472	478	486	492	7,242	8,496	8,620	8,734	8,865
Neuro	60	74	75	76	77	1,111	1,373	1,387	1,407	1,428
Ortho	464	591	601	608	619	6,483	7,355	7,461	7,571	7,687
Cardiac	109	112	113	115	116	1,628	1,851	1,879	1,905	1,934
Non-Traumatic BI	61	75	76	77	78	1,082	1,242	1,259	1,277	1,296
Debility	126	155	157	159	162	2,264	2,739	2,778	2,816	2,860
Amputation	69	80	81	82	83	1,138	1,292	1,310	1,329	1,349
Other	112	139	140	142	145	2,005	2,385	2,413	2,450	2,488
Total	**1,611**	**1,974**	**2,001**	**2,030**	**2,061**	**27,255**	**31,675**	**32,117**	**32,566**	**33,061**

*BI – brain injury

From Tables IV.20 & 21 WakeMed Rehab Hospital Pediatric Cases and Patient Days by Primary Rehab Diagnosis Category										
Primary Rehab Diagnosis Category	**Pediatric Cases**					**Pediatric Patient Days**				
	2012 (9 mos ann.)	**2016**	**2017 PY1**	**2018 PY2**	**2019 PY3**	**2012 (9 mos ann.)**	**2016**	**2017 PY1**	**2018 PY2**	**2019 PY3**
Spinal Cord Injury	2	5	5	6	6	39	82	92	102	107
Traumatic BI*	3	6	7	7	8	54	100	111	123	130
Stroke	1	0	0	0	0	16	0	0	0	0
Neuro	0	3	4	4	5	0	58	64	71	75
Ortho	4	4	5	5	5	68	60	67	74	79
Cardiac	0	0	0	0	0	0	0	0	0	0
Non-Traumatic BI	0	6	7	8	8	0	114	129	143	150
Debility	0	0	0	0	0	0	0	0	0	0
Amputation	0	5	5	6	6	0	76	85	94	100
Other	3	7	8	9	10	60	156	174	193	203
Total	**13**	**36**	**41**	**45**	**48**	**237**	**646**	**722**	**800**	**844**

*BI – brain injury

On pages 120-121, the applicant provides a table of adult and pediatric cases and patient days combined, by primary rehabilitation diagnosis.

In Section IV.2, page 121, the applicant provides projected occupancy by quarter, during the first two years following project completion, as shown below:

Projected Occupancy at WakeMed

Table IV-F	**Patient Days**	**Utilization Rate**
Quarter 1	8,041	79.5%
Quarter 2	8,218	83.0%
Quarter 3	8,282	82.7%
Quarter 4	8,298	82.0%
Total Operating Year One FFY17	**32,839**	**81.8%**
Quarter 5	8,328	82.3%
Quarter 6	8,346	84.3%
Quarter 7	8,346	83.4%
Quarter 8	8,346	82.5%
Total Operating Year Two FFY18	**33,366**	**83.1%**

The applicant's projected rehabilitation bed utilization is reasonable given the applicant's historical utilization and the projected population growth in the applicant's service area. In addition, the assumptions and methodology are reasonable and support WakeMed's projected utilization.

In addition to 12 inpatient rehabilitation beds proposed by the applicant in response to the need determination in the 2012 SMFP, it also proposes to construct 29 beds in private rooms to replace 29 beds currently housed in semi-private rooms to:

- enhance patient privacy,
- improve patient and family satisfaction,
- offer better infection control for patients who may be immunocompromised,
- alleviate gender placement problems associated with semi-private rooms, and
- meet the industry standard in inpatient rehabilitation.

In summary, WakeMed adequately identified the population to be served and demonstrated the need the population has for the proposed 12 additional inpatient rehabilitation beds. Therefore the application is conforming with this criterion.

Duke Raleigh proposes to renovate vacated space for a 12-bed inpatient rehabilitation unit on the third floor of the existing hospital, comprised of 10 private and 2 semi-private beds. Duke Raleigh does not currently provide inpatient rehabilitation services.

Population to be Served

In Section III.4, page 91, Duke Raleigh states that it does not currently operate inpatient rehabilitation beds; however it provides FY11 patient origin for its acute care patients. Duke Raleigh also provides patient origin for its patients who were referred to an inpatient rehabilitation facility (IRF) in FY12, as shown in the table below:

Patient Origin of Duke Raleigh Acute Care Patients Referred to Inpatient Rehabilitation in FY12

County	**% of Total**	**FY12****
Wake	58.3%	77

Vance	7.1%	9
Johnston	4.7%	6
Franklin	3.9%	5
Nash	3.9%	5
Cumberland	3.1%	4
Wilson	2.4%	3
Mecklenburg VA	1.6%	2
Chowan	1.6%	2
Edgecombe	1.6%	2
All Others*	12.0%	16
Total	**100.0%**	**132**

Source: Section III.4, page 92, and Section III.1, page 62
*All others includes: Alamance, Durham, Forsyth, Gates, Granville, Guilford, Halifax, Harnett, Lee Lenoir, New Hanover, Orange, Richmond, Warren counties in NC and Broward, FL.
**July 2011- May 2012 annualized

Additionally, Duke Raleigh states it *"refers patients to skilled nursing facilities for post-acute care service*s, *some of whom were eligible for inpatient rehabilitation but were unable to secure a bed in a timely manner."* Duke Raleigh provides patient origin percentages for its patients referred to a SNF during FY12, as shown in the table below from page 93:

Patient Origin of Duke Raleigh Acute Care Patients Referred to a SNF in FY12

County	% of Total	FY12
Wake	81.5%	24
Franklin	14.8%	4
Johnston	3.7%	1
Total	**100.0%**	**29**

Source: Section III.1, page 64 and Section III.4, page 93

The applicant provides the patient origin of patients from Wake, Johnston and Franklin counties that Duke University Hospital and Durham Regional Hospital transferred to inpatient rehabilitation facilities other than Durham Regional Hospital.

Patient Origin of Wake, Johnston & Franklin Counties Patients Referred to IRF in FY12

County	Duke University Hospital		Durham Regional Hospital	
	# Patients	% of Total	# Patients	% of Total
Wake	28	81.0%	3	84.0%
Johnston	5	14.0%	0	11.0%
Franklin	2	5.0%	1	5.0%
Total	**35**	**100.0%**	**4**	**100.0%**

Source: Section III.1, page 63 and Section III.4, page 93

In Section III.5(a), page 95, the applicant provides projected patient origin by county of residence for the first two full years of operation following completion of the proposed project:

Projected Patient Origin for Proposed Inpatient Rehabilitation Services

County	PY1 FY15	PY2 FY16
	% of Total	% of Total
Wake	65.8%	65.5%
Johnston	6.8%	7.5%
Franklin	5.9%	5.9%
Vance	4.5%	4.2%
Durham	0.4%	0.3%
Orange	0.4%	0.3%
Granville	0.4%	0.4%
Lee	0.4%	0.4%
Warren	0.4%	0.4%
All Others*	14.9%	15.1%
Total	**100.0%**	**100.0%**

*'All Others' includes patients from out of HSA IV.

In Section III.5(b), page 96, the applicant states:

> *"the projected patient origin is based on the methodology for projecting inpatient rehabilitation patients described in Section III.1. DRAH projects patients for the proposed unit based on the historical number of DUHS patients from* [Wake, Franklin and Johnston counties*] *currently referred to other facilities for inpatient rehabilitation services and DRAH patients currently referred to skilled nursing facilities due to the inability to secure an inpatient rehab bed in a timely manner.*
>
> *DRAH's proposed unit is also in a great position to serve the growing needs of Wake, Franklin and Johnston County residents who are accustomed to coming to the regional center for high-quality specialty care.*
>
> *As described in Section III.1, DRAH also projects that approximately 15 percent of projected inpatient rehabilitation patients will originate from outside the primary and secondary service area. This is conservative compared to in-migration data for DRH and WakeMed, which both experience approximately 25 percent in-migration."*

*See page 63 of the application.

In projecting the percentage of patients who will originate outside of HSA IV, the applicant uses its own acute care experience and the experience of the three larger programs in HSA IV.

On page 63, the applicant provides a table that reflects the number of current patients from DUHS facilities that it states would be appropriate for Duke Raleigh's IRF:

Duke Raleigh Hospital
Potential Inpatient Rehabilitation Patients, FY 2012

Facility	*FY 2012*

	Patients
Duke Raleigh Hospital	*132*
Duke University Hospital	*35**
Durham Regional Hospital	*4**
Total Patients from DUHS Facilities	***171***

**Patients from Wake, Franklin & Johnston counties only*
Source: DRAH Canopy EMR, DUHS data

The applicant adequately identifies the population it proposes to serve.

Demonstration of Need

In Section III.1, pages 40-61, the applicant discusses the need for the project which is based in part on the 2012 SMFP need determination for 20 additional inpatient rehabilitation beds in HSA IV, in addition to the following:

> *"The inpatient rehabilitation unit will supplement and support the services provided and projected at DRAH, including the expansion of Neurosciences, outpatient rehabilitation, Wellness, and Orthopaedics services. Additionally, the unit will enhance DRAH's ability to serve patients throughout their entire continuum of care.*
> …
>
> *Population & Aging*
>
> *Wake County is the primary service area for the proposed project. Wake County is currently the second-largest county in North Carolina. According to the* [North] *Carolina Office of State Budget & Management (NCOSBM), Wake County will host more than one million residents by 2015.*
> …
> *Wake County's overall population is projected to increase a total of 77,089 residents during the next four years, or a compound annual growth rate of 2.0 percent. Incidentally, Wake County has the largest absolute and the fastest projected population growth of the 11 counties in HSA IV. Please refer to the table on the following page."*

Health Service Area IV Projected Population						
County	**2012**	**2013**	**2014**	**2015**	**2016**	**2012-2016 CAGR**
Wake	945,209	964,481	983,754	1,003,024	1,022,298	2.0%

Durham	275,946	279,579	283,209	286,841	290,473	1.3%
Johnston	175,467	178,361	181,263	184,158	187,056	1.6%
Orange	137,760	139,741	141,723	143,709	145,692	1.4%
Chatham	65,814	67,072	68,334	69,593	70,854	1.9%
Franklin	63,214	64,233	65,640	66,508	67,943	1.8%
Granville	61,417	61,948	62,469	62,987	63,508	0.8%
Lee	58,712	59,119	59,527	59,933	60,340	0.7%
Vance	45,708	45,860	46,010	46,162	46,314	0.3%
Person	40,247	40,746	41,225	41,698	42,169	1.2%
Warren	20,962	20,941	20,916	20,894	20,873	-0.1%
HSA IV	**1,890,466**	**1,922,081**	**1,954,070**	**1,985,507**	**2,017,502**	**1.6%**

Source: NCOSBM

Continuing on page 43, the applicant states:

> *"… Wake County also has the fastest growing population age 65 and older. …Wake County will still account for over 43 percent of HSA IV's 65+ population. …*
>
> *In summary, the significant absolute size and rapid population growth of Wake County will ensure that the demand for inpatient rehabilitation services will continue to increase. This demographic data coupled with rehabilitation utilization and in-migration patterns (discussed later in this section) make Wake County the most effective alternative for additional inpatient rehabilitation beds in HSA IV. Furthermore, this demographic data supports the continued growth of and demand for inpatient rehabilitation services in Wake County."*

Beginning on page 45, the applicant discusses inpatient rehabilitation utilization in Wake County, including the following points:

- During FFY11, Wake County's utilization exceeded 92%,
- Wake County draws patients from a wide geographic region,
- The current and approved inventory is inadequate to continue serving the growing demand,
- The need for locating the beds in Wake County is further substantiated by comparing utilization rates for HSA IV inpatient rehabilitation providers.

The following table is taken from page 45.

HSA IV Inpatient Rehabilitation Providers' Utilization Rates

	County	**Beds**	**FFY11 Days of Care**	**% Occupancy**
WakeMed	Wake	84	28,415	92.7%
UNC Hospitals	Orange	30	9,100	83.1%
Durham Regional Hospital	Durham	30	8,467	77.3%

Maria Parham Hospital	Vance	11	2,657	66.2%
HSA IV Total		**155**	**48,639**	**86.0%**

Source: Proposed 2013 SMFP

The applicant states that the number of semi-private rooms at Durham Regional Hospital limits its capacity and affects its ability to maintain 80% occupancy, but days of care at DRH had a 9.9% compound annual growth rate during FFY08 – FFY11, as shown below.

	FFY08	FFY09	FFY10	FFY11	08-11 CAGR
IP Rehab Days of Care	6,382	7,119	8,662	8,467	9.9%

Beginning on page 47, the applicant states:

> *"In addition to being the highest utilizer of inpatient rehabilitation services in the health service area, Wake County also has a disproportionate amount of population per beds compared to Durham, Orange and Vance counties. Please refer to the table on the following page.*

Health Service Area IV
Inpatient Rehabilitation Beds Per Population

	County	***# IP Rehab Beds***	***2012 Population***	***Pop/Bed***
WakeMed	*Wake*	*98**	*945,209*	*9,645*
Durham Regional Hospital	*Durham*	*30*	*275,946*	*9,198*
UNC Hospitals	*Orange*	*30*	*137,760*	*4,592*
Maria Parham Hospital	*Vance*	*11*	*45,708*	*4,155*
HSA IV Total		***169***	***1,404,623***	***8,311***

**Includes 14 IP rehab beds that are approved, but not operational.*
Source: Proposed 2013 SMFP, NCOSBM

> *Wake County has the highest population per inpatient rehabilitation bed of the four counties in HSA IV that offer inpatient rehabilitation services. It is important to consider this data when evaluating the geographic need for inpatient rehabilitation beds, as the population per bed is a key indicator of access to services. A greater number of population per bed is indicative of disparate access to services. In addition, to Wake County having the highest population* [per] *bed in HSA IV, Wake County's operational rehabilitation beds are also operating above 90 percent occupancy (based on FFY2011 utilization)."*

The applicant next discusses in-migration for each of the inpatient rehabilitation providers in HSA IV (the percentage of each facility's patients who originate from counties outside of HSA IV), as shown in the following table, from pages 48-51.

In-migration of Inpatient Rehabilitation Patients in HSA IV

	2006	2007	2008	2009	2010	2011
WakeMed	19.5%	23.4%	24.4%	24.8%	25.5%	24.5%

Durham Regional Hospital	19.5%	20.6%	23.0%	19.0%	18.9%	24.6%
UNC Hospitals	44.7%	45.8%	49.9%	49.1%	45.8%	49.2%
Maria Parham Hospital	NA	NA	NA	NA	6.4%	6.5%

On page 51, the applicant states:

> *"In summary, Wake County has historically exhibited high utilization of inpatient rehabilitation services and is a preferred destination for residents of HSA IV and beyond. Therefore, Wake County is an effective alternative for development of 12 new inpatient rehabilitation beds. Additionally, DRAH's proposal to develop 12 new beds at its facility will improve competition in Wake County and HSA IV via establishment of a new provider that will serve a growing base of patients."*

Continuing on page 52, the applicant discusses national and local growth projections:

> *"According to projections from Sg2, inpatient rehabilitation volume is projected to grow 50.6 percent within the 11-county HSA IV between 2011 and 2020, with Wake County leading the region with 65.8 percent growth. The counties immediately surrounding Wake County are also projected to experience significant growth in inpatient rehabilitation demand (54.6 percent in Johnston and 41.3 percent in Durham). In fact, Wake, Johnston, and Franklin counties, which account for 85 percent of DRAH's projected inpatient rehab unit, are expected to experience the largest growth in demand.*
>
> *Within HSA IV, inpatient volume for patients who may be eligible and appropriate to obtain post-acute care in an inpatient rehabilitation center is projected to grow significantly in most categories between 2011 and 2020. For example, acute ischemic stroke volume is expected to increase 46.2 percent and bilateral or major multiple joint procedures are expected to increase 51.1 percent. With Wake County accounting for more than half of the service area's population, much of this inpatient growth will be generated by Wake County patients. Please refer to the following Sg2 inpatient growth projections.*

Inpatient Growth Projections, Select DRGs, HSA IV

DRG Groupings	***2011-2020 Growth***
Acute Ischemic Stroke	*46.2%*
Amputation for Circulatory System Disorders Except Upper Limb and Toe	*2.1%*
Amputation for Musculoskeletal System and Connective Tissue Disorder	*26.1%*
Amputation of Lower Limb for Endocrine, Nutrition, and Metabolic Disorders	*-54.4%*
Back & Neck Procedure Except Spinal Fusion	*21.1%*
Bilateral or Multiple Major Joint Procedures of Lower Extremity	*57.1%*

Cervical Spinal Fusion	*3.0%*
Combined Anterior/Posterior Spinal Fusion	*24.4%*
Hip & Femur Procedures Except Major Joint	*34.0%*
Intracranial Hemorrhage or Cerebral Infraction	*27.5%*
Lower Extremity & Humorous Procedure Except Hip, Foot, & Femur	*24.2%*
Major Joint and Limb Reattachment Procedure of Lower Extremity	*49.2%*
Major Joint and Limb Reattachment Procedure of Upper Extremity	*52.5%*
Spinal Fusion Except Cervical	*27.6%*
Spinal Fusion Except Cervical with Spinal Curv/Malig/Infection	*30.9%*
Upper Limb and Toe Amputation for Circulatory System Disorders	*-18.1%*

Stroke

…

Within HSA IV, patients discharged from acute care service with a principal stroke diagnosis have increased 4.8 percent between FFY2008 – 2011.

…

In FFY 2009, Wake County patients accounted for 43.7 percent of these stroke patients, followed by Durham County (13.8 percent) and Johnston County (10.2 percent). During this time DRAH saw an 100 percent overall increase in patients discharged with a stroke diagnosis, due in large part to the increased presence and reputation of the neuroscience service offering at DRAH."

Duke Raleigh discusses the "*significant"* amount of resources committed to building its neurosciences program including the following, from pages 54-55:

- Pursuing The Joint Commission's Certified Disease-Specific Care CVA accreditation,
- Successful recruitment of 4 Duke neurologists and 6 Duke neurosurgeons,
- Development of a skull-base surgery program, and
- Renovation of space for a state-of-the-art 9-bed neurosciences unit.

Regarding Total Joint Replacement, Duke Raleigh makes the following points on pages 56-57:

- Duke Raleigh was awarded The Joint Commission's Disease-Specific Certification for the Total Joint program in 2010,
- Demand for joint replacements is projected to grow 175% for total hip and six-fold for total knee from 2009 – 2030,
- HSA IV knee and hip replacements grew 21.9% from 2008 - 2011(6.8% CAGR),
- Duke Raleigh's knee and hip replacements grew 135% from 2008 - 2011 (33% CAGR).

The applicant states on page 58 that the proposed IRF at Duke Raleigh is projected to focus on stroke, amputation, neurological disorders, and/or orthopaedic diagnoses. Duke Raleigh also states it does not anticipate serving major multiple trauma, traumatic brain injury, burn diagnoses or pediatric patients; specialized services that are already provided at UNC and WakeMed.

The applicant contends that the proposed IRF will enhance its ability to serve patients throughout their entire continuum of care, a goal the applicant states in Section III.1, page 60, is supported by the Centers for Medicare and Medicaid Services (CMS) and Duke physicians:

> *"…Centers for Medicare and Medicaid Services (CMS) established a post-acute care reform plan with a vision of becoming more patient-centered which will increase consumer choice of post-acute care services. Additionally, CMS stated that a seamless continuum of care and transition between settings is necessary, and thus, improved coordination is needed between acute care, post-acute care, and long-term services. Health information systems that are interoperable across settings will support the delivery of coordinated and higher quality care. …Acute care physicians are also more comfortable referring patients to post-acute care when they are able to share clinical guidance and follow their patients throughout the continuum of care."*

On pages 62-86, Duke Raleigh provides its methodology and assumptions which begin with **Step 1**: **Identify Historical Patient Transfers from Duke Raleigh and Duke University Hospital System (DUHS) facilities**. The applicant states that it analyzed patients discharged from each acute entity within DUHS to an IRF then limited the analysis to patients who met the diagnosis categories to be served at the proposed Duke Raleigh IRF, as shown below:

	July 2011 – May 2012 (11 mos.)	**FY 2012 Annualized**	**Acute Facility Sub-totals**
Duke Raleigh patients referred to an IRF	127	139	
- Transferred to Durham Regional Hospital IRF		-7	
Duke Raleigh current demand for IRF			**132**
Durham Regional patients referred to an IRF From Wake, Franklin, Johnston counties		23	
- Admitted to DRH IRF		-19	
Durham Regional acute patients transferred to IRF		4	**4**
Duke University Hospital patients referred to an IRF from Wake, Franklin, Johnston counties		70	
- referred to DRH IRF or non-HSA IV IRF		-35	
Duke University Hospital acute patients transferred to UNC or WakeMed		35	**35**
Total eligible IRF patients transferred from DUHS facilities			**171**

After identifying Duke's acute transfers to IRFs the applicant states it evaluated the FY 2012 patients that Duke Raleigh referred to skilled nursing facilities because an IRF bed was not available at area IRFs. As with the acute patient group, the applicant further narrowed the original group of patients down by the following characteristics:

- patients whose diagnosis is appropriate for the proposed IRF, and
- patients whose county of origin and expected RIC would be appropriate for the proposed IRF.

According to the applicant, approximately 29 (or 31%) patients it referred to skilled nursing facilities because an IRF bed was not available at an area IRF would be appropriate for the proposed IRF at Duke Raleigh. See the table below.

Duke Raleigh Potential Inpatient Rehabilitation Patients, FY 2012

	FY 2012
Duke Raleigh patients referred to an SNF	**912**
- Diagnoses not appropriate for proposed IRF	-818
Diagnoses appropriate for proposed IRF	**94**
- Patients whose county of origin and expected RIC would not be appropriate for proposed IRF	-65
SNF referrals who would have been eligible and appropriate for proposed IRF	**29**

On page 64, the applicant states that it chose to include this historical patient population in its projections, however it is not including such patients from other DUHS facilities. Thus, the applicant projects 200 patients from DUHS facilities comprise the existing base of patients who would be appropriate for and utilize Duke Raleigh's proposed inpatient rehabilitation unit.

Duke Raleigh Potential Inpatient Rehabilitation Patients, FY 2012

	FY 2012 Patients
DUHS patients transferred to an IRF	171
Duke Raleigh patients discharged to SNF	29
Total Patients from DUHS Facilities	**200**

In Section III.1, page 64, the applicant states:

> ***"Step 2: Project Inpatient Rehab Patients from DRAH and DUHS Facilities***
>
> *As described previously in this Section, DRAH has experienced exceptional growth of inpatients with diagnoses that may be eligible and appropriate to obtain post-acute care in an inpatient rehabilitation unit. For example, within HSA IV, patients discharged from acute care service with a principal stroke diagnosis have increased 4.8 percent between FFY2008 - 2011. During this time period, DRAH saw an 100 percent overall increase in patients discharged with a stroke diagnosis, due in large part to the increased presence and reputation of the neuroscience offerings at DRAH."*

On page 65, the applicant also provides examples of the growth of several other diagnoses as shown in the following table.

Principal Diagnosis	**Increase in Number of Patients Discharged FFY08-FFY11**	
	HSA IV	**Duke Raleigh**

Stroke	5%	100%
Total Knee Replacements	23%	124%
Total Hip Replacements	23%	210%

The applicant further states that it has established acute care growth rates for key diagnoses to be served by the proposed IRF:

- Neurological diagnosis 34.9%, and
- Orthopaedic diagnosis 36.9%.

In addition, the applicant projects FY12 volume of both acute care and DUHS patients appropriate for Duke Raleigh's proposed IRF to increase 6% annually, stating that a 6% growth rate is reasonable and conservative compared to Duke Raleigh's historical acute care patient discharges and growth patterns for most of the diagnoses expected to utilize the proposed project. See tables below.

Historical Growth in Duke Raleigh Acute Care Patient Discharges

	FY08	FY09	FY10	FY11	3-Yr. CAGR
Acute Care Patient Discharges	5,304	6,263	7,025	7,382	11.6%

Projected Growth in DUHS Patients Appropriate for Duke Raleigh Inpatient Rehabilitation

	FY12	FY13	FY14	FY15	FY16	FY17
Patients	200	212	225	238	252	268

Step 3: Estimate Inpatient Rehabilitation Market Share

To project the market share of DUHS patients (Duke Raleigh, Durham Regional Hospital and Duke University Hospital) who are projected to utilize the proposed IRF, the applicant states that it used inpatient rehabilitation cases by county of origin and total population by county to calculate inpatient rehabilitation use rates per 1,000 population, as discussed in Section III.1, pages 67-74 and shown in the tables below.

Inpatient Rehabilitation Cases by County of Patient Origin

County	FY07	FY08	FY09	FY10	FY11	5 Yr. Avg.
Wake	1,098	1,177	1,118	1,118	1,090	1,120
Durham	259	293	320	349	320	308
Johnston	259	255	251	217	242	245
Orange	171	174	174	141	140	160
Chatham	100	82	77	69	108	87
Franklin	102	94	98	115	104	103
Granville	52	54	57	80	70	63

Lee	100	81	91	81	56	82
Vance*	23	23	29	177	185	87
Person	53	49	74	61	61	60
Warren	24	11	22	65	76	40
HSA IV	**2,241**	**2,293**	**2,311**	**2,473**	**2,452**	**2,354**

* Maria Parham did not submit rehab data to Thomson Reuters until FFY 2010; therefore volumes from Vance County are significantly under-reported.
Source: Thomson Reuters Inpatient Database

HSA IV Total Population by County

County	2007	2008	2009	2010	2011
Wake	823,616	856,927	882,344	906,788	925,938
Durham	251,952	258,336	263,601	268,412	272,314
Johnston	154,635	160,062	165,111	169,669	172,570
Orange	127,278	129,584	132,215	134,201	135,776
Chatham	59,234	61,198	62,408	63,806	64,553
Franklin	56,762	58,463	59,502	60,836	61,651
Granville	57,573	58,511	59,529	60,513	60,863
Lee	55,334	56,505	57,297	57,882	58,304
Vance	44,802	45,091	45,267	45,375	45,558
Person	38,136	38,226	39,097	39,448	39,700
Warren	20,651	20,762	20,801	20,955	20,883
HSA IV	**1,689,973**	**1,743,665**	**1,787,172**	**1,827,885**	**1,858,110**

Calculated Use Rates are shown in the table below:

Inpatient Rehabilitation Use Rates in HSA IV

County	FY07	FY08	FY09	FY10	FY11	5 Yr. Avg.
Wake	1.33	1.37	1.27	1.23	1.18	1.28
Durham	1.03	1.13	1.21	1.30	1.18	1.17
Johnston	1.67	1.59	1.52	1.28	1.40	1.49
Orange	1.34	1.34	1.32	1.05	1.03	1.22
Chatham	1.69	1.34	1.23	1.08	1.67	1.40
Franklin	1.80	1.61	1.65	1.89	1.69	1.73
Granville	0.90	0.92	0.96	1.32	1.15	1.05
Lee	1.81	1.43	1.59	1.40	0.96	1.44
Vance*	0.51	0.51	0.64	3.90	4.06	3.98
Person	1.39	1.28	1.89	1.55	1.54	1.53
Warren	1.16	0.53	1.06	3.10	3.64	1.90
HSA IV	**1.33**	**1.32**	**1.29**	**1.35**	**1.32**	**1.32**

* Maria Parham did not submit rehab data to Thomson Reuters until FFY10; therefore volumes from Vance and surrounding counties are significantly under-reported during 2007-2009. Therefore, Duke Raleigh calculated the Vance County average use rate based on 2010-2011 data.

[2007 Wake County Use Rate per 1,000 population =
(2007 Wake County Rehabilitation Cases / 2007 Wake County Total Population) x 1,000 =
1,098 / 823,616 = 1.3331]

Next, the applicant states it applied the 5-year average inpatient rehabilitation use rates to the projected county populations to project the total rehabilitation cases by year by county, as

shown in the tables below. The applicant states on page 70 that it is holding constant the average use rates by county.

HSA IV Projected Population by County

County	2012	2013	2014	2015	2016	2017
Wake	945,209	964,481	983,754	1,003,024	1,022,298	1,041,571
Durham	275,946	279,579	283,209	286,841	290,473	294,105
Johnston	175,467	178,361	181,263	184,158	187,056	189,953
Orange	137,760	139,741	141,723	143,709	145,692	147,675
Chatham	65,814	67,072	68,334	69,593	70,854	72,112
Franklin	63,214	64,233	65,640	66,508	67,943	68,954
Granville	61,427	61,948	62,469	62,987	63,508	64,028
Lee	58,712	59,119	59,527	59,933	60,340	60,748
Vance	45,708	45,860	46,010	46,162	46,314	46,467
Person	40,247	40,746	41,225	41,698	42,169	42,640
Warren	20,962	20,941	20,916	20,894	20,873	20,849
HSA IV	**1,890,466**	**1,922,081**	**1,954,070**	**1,985,507**	**2,017,520**	**2,049,102**

Projected Total Inpatient Rehabilitation Cases by County

County	2012	2013	2014	2015	2016	2017
Wake	1,207	1,231	1,256	1,281	1,305	1,330
Durham	323	327	331	336	340	344
Johnston	262	266	271	275	279	284
Orange	168	170	172	175	177	180
Chatham	92	94	96	98	99	101
Franklin	109	111	113	115	117	119
Granville	65	65	66	66	67	67
Lee	84	85	86	86	87	87
Vance*	182	183	183	184	184	185
Person	62	62	63	64	64	65
Warren	40	40	40	40	40	40
HSA IV	**2,593**	**2,635**	**2,677**	**2,718**	**2,761**	**2,802**

[Projected 2012 Total Inpatient Rehabilitation Cases =
(2012 Wake County Projected Population x Wake County 5-Year Inpatient Rehabilitation Average Use Rate) / 1,000 =
(945,209 x 1.28) / 1,000 = 12,098,675 / 1,000 = 1,210]

Next, the applicant determined patient origin for the FY12 DUHS patients transferred to an IRF and Duke Raleigh patients discharged to a skilled nursing facility (Step 1), projected volume by county through FY17 (PY3) and then calculated the market share for each county in HSA IV.

Patient Origin for DUHS Patients Appropriate for Proposed IRF – FY12

	IRF Referrals	SNF Referrals	Total

County	Duke Raleigh	Duke University Hospital	Durham Regional Hospital	Duke Raleigh	
Wake	77	28	3	24	**132**
Durham	1				**1**
Johnston	6	5		1	**12**
Orange	1				**1**
Chatham					**0**
Franklin	5	2	1	4	**12**
Granville	1				**1**
Lee	1				**1**
Vance	10				**10**
Person					**0**
Warren	1				**1**
HSA IV Total	103	35	4	29	**171**
Outside HSA IV	29				**29**
Total Patients	**132**	**35**	**4**	**29**	**200**

Projected Patient Origin for Duke System Patients Appropriate for Proposed IRF

	Actual	Projected				
County	**2012**	**2013**	**2014**	**2015 PY1**	**2016 PY2**	**2017 PY3**
Wake	132	140	148	157	167	177
Durham	1	1	1	1	1	1
Johnston	12	13	14	15	16	18
Orange	1	1	1	1	1	1
Chatham	0	0	0	0	0	0
Franklin	12	13	14	14	15	16
Granville	1	1	1	1	1	1
Lee	1	1	1	1	1	1
Vance	10	10	11	12	12	13
Person	0	0	0	0	0	0
Warren	1	1	1	1	1	1
Total HSA IV	**179**	**181**	**192**	**203**	**215**	**229**
Outside HSA IV	29	31	33	35	37	39
Total Patients	**200**	**212**	**225**	**238**	**252**	**268**

[Projected FY13 Total Wake County Duke System Patients Appropriate for Proposed IRF = FY12 Total Wake County Duke System Patients Appropriate for Proposed IRF + 6% annual internal growth in patients =
132 + (132 x .06) = 132 + 7.9 = 140]

Estimated Market Share by County in HSA IV
Based on Duke System Patients Appropriate for Proposed IRF

County	2012	2013	2014	2015	2016	2017
Wake	10.9%	11.4%	11.8%	12.3%	12.8%	13.3%
Durham	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Johnston	4.6%	4.8%	5.2%	5.4%	5.6%	6.2%
Orange	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%

Chatham	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Franklin	11.0%	11.7%	12.4%	12.2%	12.7%	13.4%
Granville	1.5%	1.6%	1.5%	1.6%	1.7%	1.5%
Lee	1.2%	1.2%	1.2%	1.2%	1.3%	1.4%
Vance	5.5%	5.5%	6.0%	6.3%	6.7%	7.1%
Person	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Warren	2.5%	2.7%	2.5%	2.7%	2.8%	3.0%
HSA IV	7.7%	8.0%	8.4%	8.8%	9.1%	9.6%

[Estimated Market Share Wake County Patients =
FY12 Total Wake County Duke System Patients Appropriate for Proposed IRF / Projected 2012 Wake County Total Inpatient Rehabilitation Cases =
132 / 1,207 = .1093]

On page 74, the applicant states:

> "*Based on the existing base of patients at DRAH, DUH and DRH that were referred to inpatient rehabilitation services or discharged to a skilled nursing facility and would be appropriate for the proposed unit at DRAH, DRAH would have an approximate market share of 10.9* [7.7%] *percent in FY2012 if it operated inpatient rehabilitation services today. As described previously, this existing base of patients is expected to increase six percent annually during the next five years, which will result in a slight increase of market share in the Health Service Area IV counties (reflected in the previous table). This market share growth is organic and based on the internal growth of services at DRAH that will directly contribute to the admission of inpatient rehabilitation patients for the proposed unit."*

Step 4: Project Market Share Growth (Non-DUHS Patients)

On pages 75-77, the applicant discusses some of the reasons consumers may choose to transfer from other acute care hospitals to the proposed IRF and states:

> *"DRAH projects modest market share growth from its baseline of projected DUHS patient discharges based on referrals/transfers from other acute care hospitals and exercise of patient choice. …DRAH projects this market share growth will occur in Wake, Franklin and Johnston counties. …DRAH projects a gradual ramp-up of market share gain during the first two full project years. During project year three, the market share gain is expected to be comparatively less due to capacity constraints of a 12-bed unit."*

Duke Raleigh Inpatient Rehabilitation
Incremental Market Share Gain

County	PY1	PY2	PY3
Wake	1.0%	1.5%	0.5%
Franklin	1.0%	1.5%	0.5%
Johnston	1.0%	1.5%	0.5%

The applicant then combines "*the estimated market share projections based on its established base of patients appropriate for the proposed unit (Step 3) with the market share gain projections in the previous table.*"

Duke Raleigh Inpatient Rehabilitation
Projected Market Share HSA IV

County	PY1 FY15	PY2 FY16	PY3 FY17
Wake	13.3%	14.8%	15.3%
Durham	0.3%	0.3%	0.3%
Johnston	6.4%	7.9%	8.4%
Orange	0.6%	0.6%	0.6%
Chatham	0.0%	0.0%	0.0%
Franklin	13.2%	14.7%	15.2%
Granville	1.6%	1.7%	1.5%
Lee	1.2%	1.3%	1.4%
Vance	6.3%	6.7%	7.1%
Person	0.0%	0.0%	0.0%
Warren	2.7%	2.8%	3.0%

[Wake County Projected Market Share Project Year 1 (FY15) =
Wake County Estimated Market Share of Duke System Patients Appropriate for Proposed IRF + Incremental Market Share Gain in Wake County =
12.3% + 1.0% = 13.3%]

On page 77, the applicant states it applied market share by county to the total projected inpatient rehabilitation discharges by county to project discharges by county, as shown in the table below:

Projected Discharges by HSA IV County

County	PY1 FY15	PY2 FY16	PY3 FY17
Wake	170	193	203
Durham	1	1	1
Johnston	18	22	24
Orange	1	1	1
Chatham	0	0	0
Franklin	15	17	18
Granville	1	1	1
Lee	1	1	1
Vance	12	12	13
Person	0	0	0
Warren	1	1	1
Total HSA IV	**220**	**249**	**263**

[Projected Discharges by County =
Wake County Market Share x Total Projected Inpatient Rehabilitation by County =
13.3% x 1,207 = 170.37]

In Step 4 [4.1], **Patient in-migration in HSA IV** is discussed by the applicant on pages 77-80, where it states:

"Based on the historical patient origin of DUHS patients referred to other IRFs and skilled nursing facilities that would also be appropriate for the proposed inpatient rehabilitation unit, approximately 15 percent of patients were from a county outside HSA IV … Therefore, DRAH reasonably projects that approximately 15 percent of patients admitted to the proposed unit will originate from outside HSA IV."

The following table reflects the addition of in-migration patients.

Projected Discharges including HSA IV Counties and In-Migration

	Interim FY14	**PY1 FY15**	**PY2 FY16**	**PY3 FY17**
Wake	148	170	193	203
Durham	1	1	1	1
Johnston	14	18	22	24
Orange	1	1	1	1
Chatham	0	0	0	0
Franklin	14	15	17	18
Granville	1	1	1	1
Lee	1	1	1	1
Vance	11	12	12	13
Person	0	0	0	0
Warren	1	1	1	1
In-migration (Outside HSA IV)	33	38	44	47
Total	**225**	**258**	**294**	**310**

On page 79, the applicant states that the proposed project will become operational during January 2014, therefore there will be a 6 month partial fiscal year prior to the first three full fiscal years of the proposed project. During that 6 month period, the applicant assumes 34% occupancy. The following table reflects adjustments the applicant made for FY14 patient projections on page 85.

[Annual Capacity of Proposed Unit = (12 beds x 365 days) / 12.8 ALOS = 4,380 / 12.8 = 342 patients at 100% capacity
Capacity prorated for January – June 2014 = (Annual capacity / 365) x 181 = (342 / 365) x 181 = .937 x 181 = 169.97
January – June Capacity x Projected Occupancy % = Projected # patients January – June 2014
169.97 x .34 = 57.79
Wake County Patients as % of Total Projected Patients = (Wake County Projected # of Patients for FY14 / Total Projected # of Patients for FY14) = (148 / 225) = 65.78%
Projected # Wake County Patients January – June 2014 = 65.78% x 57.79 = 38]

Projected Number of Patients for Partial Year (First 6 months of operation)

	Projected # Patients FY14	**Projected # Patients Partial Year Jan-June 2014 at 34% Occupancy**
Wake	148	39
Durham	1	0
Johnston	14	4

Orange	1	0
Chatham	0	0
Franklin	14	4
Granville	1	0
Lee	1	0
Vance	11	3
Person	0	0
Warren	1	0
In-migration (Outside HSA IV)	33	8
Total	**225**	**58**
% Occupancy	**66%**	**34%**
100% Occupancy	342	170

Step 5: **Project Patients by Rehabilitation Impairment Category (RIC)**

On pages 81-83, the applicant provides the projected RIC code for FY12 DUHS patients who would be appropriate for the proposed unit. The applicant further states that it adjusts those proportions to reflect the anticipated growth in neurological volume: from approximately 12% of admissions in FY12 to approximately 20% of admissions during the first three project years. The applicant's inpatient rehabilitation projections are shown by RIC in the table below:

Inpatient Rehabilitation Projections by RIC

RIC	Description	Est. FY12 DUHS Demand	% of FY12 Total	PY1 FY15	% of FY15 Total	PY2 FY16	% of FY16 Total	PY3 FY17	% of FY16 Total
01	Stroke	15	8.8%	34	13.2%	41	13.9%	43	13.9%
03	Non-traumatic Brain Injury	16	9.4%	33	12.8%	40	13.6%	43	13.9%
05	Non-traumatic Spinal Cord Injury	7	4.1%	19	7.4%	20	6.8%	21	6.8%
06	Neurological	5	2.9%	16	6.2%	21	7.1%	23	7.4%
07	Hip Fractures	1	0.6%	6	2.3%	7	2.4%	7	2.3%
08	Replacement Lower Extremity Jt	50	29.2%	56	21.7%	60	20.4%	63	20.3%
09	Other Orthopaedic	31	18.1%	39	15.1%	42	14.3%	44	14.2%
10	Amputation – Lower Extremity	13	7.6%	22	8.5%	27	9.2%	29	9.4%
14	Cardiac	3	1.8%	3	1.2%	3	1.0%	3	1.0%
19	Guillain-Barre	1	0.6%	1	0.4%	1	0.3%	1	0.3%
20	Miscellaneous	29	17.0%	29	11.2%	32	10.9%	33	10.6%
	Total	**171**	**100.0%**	**258**	**100.0%**	**294**	**100.0%**	**310**	**100.0%**

Step 6: Project Average Length of Stay

On pages 83-84, the applicant states that it projects average length of stay based on the most recent 12 months Uniform Data System for Medical Rehabilitation (UDS) regional ALOS, because Duke Raleigh does not currently operate inpatient rehabilitation beds and because "*it is the most robust with the largest sample size and is the most relevant to the market*

(DRAH's Medicare region)." Duke Raleigh states that it also evaluated both Durham Regional's ALOS data and the ALOS list from TMF Health Quality Institute. Durham Regional's data includes a number of categories with a small number of patients, while the TMF Health Quality Institute data, although similar to the UDS ALOS data, is national, not regional.

UDS ALOS for Projected RIC Categories

RIC	Description	UDS ALOS
01	Stroke	16.3
03	Non-traumatic Brain Injury	13.9
05	Non-traumatic Spinal Cord Injury	15.9
06	Neurological	13.3
07	Hip Fractures	13.3
08	Replacement of Lower Extremity Joint	9.6
09	Other Orthopaedic	11.9
10	Amputation – Lower Extremity	13.2
14	Cardiac	11.1
19	Guillain-Barre	20.6
20	Miscellaneous	12.2

Step 7: Project Rehabilitation Days of Care

The applicant multiplied the UDS ALOS (Step 6) by projected number of patients (Step 5) to project rehabilitation days of care, as shown in the following table.

Projected Days of Care by RIC Categories

RIC	Description	Partial FY FY14	PY1 FY15	PY2 FY16	PY3 FY17
01	Stroke	114	554	668	701
03	Non-traumatic Brain Injury	111	459	556	598
05	Non-traumatic Spinal Cord Injury	62	302	318	334
06	Neurological	39	213	279	306
07	Hip Fractures	13	80	93	93
08	Replacement of Lower Extremity Joint	132	538	576	605
09	Other Orthopaedic	94	464	500	524
10	Amputation – Lower Extremity	78	290	356	383
14	Cardiac	11	33	33	33
19	Guillain-Barre	0	21	21	21
20	Miscellaneous	85	354	390	403
All Categories – Total Days of Care		**740**	**3,307**	**3,791**	**3,999**
% Occupancy			**75.5%**	**86.6%**	**91.3%**

An analysis of Duke Raleigh's 35 most frequent acute care DRG's (FY11) corresponds to the RICs that Duke Raleigh proposes to serve. In 2011 Duke Raleigh had 7,540 discharges: 21.8% percent had a DRG related to orthopaedics, 4.8% were related to gastrointestinal, 3.4% to cardiac, 4.6% to pulmonary, and 2.2% were related to stroke.

In Section IV.2, pages 103-105, the applicant provides a quarterly breakdown of total projected rehabilitation days of care for each of the first eight calendar quarters following completion of the project and provides the assumptions used to project the quarterly estimates as shown below:

TABLE IV-F **Jan. 2014-Dec. 2015**	**# OF REHABILITATION DAYS OF CARE**	**OCCUPANCY RATE** (Days of Care / 365 / Total # of Inpatient Rehabilitation Beds)
1st Quarter of Operation	370	34%
2nd Quarter of Operation	370	34%
3rd Quarter of Operation	827	75%
4th Quarter of Operation	827	75%
Total for First 4 Quarters of Operation	**2,394**	**55%**
5th Quarter of Operation	827	77%
6th Quarter of Operation	827	76%
7th Quarter of Operation	948	86%
8th Quarter of Operation	948	86%
Total for Quarters 5-8 of Operation	**3,549**	**81%**

Note: Numbers may not foot due to rounding

The development of the IRF at Durham Regional is indicative of the increased focus of DUHS on inpatient rehabilitation.

The applicant's projected rehabilitation bed utilization is reasonable given the applicant's current and projected utilization and the projected population growth in the applicant's service area. In addition, the assumptions and methodology are reasonable and support the projections. In summary, Duke Raleigh adequately identified the population to be served and demonstrated the need the population to be served has for the proposed 12-bed inpatient rehabilitation unit. Therefore the applicant is conforming with this criterion.

Johnston proposes to develop an 8-bed inpatient rehabilitation unit on the third floor of the hospital. Johnston does not currently provide inpatient rehabilitation services.

Johnston proposes to contract with UNC Hospitals for the management of the proposed inpatient rehabilitation unit, including the provision of an on-site nurse manager and consultative services. The medical director of UNC's Rehabilitation Program will also provide medical directorship for Johnston's proposed rehabilitation unit.

Population to be Served

In Section III.4, page 102, Johnston states that it does not currently provide inpatient rehabilitation services and provides patient origin for its acute care services on page 105.

In Section III.5, pages 103-104, Johnston provides its methodology and projections of patient origin by county of residence for the first two years of operation following completion of the project, as shown in the following table:

Projected Patient Origin for Proposed Inpatient Rehabilitation Services

County	**Operating Year One**	**Operating Year Two**

	FFY15		FFY16	
	# of Patients	% of Total	# of Patients	% of Total
Johnston	118	84.0%	150	84.0%
Wake	8	5.7%	10	5.7%
Harnett	5	3.6%	6	3.6%
Wayne	2	1.6%	3	1.6%
Other*	7	5.0%	9	5.0%
Total	**140**	**100.0%**	**178**	**100.0%**

*Other includes other NC counties and other states

The applicant provides its methodology for projecting patient origin for the proposed project:

"The following methodology was used to project patient origin of JMC-Smithfield inpatient rehabilitation volume. As described in Section III.1.(b), JMC-Smithfield assumes that inpatient rehabilitation services will be utilized by mostly Johnston County residents, representing 84 percent of the projected volume. Additionally, JMC-Smithfield assumes the patient origin of the remaining rehabilitation volume will be similar to its experience in providing general inpatient acute care services.

First, Johnston Health reviewed the FY 2006 through FY 2011 patient origin of general inpatient acute care discharges at JMC-Smithfield to determine the counties from which it receives most of its acute care volume. As shown below, most of JMC-Smithfield's patients are from Johnston and surrounding counties. Johnston Health assumes that the historical patient origin shown below will likely be similar to the mix of patients for the proposed project.

As described in the projected utilization methodology, JMC-Smithfield calculated its six-year average percentage of Johnston County acute care patients between FY 2006 and FY 2011, and projects that 84 percent of its inpatient rehabilitation volume will originate from Johnston County. Following the same methodology, the last six years of acute care patient origin for JMC-Smithfield is averaged to project inpatient acute care patient origin during the first three project years in the following table."

JMC-Smithfield Acute Care Patients FY 2006 - 2011

County	FY06	FY07	FY08	FY09	FY10	FY11	6 Yr Total	6 Yr Avg.	Avg. %
Johnston	7,921	8,179	8,366	7,334	8,063	8,244	48,107	8,018	84.0%
Wake	481	545	463	401	633	774	3,297	550	5.7%
Harnett	342	332	366	293	382	349	2,064	344	3.6%
Wayne	155	149	161	139	165	175	944	157	1.6%
Other	471	513	469	382	511	537	2,883	481	5.0%
Total	9,370	9,718	9,825	8,549	9,754	10,079	57,295	9,549	100.0%

The applicant does not adequately demonstrate that the patient origin of its current acute care services is a proxy for the proposed rehabilitation services patient origin including whether it actually serves acute care patients with the diagnoses/conditions that are appropriate for an IRF. Inpatient rehabilitation patients generally receive acute care services before being referred to an IRF, however Johnston does not show that it serves the patients it hopes to "keep" in Johnston County. Johnston County patients needing inpatient rehabilitation may receive their acute care services outside of Johnston County. In addition, the applicant does not adequately demonstrate the patient origin for the 16% in-migration (non-Johnston

County) projections. In summary, the applicant does not adequately identify the population it proposes to serve.

Demonstration of Need

In Section III.1, pages 43-97, the applicant discusses the need for the project which is based in part on the 2012 SMFP need determination for 20 inpatient rehabilitation beds in HSA IV, in addition to the following:

> *"The unmet need that necessitates the proposed project is comprised of several factors, including: the growing and aging population in HSA IV, in particular, Johnston County; the need for access to inpatient rehabilitation services in the eastern portion of HSA IV, in particular Johnston County …*
>
> *Application of the standard need methodology indicated a need for four additional inpatient rehabilitation beds in HSA IV; however, in response to an adjusted need determination petition, Exhibit 19, the State Health Coordinating Council (SHCC) recommended an increase in the need determination for HSA IV from four inpatient rehabilitation beds to 20 beds. … no other HSA operates at such a high utilization rate as HSA IV. In particular, the substantial growth within HSA IV resulted in three of the four providers operating at 79.1 to 92.0 percent capacity in Fiscal Year 2010. …*
>
> *There are no inpatient rehabilitation facilities in the eastern and southern portions of the HSA. The disparity in coverage between the areas of the HSA poses an access issue as discussed below relative to population growth and continuity of care."*

On page 46, the applicant compares the projected populations for the counties in HSA IV, and notes that Johnston County ranks third in total population and in numeric growth from FY12- FY15 and fourth in percentage growth during the same time period.

HSA IV County Population Projection 2012-2015

County	2012 Pop.	2015 Pop.	# Growth 2012-2015	% Growth 2012-2015
Wake	945,209	1,003,024	57,815	6.1%
Durham	275,946	286,841	10,895	3.9%
Johnston	175,467	184,158	8,691	5.0%
Orange	137,760	143,709	5,949	4.3%

Chatham	65,814	69,593	3,779	5.7%
Franklin	63,214	66,508	3,294	5.2%
Granville	61,427	62,987	1,560	2.5%
Lee	58,712	59,933	1,221	2.1%
Vance	45,708	46,162	454	1.0%
Person	40,247	41,698	1,451	3.6%
Warren	20,962	20,894	-68	-0.3%
HSA IV Totals	**1,890,466**	**1,985,507**	**95,041**	**5.0%**
NC	9,781,022	10,097,304	316,282	3.2%

"Furthermore, NC OSBM projections (July 2020 to July 2030) indicate that Johnston County will be the fourth fastest growing county in HSA IV and ninth in the state for population growth at 14.6 percent."

Beginning on page 48, the applicant discusses the aging population and counties in HSA IV. The applicant states: *"the aging population in Johnston County is also growing rapidly in both number and percentage."* The applicant states that it looked at the projected population growth from 2012 through 2015 for three age groups: ages 45-64, ages 65+, and combined ages 45 and older. The applicant states that its home county, Johnston County has the second highest projected growth in numbers of people in the age groups 45-64 and 45 and older. Of the age 65+ group, Johnston County ranks fifth in projected numeric growth from 2012-2015. Johnston County's projected percent growth for each of the three age groups is above the state average and second highest in HSA IV. On page 50, the applicant states: *"Page 117 of the 2012 SMFP states, 'In the fall of 2011, there were 981 inpatient rehabilitation beds in 26 facilities* ***strategically located*** *[emphasis added] throughout North Carolina.' This statement …implies that the placement of these specialty units throughout the state and within the HSA's* [sic] *is important. Johnston Health believes that to be true as well."*

Beginning on page 51, the applicant discusses the number of rehabilitation beds per 100,000 population in each of the counties in HSA IV. The number of rehabilitation beds per 100,000 population ranges from zero beds in Johnston, Chatham, Franklin, Granville, Lee, Person and Warren counties to 24.1 beds per 100,000 population in Vance County and 8.2 beds per 100,000 population in the whole HSA as of 2012. The applicant further states that even if Johnston County is approved for the proposed eight beds, it will remain the county with the lowest bed to population ratio in HSA IV (of counties with rehabilitation beds). However, the need methodology for rehabilitation beds in the 2012 SMFP is based on historical days of care in health service areas (HSAs), not population distribution ratios of individual counties.

On pages 52-53, the applicant states:

"Assuming the distribution of the 189 inpatient rehabilitation beds (with the inclusion of 20 beds per the need determination) should be based on the distribution of the population suggests the following distribution of inpatient rehabilitation beds in HSA IV."

County	**% of Population**	**Number of IP Rehab Beds Based on Population**	**Number of Existing Rehab Beds**	**Surplus/ (Deficit)**

Johnston	9%	18	0	(18)
Chatham	3%	7	0	(7)
Franklin	3%	6	0	(6)
Granville	3%	6	0	(6)
Lee	3%	6	0	(6)
Person	2%	4	0	(4)
Warren	1%	2	0	(2)
Durham	15%	28	30	2
Wake	50%	94	98	4
Vance	2%	5	11	6
Orange	7%	14	30	16
Total	**100%**	**189**	**169**	**(20)**

"This analysis supports the location of 18 inpatient rehabilitation beds in Johnston County. However, the suggested distribution based on population is not feasible because four facilities already have beds and operating a two- or four-bed unit, as indicated for some counties, may not be a viable option. Furthermore, as tertiary care centers, UNC Hospitals and WakeMed serve a broader patient population outside their home county. However, this analysis and those discussed previously do ***clearly demonstrate*** *that at the present time there is a disproportionate distribution of inpatient rehabilitation beds in HSA IV. Based on 2012 population numbers as used in this analysis, Johnston County would have 18 inpatient rehabilitation beds. Given that the 18-bed need includes conditions that JMC-Smithfield will not serve, it does not need all these beds, but does believe it needs eight beds – and Johnston County patients do need these beds.* [Emphasis in original.]

Based on the location of existing inpatient rehabilitation providers in HSA IV, illustrated in the map provided on page 44, and the current and projected population growth in Johnston County, coupled with the knowledge that the SMFP suggest that inpatient rehabilitation services should be "strategically located," Johnston Health believes the eastern portion of HSA IV is the most reasonable location for new inpatient rehabilitation service. …

As further evidence of its commitment to providing this new service in Johnston County, Johnston Health is partnering with UNC Hospitals, a long-time provider of inpatient rehabilitation services and the proposed manager of the eight inpatient rehabilitation beds to be developed at the medical center in Smithfield."

Continuing on page 54, the applicant discusses the 2010, 2011 and 2012 SMFPs and the need for 20 additional inpatient rehabilitation beds in HSA IV:

"*As demonstrated in the table below, of the six health service areas in North Carolina, HSA IV is the only area demonstrating high average annual utilization*[8] *during the past three reporting periods used in the need methodology.*

[8]*High Utilization is defined as greater than 70 percent.*

Service	***Average Annual Utilization***

Areas	Rate		
	2008	2009	2010
HSA I	44.3%	42.1%	40.1%
HSA II	49.7%	49.3%	55.4%
HSA III	61.6%	66.6%	67.4%
HSA IV	**80.7%**	**83.3%**	**85.4%**
HSA V	60.2%	58.8%	54.5%
HSA VI	60.2%	62.1%	62.4%

Source: 2010, 2011, 2012 SMFPs, Exhibit 21.

Looking at the specific facilities within HSA IV provides greater clarity about the utilization of each inpatient rehabilitation unit.

Facility	Average Annual Utilization Rate			3-Year Average Utilization
	2008	2009	2010	
WakeMed	90.2%	91.2%	92.0%	91.1%
UNC Hospitals	82.4%	85.0%	81.6%	83.0%
Durham Regional	58.1%	65.0%	79.1%	67.4%
Maria Parham	64.9%	68.6%	61.8%	65.1%

Source: 2010, 2011, 2012 SMFPs, Exhibit 21.

As noted in the table below, the highest utilization in the HSA occurs at UNC Hospitals and WakeMed.

Facility	# Licensed Rehab Beds	2010 Rehab Patient Days	% Occupancy
WakeMed*	84	28,415	92.7%
UNC Hospitals	30	9,100	83.1%
Durham Regional	30	8,467	77.3%
Maria Parham	11	2,657	66.2%

Source: 2012 HLRAs, Exhibit 22.
**Only includes existing licensed inpatient beds; i.e. utilization rate is based on 84 beds in service during reporting period.*

However, based on Truven data, HSA IV hospitals provide a large portion of care to patients outside of HSA IV. Therefore any comparison of rehabilitation bed utilization in HSA IV must recognize the patient origin of the HSA IV facilities.

As shown in the table below, in 2011, the most recent year of complete data, approximately 49.2 percent of UNC's rehabilitation patients were from counties and states outside of HSA IV; 24.4 percent of WakeMed's rehabilitation patients inmigrated; 24.6 percent of Durham Regional Hospital's rehabilitation patients were from counties and states outside of HSA IV; and 6.5 percent of Maria Parham's rehabilitation patients were from other HSA's and states.

Hospital	% Patient Origin Outside HSA IV
WakeMed	24.4%
UNC Hospitals	49.2%

Durham Regional	*24.6%*
Maria Parham	*6.5%*

Source: 2011 Truven data

Furthermore, during the same year, these HSA IV facilities provided inpatient rehabilitation care to more than 200 patients from Johnston County. While it is not reasonable to assume that an inpatient rehabilitation unit in Johnston County would serve every patient living in Johnston County, it is highly likely that a significant percentage of the patients now going to other counties for rehabilitation care would remain in their own county for this care, if available. Because the length of stay for these patients is relatively long (more than two weeks, on average), having local access is a much better option than driving to other counties (e.g. Wake, Durham and Orange) for care."

Continuing on pages 56-61, the applicant describes some of the practical effects on patients and their families as a result of obtaining rehabilitation services in a different county as well as continuity of care issues that may arise.

"According to the Journal of the American Medical Association, continuity of care is comprised of three components: continuity in information, continuity in healthcare management, and continuity in the physician-patient relationship. Continuity of care ensures that patients are provided healthcare services in a coordinated manner without disruption despite the involvement of different physicians/specialists. All parties involved in a patient's healthcare, including the patient, communicate and coordinate care. In the absence of continuity of care patients may not understand their healthcare issues or with whom to discuss them. Lack of continuity of care may also lead to an increase in hospital readmission rates.

…

The development of inpatient acute rehabilitation beds at JMC-Smithfield will fill a gap in the continuum of care, allowing patients who have chosen JMC-Smithfield for their acute care to stay at JMC-Smithfield to complete that care in the rehabilitation setting."

On pages 61-62, the applicant states that having an 8-bed rehabilitation unit in Johnston County would free up some capacity for other inpatient rehabilitation facilities who currently serve Johnston County patients.

"Moreover, as shown in the table below, Johnston County residents will positively impact the capacity for three of the four existing HSA IV inpatient rehabilitation facilities by being served in their home county. This is a win-win for everyone.

Facility	***# Johnston County patients served in 2011***
WakeMed	*184*
UNC Hospitals	*13*
Durham Regional	*7*
Maria Parham	*0*

Source: Truven

…

As noted in the table on page 55 WakeMed's occupancy rate of inpatient rehabilitation beds exceeded 90 percent in FY 2011. Certainly WakeMed's high occupancy is impacted by the use of Johnston County residents in its facility given a lack of local access to such services. … As such, WakeMed filled approximately eight of its 84 beds in 2011 with Johnston County residents (8.4= 3,071 / 365)."

In Section III.1(b), page 64, the applicant provides its need methodology, as follows:

"*1. Obtain historical rehabilitation discharges from Johnston County from FY 2006 through FY 2011.*
2. Determine inpatient rehabilitation use rates for Johnston County.
3. Project rehabilitation discharges from Johnston County through FY 2017.
4. Determine portion of Johnston County rehabilitation volume to be treated at JMC-Smithfield through FY 2017.
5. Project JMC-Smithfield total inpatient rehabilitation volume through FY 2017, including inmigration.
6. Project JMC-Smithfield inpatient rehabilitation patient volume and patient days by medical condition through FY 2017.
7. Project ramp-up of JMC-Smithfield projected inpatient rehabilitation volume during Project Year One."

On pages 64-81, the applicant provides further explanation, including data and formulas referenced in each step of its methodology, some of which is included below.

Step 1:**The historical rehabilitation volume of Johnston County residents** is shown in the following table, from page 62:

Historical Rehabilitation Discharges – Johnston County

	FY06	FY07	FY08	FY09	FY10	FY11
Rehabilitation discharges of Johnston County residents	230	259	253	251	216	242

Source: Truven.

Step 2: **Determine inpatient rehabilitation use rates for Johnston County**, from pages 65-67:

Rehabilitation Discharges of Johnston County Residents by Age Group (FY06- FY11)

Age Cohort	FY06	FY07	FY08	FY09	FY10	FY11
0-17	7	5	1	7	3	4
18-44	25	27	27	31	16	25
45-64	68	67	75	71	80	91
65 +	130	160	150	142	117	122
Total	**230**	**259**	**253**	**251**	**216**	**242**

Johnston County Population by Age Group (FY06 – FY11)

Age Group	FY06	FY07	FY08	FY09	FY10	FY11
0-17	39,375	40,741	42,030	43,066	46,113	47,284
18-44	60,554	62,439	64,352	66,064	63,068	62,307
45-64	35,606	37,559	39,571	41,552	42,900	44,091
65 +	14,310	14,876	15,512	16,214	17,227	18,163
Total	**149,845**	**155,615**	**161,464**	**166,895**	**169,306**	**171,845**

Source: North Carolina Office of State Budget and Management

On page 66, the applicant states that rehabilitation use rates were calculated by dividing the historical discharges of Johnston County residents by Johnston County population for each age group, multiplied by 10,000, as shown below:

Johnston County Rehabilitation Use Rates per 10,000 Population by Age Cohort

Age Group	FY06	FY07	FY08	FY09	FY10	FY11	FY06-FY11 Average
0-17	1.8	1.2	0.2	1.6	0.7	0.8	1.1
18-44	4.1	4.3	4.2	4.7	2.5	4.0	4.0
45-64	19.1	17.8	19.0	17.1	18.6	20.6	18.7
65 +	90.8	107.6	96.7	87.6	67.9	67.2	86.3
Total	**15.3**	**16.6**	**15.7**	**15.0**	**12.8**	**14.1**	**14.9**

On pages 66-67, the applicant states that it chose to use the FY11 utilization rates because they are more *"reasonable and conservative."*

Step 3: **Project rehabilitation discharges from Johnston County** The FY11 use rates (Step 2) are multiplied by the population projections, through FFY17 as shown on pages 67-68:

Johnston County Population Projections

Age Group	FY12	FY13	FY14	FY15	FY16	FY17
0-17	47,709	48,183	48,670	49,176	49,588	49,919
18-44	62,670	63,015	63,284	63,397	63,549	63,906
45-64	45,139	46,105	47,241	48,565	49,974	51,181
65 +	19,225	20,335	22,342	22,296	23,221	24,223
Total	**174,743**	**177,638**	**180,538**	**183,434**	**186,332**	**189,229**

Johnston County Projected Rehabilitation Discharges

Age Group	FY12	FY13	FY14	FY15	FY16	FY17
0-17	4	4	4	4	4	4
18-44	25	25	25	25	25	26
45-64	93	95	98	100	103	106
65 +	129	137	143	150	156	163
Total	**251**	**261**	**270**	**280**	**289**	**298**

[Projected rehabilitation discharges from Johnston County, Age 65 and Older =
(Use Rate for Age 65+ X (population projection for Age 65+ / 10,000) =
67.2 X (19,225 / 10,000) = 67.2 X 1.9225 = 129.192]

Step 4: **Determine the portion of Johnston County rehabilitation volume to be treated at the proposed Johnston rehabilitation unit.**

The applicant's acute care market share of Johnston County discharges is shown in the table below, from page 68.

Percentage of Johnston County Acute Care Discharges Treated at JMC-Smithfield

	FFY06	FFY07	FFY08	FFY09	FFY10	FFY11	FFY06-FFY11 Average
Percentage	48.5%	48.3%	48.6%	44.3%	47.3%	47.5%	47.4%

Source: Truven. DRG Product Lines excluded: Alcohol & Drug Abuse, Normal Newborns, and Rehabilitation.

The applicant then provided the home county market share of North Carolina facilities offering both acute care and inpatient rehabilitation services that were the only provider of both services in their counties, as shown in the table below.

Home County Market Share of Other North Carolina Facilities Offering Both Acute Care & Inpatient Rehabilitation Services

Facility	County	Acute Care Share	Rehab Share	Ratio
Lenoir Memorial Hospital	Lenoir	66.1%	57.5%	0.87
Scotland Memorial Hospital	Scotland	63.2%	56.6%	0.90
University of North Carolina Hospitals	Orange	64.8%	62.6%	0.97
Vidant Medical Center (Pitt)	Pitt	93.4%	93.4%	1.00
New Hanover Regional	New Hanover	93.6%	93.9%	1.00
CarolinaEast Medical Center	Craven	74.6%	75.1%	1.01
FirstHealth Moore	Moore	88.4%	92.9%	1.05
Southeastern Regional Rehabilitation Center	Cumberland	85.5%	91.9%	1.07
Stanly Regional Medical Center	Stanly	48.2%	55.0%	1.14
Nash General Hospital	Nash	58.6%	68.1%	1.16
Heritage Hospital	Edgecombe	39.5%	49.1%	1.24
Rowan Regional Medical Center	Rowan	53.1%	71.2%	1.34
Maria Parham Hospital	Vance	55.9%	81.1%	1.45
Average		**68.1%**	**73.0%**	**1.09**

Source: Truven.

On page 69, the applicant states:

> *"Amongst hospitals providing both acute care and inpatient rehabilitation that are also the only provider in their respective home counties, the average ratio of acute care market share to inpatient rehabilitation market share is 1 to 1.09. Johnston Health believes this ratio best predicts its inpatient rehabilitation market share of Johnston County. This ratio is considerably more conservative that that of the other HSA IV hospital in this table, Maria Parham. As such, JMC-Smithfield's average acute care market share of 47.4 percent was multiplied by 1.09 in order to project an inpatient rehabilitation market share of 51.8 percent. When compared to the hospitals in the table*

above, Johnston's projected home county inpatient rehabilitation market share would rank the same as its home county acute care market share – second lowest.

In the following table, JMC-Smithfield's projected market share, 51.8 percent, is projected forward for the three project years, and applied to total projected Johnston County rehabilitation discharges.

Projected Johnston County Rehabilitation Discharges at JMC-Smithfield

	FY15	FY16	FY17
Johnston County Rehabilitation Discharges	280	289	298
% Treated at JMC-Smithfield	51.8%	51.8%	51.8%
Johnston County Rehabilitation Discharges Treated at JMC-Smithfield	145	150	155

The applicant is projecting that it will serve a larger percentage of Johnston County inpatient rehabilitation patients (51.8%) than it will serve of Johnston County acute care patients (47.4%). However, it only referred less than 1% (.47%) [39 / 8,244 = .00473] of its Johnston County acute care patients to an IRF in 2011, according to a footnote on page 59. Furthermore, the multiplier of 1.09 also inflates the share of patients from other counties as well.

Step 5: **Project JMC-Smithfield total inpatient rehabilitation volume through FY17, including in-migration.** The applicant provides the historical breakout in patient origin between Johnston County patients and those from other counties (in-migration):

Patient Origin of JMC-Smithfield Acute Care Discharges

	FY06	FY07	FY08	FY09	FY10	FY11	FY06-FY11 Average
% of JMC-Smithfield Acute Care Discharges from Johnston County	84.5%	84.2%	85.2%	85.8%	82.7%	81.8%	84.0%
In-migration: % of JMC-Smithfield Acute Care Discharges from Outside Johnston County	15.5%	15.8%	14.8%	14.2%	17.3%	18.2%	16.0%

The applicant also compares the acute and rehabilitation in-migration percentages of the thirteen facilities that are the only providers of both acute and inpatient rehabilitation in their home counties:

Inpatient In-migration at North Carolina Facilities Providing the Only Acute Care and Inpatient Rehab in Their Home County

Facility	County	Inpatient Acute Care In-migration Percentage	Inpatient Rehabilitation In-migration Percentage	Number of Beds
CarolinaEast Medical Center	Craven	33.9%	40.2%	20
FirstHealth Moore	Moore	54.9%	58.4%	25
Heritage Hospital	Edgecombe	27.6%	44.8%	16

Lenoir Memorial Hospital	Lenoir	29.4%	29.3%	17
Maria Parham Hospital	Vance	37.4%	38.8%	11
Nash General Hospital	Nash	41.4%	59.1%	23
New Hanover Regional*	New Hanover	51.1%	63.4%	60
Vidant Medical Center (Pitt)*	Pitt	59.0%	75.3%	75
Rowan Regional Medical Center	Rowan	15.5%	17.6%	10
Scotland Memorial Hospital	Scotland	46.6%	51.9%	7
Southeastern Regional Rehab Ctr*	Cumberland	26.0%	37.9%	78
Stanly Regional Medical Center**	Stanly	23.4%	51.8%	10
University of North Carolina Hospitals*	Orange	85.5%	88.0%	30
Average		**40.8%**	**50.5%**	**29**

*Regional referral center
**IRF to be closed

Of the thirteen facilities in North Carolina that are the only providers of both acute care and inpatient rehabilitation services in their home county (shown above):

- All but one have a higher percentage in-migration for rehabilitation services than for general inpatient acute care, which is expected for a service so specialized that it is only offered in 26 facilities across the state.
- Lenoir Memorial's in-migration for inpatient rehabilitation is slightly lower than its in-migration for acute care services (-0.1%).
- JMC-Smithfield's 16% in-migration for acute care services is lower than all but one facility above, indicating it serves a very local patient population,
- JMC-Smithfield's 16% in-migration for acute care services is lower than all of the inpatient rehabilitation in-migration percentages listed in the table above, and
- Rowan Regional, the only facility that has an in-migration percentage similar to the one proposed by JMC-Smithfield, has an inpatient rehabilitation in-migration of 17.6% and an acute care in-migration of 15.5%.

The applicant states, on page 72, that it could reasonably apply the average "*of those similarly situated facilities (50.5 percent for rehabilitation facilities) to its volume projections."* However, that would not be reasonable because the "similarly situated" facilities to which the applicant refers already have operational inpatient rehabilitation units and several are regional referral centers.

The applicant states it chose to be conservative with its projected in-migration volume, and has assumed its inpatient rehabilitation in-migration will be equal to its acute care in-migration, 16%. Thus, the Johnston County rehabilitation discharges calculated in Step 4 represent 84% of total projected rehabilitation discharges, as shown in the table below.

Projected JMC-Smithfield Rehabilitation Discharges

	FY15	**FY16**	**FY17**
Projected # Johnston County Rehabilitation Discharges Treated at JMC-Smithfield	145	150	155
% of JMC-Smithfield's Rehabilitation Discharges from Johnston County	84%		
Projected # JMC-Smithfield's Rehabilitation Discharges from outside Johnston County	27	28	29

% of JMC-Smithfield's Rehabilitation Discharges from outside Johnston County	16%		
Total Projected Rehabilitation Discharges at JMC-Smithfield	**172**	**178**	**184**

[FY15 Total Projected Rehabilitation Discharges at JMC-Smithfield = Projected # Rehabilitation Discharges from Johnston County /.84 = 145 / .84 = 172

FY15 Projected # Discharges from outside Johnston County = FY15 Total Projected Rehabilitation Discharges - Projected # Rehabilitation Discharges from Johnston County = 172 - 145 = 27]

Step 6: Project JMC-Smithfield inpatient rehabilitation patient volume and patient days by medical condition.

On pages 72-80, the applicant provides the methodology for projecting patient cases and days by medical condition (RIC), including the following data sources that were identified because JMC-Smithfield has no historical data and Truven does not provide the data needed:

- eRehabData from the American Medical Rehabilitation Providers Association (AMRPA)
  - National and South Atlantic regional patient mix
  - National ALOS
- UNC Hospital's ALOS and patient mix for inpatient rehabilitation
- WakeMed's ALOS and patient mix for rehabilitation
- ALOS for Johnston County rehabilitation patients
- ALOS for Johnston County patients treated at WakeMed Rehabilitation Hospital (as reported by Truven).

:

The data is summarized in the table below.

RIC	**eRehabData**		**UNC Hospitals**		**WakeMed**	
	January-June 2010		FY10		CY11 Projected*	
	South Atlantic Patient Mix	**National ALOS**	**Patient Mix**	**ALOS**	**Patient Mix**	**ALOS**
Stroke	25.0%	16.1	27.1%	16.5	20.3%	19.8

Traumatic Brain Injury	3.4%	15.8	3.8%	11.9	4.0%	19.0
Non-traumatic Brain Injury	4.6%	13.9	4.5%	13.1	5.5%	18.6
Traumatic Spinal Cord Injury	1.2%	21.0	3.6%	29.1	9.5%	17.5
Non-traumatic Spinal Cord Injury	5.6%	15.4	6.2%	22.2		
Neurological	4.3%	14.0	4.8%	14.3	3.9%	22.1
Fracture of Lower Extremity	11.5%	13.3	5.5%**	9.7**	27.8%***	12.3***
Replacement of Lower Extremity Joint	10.2%	9.6	4.0%	8.9		
Other Orthopaedic	4.4%	11.9	2.6%	15.9		
Amputation – Lower Extremity	4.1%	14.0	4.3%**	16.8**	5.3%***	15.4***
Amputation - Other	0.3%	12.7				
Osteoarthritis	0.0%	12.5	1.0%	9.5		
Rheumatoid – Other Arthritis	0.2%	12.0				
Cardiac	5.9%	11.3	1.2%	21.5	6.7%	13.2
Pulmonary	1.4%	11.9	0.2%	5.0		
Pain Syndrome	0.7%	11.1				
Major Multiple Trauma (no brain)	1.2%	14.0	4.1%	10.5		
Major Multiple Trauma (w/ brain)	0.6%	19.4	5.5%**	20.0**		
Guillain-Barre	0.3%	20.0	1.0%	25.3		
Miscellaneous	15.0%	12.9	19.1%	11.7	7.6%	18.1
Burns	0.1%	18.8	1.2%	8.5		
Debility					9.3%	14.0
Total	**100.0%**	**13.8**	**100.0%**	**15.2**	**100.0%**	**16.1**

*Projected by WakeMed in its J-8631-11 application.
** The data for UNC Hospitals had one category each for amputations, arthritis and fracture.
*** The data for WakeMed had one category for orthopaedic and one for amputations.

Johnston states that it chose to use the national and regional benchmarks from eRehabData because they are reasonable and because the ALOS figures are conservative especially considering the historical ALOS figures for rehabilitation discharges from Johnston County, both overall and as experienced by WakeMed for Johnston County patients (as reported by Truven and shown in the table below.

	FY06	***FY07***	***FY08***	***FY09***	***FY10***	***FY11***	***FY06-FY11 Average***
Rehab ALOS Johnston County Residents	*14.1*	*13.8*	*14.2*	*14.8*	*15.0*	*15.9*	*14.6*
Rehab ALOS Johnston County residents treated at WakeMed	*14.4*	*13.2*	*14.1*	*14.7*	*15.0*	*16.7*	*14.7*
eRehabData national overall ALOS benchmark					*13.8*		

On page 77, the applicant states that it adjusted the eRehabData patient mix to reflect the medical conditions it expects to treat. For example, the applicant states it will not treat traumatic or non-traumatic spinal cord injuries at the proposed inpatient rehabilitation unit.

"Projected Percentage of JMC-Smithfield's Rehabilitation Patients and Average Length of Stay (ALOS) by Medical Condition

Medical Condition	***South Atlantic % of Patients***	***JMC-Smithfield Adjusted % of Patients***	***National ALOS***
Stroke	*25.0%*	*26.8%*	*16.1*
Traumatic Brain Injury	*3.4%*	*3.6%*	*15.8*
Nontraumatic Brain Injury	*4.6%*	*4.9%*	*13.9*
Neurological	*4.3%*	*4.6%*	*14.0*
Fracture of Lower Extremity	*11.5%*	*12.3%*	*13.3*
Replacement of Lower Extremity Joint	*10.2%*	*10.9%*	*9.6*
Other Orthopedic	*4.4%*	*4.7%*	*11.9*
Amputation – Lower Extremity	*4.1%*	*4.4%*	*14.0*
Amputation – Other	*0.3%*	*0.3%*	*12.7*
Osteoarthritis	*0.0%*	*0.0%*	*12.5*
Rheumatoid – Other Arthritis	*0.2%*	*0.2%*	*12.0*
Cardiac	*5.9%*	*6.3%*	*11.3*
Pulmonary	*1.4%*	*1.5%*	*11.9*
Pain Syndrome	*0.7%*	*0.8%*	*11.1*
Major multiple trauma (no brain)	*1.2%*	*1.3%*	*14.0*
Major multiple trauma (w/Brain)	*0.6%*	*0.6%*	*19.4*
Guillain-Barre	*0.3%*	*0.3%*	*20.0*
Miscellaneous	*15.0%*	*16.1%*	*12.9*
Burns	*0.1%*	*0.1%*	*18.8*
Total Discharges	***93.2%***	***100.0%***	***13.8***

…

To determine rehabilitation discharges by medical condition, the adjusted mix of patients provided in the previous table was applied to JMC-Smithfield's total projected inpatient rehabilitation volume (from Step Five) for the three project years.

Projected JMC-Smithfield's Rehabilitation Patients by Medical Condition FY 2015 – FY 2017

Medical Condition	***% of Patients***	***Projected JMC-Smithfield Rehabilitation Patients***		
		FY 2015	***FY 2016***	***FY 2017***
Stroke	*26.8%*	*46*	*48*	*49*
Traumatic Brain Injury	*3.6%*	*6*	*6*	*7*
Nontraumatic Brain Injury	*4.9%*	*9*	*9*	*9*
Neurological	*4.6%*	*8*	*8*	*8*
Fracture of Lower Extremity	*12.3%*	*21*	*22*	*23*

Replacement of Lower Extremity Joint	*10.9%*	*19*	*19*	*20*
Other Orthopedic	*4.7%*	*8*	*8*	*9*
Amputation – Lower Extremity	*4.4%*	*8*	*8*	*8*
Amputation – Other	*0.3%*	*1*	*1*	*1*
Osteoarthritis	*0.0%*	*0*	*0*	*0*
Rheumatoid – Other Arthritis	*0.2%*	*0*	*0*	*0*
Cardiac	*6.3%*	*11*	*11*	*12*
Pulmonary	*1.5%*	*3*	*3*	*3*
Pain Syndrome	*0.8%*	*1*	*1*	*1*
Major multiple trauma (no brain)	*1.3%*	*2*	*2*	*2*
Major multiple trauma (w/Brain)	*0.6%*	*1*	*1*	*1*
Guillain-Barre	*0.3%*	*1*	*1*	*1*
Miscellaneous	*16.1%*	*28*	*29*	*30*
Burns	*0.1%*	*0*	*0*	*0*
Total Discharges	***100.0%***	***172***	***178***	***184***

Next, the applicant states that it multiplied the projected volume by the projected average length of stay for each medical condition, as shown in the table below.

Medical Condition	**ALOS**	**Projected JMC-Smithfield Rehabilitation Patient Days**		
		PY1 FFY15	**PY2 FFY16**	**PY3 FFY17**
Stroke	16.1	745	769	794
Traumatic Brain Injury	15.8	99	103	106
Nontraumatic Brain Injury	13.9	118	122	126
Neurological	14.0	111	115	119
Fracture of Lower Extremity	13.3	283	292	302
Replacement of Lower Extremity Joint	9.6	181	187	193
Other Orthopedic	11.9	97	100	103
Amputation – Lower Extremity	14.0	106	110	113
Amputation – Other	12.7	7	7	8
Osteoarthritis	12.5	0	0	0
Rheumatoid – Other Arthritis	12.0	4	5	5
Cardiac	11.3	123	127	132
Pulmonary	11.9	31	32	33
Pain Syndrome	11.1	14	15	15
Major multiple trauma (no brain)	14.0	31	32	33
Major multiple trauma (w/Brain)	19.4	22	22	23
Guillain-Barre	20.0	11	11	12
Miscellaneous	12.9	358	370	382
Burns	18.8	3	4	4
Total Discharges	**13.6**	**2,346**	**2,423**	**2,502**

For Project Year 1 (FFY15) Total Patient Days equal 2,346; ALOS equals 13.6 days. (See table on page 80.) The applicant states in its methodology above: "*certain medical conditions listed in the eRehabData national benchmarking data reflect higher acuity level patient types than those that would be treated at JMC-Smithfield. As such, the South Atlantic regional mix of patients was adjusted based on the selected medical conditions that JMC-Smithfield expects to treat at its proposed rehabilitation facility…*" However, the applicant did not provide information on its acute care patient mix and any link to the proposed

inpatient rehabilitation patient mix, or information on actual discharges (or discharges eligible for inpatient rehabilitation) and any link to inpatient rehabilitation. Moreover, review of data obtained from the Cecil G. Sheps Center for Health Services Research (Cecil G. Sheps Center[2]) regarding top DRGs (diagnostic related grouping) for 2011 discharges calls into question the reliability of Johnston's projected utilization. Of the top thirty five discharge DRGs for Johnston, only one (major joint replacement or reattachment of lower extremity) is clearly related to the conditions mentioned above as appropriate for rehabilitation. The number of cases reported for each of the top thirty five DRGs range from 791 for the most utilized DRG to 64 for the 35th most prevalent DRG for Johnston. Twenty-four percent of Johnston's DRGs are related to obstetrics, 9.7% are related to psychiatric/drug, 9.5% are related to cardiac, and 1.8% related to orthopaedic discharges.

Step 7: Assume a six month ramp-up period with 50% utilization during Q1 and 75% during Q2 (based on patient days), as stated by Johnston on page 80**..**

JMC-Smithfield Project Year One Patient Days Including Ramp-up Adjustment

	Patient Days from Step 6	Projected % Utilization	Projected Patient Days After Ramp-up Adjustment
Q1	586	50%	293
Q2	586	75%	440
Q3	586	100%	586
Q4	586	100%	586
Total Operating Year One	**2,346**	**81%**	**1,906**

The ramp-up assumption reduces projected discharges in Project Year One from 172 to 140. Projected volume and occupancy are shown below:

Projected Volume and Occupancy Rates
JMC-Smithfield Rehabilitation Beds During Project Years

	PY1 FFY15	PY2 FFY16	PY3 FFY17
Beds	8	8	8
ALOS	13.6	13.6	13.6
Patient Days	1906	2423	2502
Discharges	140	178	184
Average Daily Census	5.2	6.6	6.9

[2] The Cecil G. Sheps Center for Health Services Research is under contract with the Division of Health Service Regulation (DHSR) to maintain, for use in research and state health planning the NC Discharge Databases (Inpatient, Ambulatory Surgery and Emergency Department) collected by Truven Health Analytics (Truven). Yearly updates from Truven keep the research database current. Since 1996, hospitals have reported data to Truven (formerly Solucient, Thomson Healthcare and Thomson Reuters) as set forth by the Medical Care Data Act of 1995.

Occupancy Rate	**65.3%**	**83.0%**	**85.7%**

The applicant's projected rehabilitation bed utilization in Project Year 3 is aggressive, especially considering that only three IRFs in the state had occupancy higher than 80% in 2010 and 2011 according to the 2012 SMFP and 2012 Licensure Renewal Applications (LRAs). In addition, smaller inpatient rehabilitation units generally have a harder time meeting an 80% utilization rate. The three rehabilitation facilities with occupancy higher than 80% in 2011 had the following number of beds and occupancy rates:

	# Beds	**2011 Utilization %**
Nash General:	23	86.2%
UNC Hospitals	30	83.1%
WakeMed	84	92.7%

Of the fourteen IRFs in the state with less than 30 beds:

- seven (or 50%) had occupancy under 50% in 2011,
- five had occupancy ranging from 53% - 67%, and
- two had occupancy from 75%-86%

(Source: 2012 LRAs).

It is not reasonable for Johnston to assume that its initial market share for rehabilitation services, as a small start-up provider of these services, would be comparable with other existing rehabilitation programs in the state. Moreover, inpatient rehabilitation service areas are not county-based, but rather based on regions and *"strategically located"* facilities. Further, Johnston states that it only discharged .47% of its acute care patients to an IRF and does not identify how many it discharged to an SNF with conditions appropriate for an IRF. In addition, the applicant calculated inpatient rehabilitation market share based on the average ratio of acute care market share to inpatient rehabilitation market share of "*hospitals providing both acute care and inpatient rehabilitation that are also the only provider in their respective home counties,"* a group of facilities that is not comparable to the applicant's proposal. Nor is the relationship between acute care market share and rehabilitation market share clear among even a smaller group of IRF's. The applicant did not demonstrate that the projected utilization is based upon reasonable and supported assumptions. In summary, Johnston did not demonstrate the need the population to be served has for the proposed 8-bed inpatient rehabilitation unit. Therefore the application is non-conforming with this criterion.

(3a) In the case of a reduction or elimination of a service, including the relocation of a facility or a service, the applicant shall demonstrate that the needs of the population presently served will be met adequately by the proposed relocation or by alternative arrangements, and the effect of the reduction, elimination or relocation of the service on the ability of low income persons, racial and ethnic minorities, women, handicapped persons, and other underserved groups and the elderly to obtain needed health care.

NA

(4) Where alternative methods of meeting the needs for the proposed project exist, the applicant shall demonstrate that the least costly or most effective alternative has been proposed.

NC
UNC
Johnston

C
WakeMed
Duke

UNC - In Section III.3, pages 75-76, the applicant states it evaluated three alternatives before proposing to add twelve additional inpatient rehabilitation beds and renovate space in its current facility. The two alternatives that were considered, but not chosen include the following:

1. Maintain the status quo, and
2. Add and relocate some inpatient rehabilitation beds to the Hillsborough Campus.

The applicant states that it did not choose to maintain the status quo because it has *"a compelling need for additional capacity based on high utilization of both its existing acute care beds and the inpatient rehabilitation beds."* The applicant states that the second alternative would be cost-prohibitive because it requires duplication of support services, ancillary space and therapy equipment.

However, the application is not conforming with Criteria (1), (5), and (18a). An applicant that does not conform to all Criteria is not an effective alternative. The applicant did not adequately demonstrate the need the population to be served has for the proposed 12-bed inpatient rehabilitation unit, is not conforming with this criterion and is not approved.

WakeMed - In Section III.3, pages 81-84, the applicant states it evaluated six alternatives before proposing to add twelve additional inpatient rehabilitation beds and relocate 29 existing beds in newly constructed space on its current campus. The five alternatives that were considered, but not chosen include the following:

1. Maintain the status quo,
2. Develop inpatient rehab beds at a different WakeMed location,
3. Develop inpatient rehab beds in existing space at WakeMed Raleigh Campus,
4. Develop replacement rehabilitation hospital with 110 beds, and
5. Develop all 20 rehabilitation beds in 2012 SMFP allocation.

The applicant states that Alternative One was not chosen because it would provide no additional bed capacity to relieve its high utilization and the needs of the rapidly growing population.

Alternative Two was not chosen because of the synergistic benefits of a single site, including the location adjacent to acute care services, as well as the costs of and difficulties in administering two separate programs in the same region.

Alternative Three was not chosen because there is no current vacant or proposed vacant space at the Raleigh campus adjacent to the Rehab Hospital and because administrators and physicians would like to move the program toward all patient rooms.

Alternative Four was not chosen because the capital costs were deemed to be cost-prohibitive.

Alternative Five was not chosen because the applicant believes the 14 already approved, soon-to-be opened beds plus the proposed 12 additional beds will be sufficient to meet demand.

The application is conforming with all other applicable statutory and regulatory review criteria. See Criteria (1), (3), (5), (6), (7), (8), (12), (13), (14), (18a), and (20) for discussion. The applicant adequately demonstrated that the proposal is its least costly or most effective alternative and is conforming with this criterion and is conditionally approved.

Duke - In Section III.3, pages 88-90, the applicant states it evaluated four alternatives including maintaining the status quo before proposing to develop a 12-bed IRF in its current facility. The three alternatives that were considered, but not chosen include the following:

1. Maintain the status quo
2. Develop a freestanding inpatient rehabilitation hospital, and
3. Develop an inpatient rehabilitation unit larger than 12 beds.

The applicant states that Alternative One was not chosen because of the number of patients currently referred for inpatient rehabilitation services, the growing population, and the expansion of the emergency department and neuroscience services.

Alternative Two was not chosen because it would be a more costly option given the availability of space within the hospital.

Alternative Three was not chosen because the applicant believes the complement of 10 private rooms and two semi-private beds is more satisfactory than having more semi-private beds, and the 12-bed option will require minimal construction and renovation.

The application is conforming with all other applicable statutory and regulatory review criteria. See Criteria (1), (3), (5), (6), (7), (8), (13), (14), (18a), and (20) for discussion. The applicant adequately demonstrated that the proposal is its least costly or most effective alternative, is conforming with this criterion and is conditionally approved.

Johnston - In Section III.3, pages 101-102, the applicant states it evaluated four alternatives including maintaining the status quo before proposing to develop an eight-bed IRF in its current facility. The three alternatives that were considered, but not chosen include the following:

1. Maintain the status quo,
2. Develop a free-standing rehabilitation facility, and

3. Apply for more than eight beds

The applicant states that maintaining the status quo would not improve access to inpatient rehabilitation for Johnston County residents; therefore it was not a viable alternative.

Alternative Two was not chosen because the applicant stated that an 8-bed unit could not be reasonably developed as a stand-alone facility and would result in duplication of support services. Also, renovating existing space is more cost effective than new construction.

The applicant stated that Alternative Three is not needed at this time; that eight beds are appropriate given the medical conditions appropriate for treatment at JMC-Smithfield.

However, the application is not conforming with Criteria (1), (3), (5), (6), and (18a), and 10A NCAC 14C .2800 Criteria and Standards for Rehabilitation Services. An applicant that does not conform to all Criteria is not an effective alternative. The applicant did not adequately demonstrate that the proposal is its least costly or most effective alternative, is not conforming with this criterion and is not approved.

(5) Financial and operational projections for the project shall demonstrate the availability of funds for capital and operating needs as well as the immediate and long-term financial feasibility of the proposal, based upon reasonable projections of the costs of and charges for providing health services by the person proposing the service.

NC
UNC
Johnston

C
WakeMed
Duke Raleigh

UNC - In Section VIII.1, the applicant projects that the capital cost for the project will be $2,677,000 which includes $1,852,000 in construction costs, $412,000 in equipment and furniture costs, $223,000 in architect and engineering fees, and contingency fees of $190,000. In Section VIII.2, the applicant states that the project will be financed with Accumulated Reserves. In Section IX.1, the applicant projects no start-up expenses or initial operating expenses. In Exhibit 27 the applicant provides a letter from the Executive Vice President and Chief Financial Officer of UNC Hospitals which states:

"RE: CON Application for addition of 12 Inpatient Rehabilitation beds / UNC Hospitals
…
This letter is to confirm the availability of funding in excess of $2,677,000 specifically for use for the capital costs associated with the development of the above referenced project. Attached is a copy of our most recent audited financial statement for the fiscal years ending June 30, 2011. You can find disclosed in the 'Current Assets' section of the 'Statements of Net Assets' in the fiscal year 2011 audited financial statement, listed as

line item 'Cash and Cash Equivalents' in the statement's Exhibit A-1, funds in excess of this amount which are available for this project."

Exhibit 28 contains the audited financial statements for the University of North Carolina Hospitals for the year ended June 30, 2011, which document that UNC had $119,165,388 in Cash and Cash Equivalents, $380,179,500 in Total Current Assets, $1,627,765,197 in Total Assets and $1,126,731,376 in Total Net Assets (Total Assets minus Total Liabilities). The applicant adequately demonstrated the availability of sufficient funds for the capital needs of the project.

In Form B, pages 133-136, the applicant projects Rehabilitation Service Line Revenues will exceed Expenses in the second and third years of operation following completion of the proposed project. In FY12, Rehabilitation Service Line Revenue is less than Expenses by $891,331. In Project Year 3 (FY17) the applicant projects Revenues to exceed Expenses by $899,315, as shown in the table below.

Projected Revenue and Expenses for Rehabilitation Unit

	FY12	PY1 FY15	PY2 FY16	PY3 FY17
Total Net Revenues	$7,830,705	$11,746,654	$13,447,044	$15,393,620
Total Expenses	$8,722,036	$12,492,169	$13,298,277	$14,494,305
Surplus (Deficit)	**($891,331)**	**($745,515)**	**$148,767**	**$899,315**

In Form C in the Pro Formas Section, page 136, the applicant provides Gross Patient Revenue for FY12 of $11,345,670. However, data provided by the Cecil G. Sheps Center using UB04 revenue codes for the rehabilitation unit show a much different amount - $21,300,974, almost twice the amount provided by the applicant for FFY11. The following table compares the applicant's Gross Revenue information from Form C compared to the Gross Revenue charges for the years 2007 – 2012, as reported to the Cecil G. Sheps Center by Truven Health Analytics[3].

	FFY07	FFY08	FFY09	FFY10	FFY11	FY12
Gross Revenues – UB04 *	$18,000,517	$17,856,132	$19,267,753	$19,203,365	$21,300,974	
Gross Revenues Form C						$11,345,670

* Source: Cecil G. Sheps Center

The applicant's Gross Revenue is not supported and not credible. In its 2011 rehabilitation bed application, the same discrepancy was noted. Neither that discrepancy nor the one in this application were discussed/explained by the applicant.

The applicant projects UNC Hospitals' revenue to continue to exceed expenses in each of the first three years of operation following completion of the proposed project. In Project Year 3

[3] The Cecil G. Sheps Center for Health Services Research is under contract with the Division of Health Service Regulation (DHSR) to maintain, for use in research and state health planning the NC Discharge Databases (Inpatient, Ambulatory Surgery and Emergency Department) collected by Truven Health Analytics (Truven). Yearly updates from Truven keep the research database current. Since 1996, hospitals have reported data to Truven (formerly Solucient, Thomson Healthcare and Thomson Reuters) as set forth by the Medical Care Data Act of 1995.

(FY17) the applicant projects UNC Revenue to exceed Expenses by $114,781,297. Thus the applicant projects a positive net income for the entire facility during the first three years following project completion.

The applicant's Projected Revenues are not credible.

From Forms B and C, pages 136-137, total cost per patient day for the first two project years is shown in the table below:

Project Year 1	$1,189
Project Year 2	$1,070

[Total Cost Per Patient Day PY1 = Total Expenses / Total Patient Days = 12,492,169 / 10,507 = 1,188.94]

In Form C, page 137, the applicant lists the projected average charge for Project Year 1 as $1,479.24 for every payor. On Form D, page 138, the applicant lists the projected average reimbursement rate as $1,020.29 for every payor, which is not reasonable or credible. See table below.

Projected Average Charges and Reimbursement Rates, Project Year 1, FY15

	% of Total	Projected Avg. Charge	Projected Avg. Reimbursement Rate
Self Pay/Indigent/Charity	7.44%	$1,479.24	$1.020.29
Medicare/ Medicare Managed Care	45.85%	$1,479.24	$1.020.29
Medicaid	22.09%	$1,479.24	$1.020.29
Commercial Insurance	3.37%	$1,479.24	$1.020.29
Managed Care	19.08%	$1,479.24	$1.020.29
Other	2.17%	$1,479.24	$1.020.29
Total	**100.00%**	$1,479.24	$1.020.29

Therefore, revenues which are based on projected average reimbursement rates are unsupported and unreliable. Furthermore, the applicant's Gross Revenue information is unsupported and not credible, therefore average charges are also not credible. As a result, the applicant failed to demonstrate that the financial feasibility of the proposed project is based on reasonable projections of costs and revenues. Consequently, the application is not conforming with this criterion.

WakeMed - In Section VIII.1, the applicant projects that the capital cost for the project will be $25,234,051, which includes the following:

	Capital Cost
Site Costs	$1,985,000
Construction Contract	$17,725,890
Equipment/Furniture	$1,475,000
Consultant Fees	$2,362,709
Financing Costs	$970,540
Contingency, inflation	$714,912
Total Capital Cost	$25,234,051

In Section VIII.2, the applicant states that the project will be financed with a Bond Issue. In Section IX.1, the applicant projects no start-up expenses or initial operating expenses. In Attachment 32, the applicant provides a letter from the Executive Vice President-Finance and Chief Financial Officer of WakeMed which states in part:

> "*This letter is to confirm that WakeMed plans to utilize bond financing to fund the proposed development of 12 new and 29 relocated inpatient rehabilitation beds at WakeMed Raleigh Campus. The total cost of the project, including financing, is $25,234,051 for construction and related equipment. WakeMed has received confirmation from …, managing Director at Citigroup Global Markets, Inc. that Citigroup is willing to assist WakeMed and arrange this sale. This willingness is based on WakeMed bond credit ratings and history.*
>
> *If necessary, WakeMed is able to utilize accumulated reserves to fund the proposed project until the sale is complete. As you can see from the audited financial statements for the year ended September 30, 2011, WakeMed had more than adequate current assets available to fund the projected capital expenditure for this project.*
>
> *Please accept this letter as commitment of necessary funds to develop the entire project. The funds will be available at the end of the agency review and in subsequent months.*"

Attachment 32 also contains a letter from a Managing Director of Citigroup Global Markets, Inc. which states in part:

> *"… we are pleased to inform you that, based upon information provided to Citi to date and our preliminary review of various materials relating to the Project, we are highly interested in actively pursuing further discussions regarding a full underwriting commitment and are willing to work diligently toward that end.*
>
> *Based upon your financial strength, Citi would expect to offer a publically sold tax-exempt bond issue that would either be insured or issued with WakeMed's stand-alone ratings, if WakeMed public ratings are deemed prudent by WakeMed management. We believe that this funding could attain an investment grade rating."*

Attachment 31 contains the audited financial statements for WakeMed for the year ended September 30, 2011, which document that WakeMed had $161,808,000 in Cash and Cash Equivalents, $705,889,000 in Total Current Assets, $1,485,499,000 in Total Assets, and $800,950,000 in Total Net Assets (Total Assets minus Total Liabilities). The applicant adequately demonstrated the availability of sufficient funds for the capital needs of the project.

In Form B, page 183, the applicant projects WakeMed Rehabilitation Hospital's Revenues will continue to exceed Expenses in each of the first three years of operation following completion of the proposed project. In Project Year 3 (FFY19) the applicant projects Revenue to exceed Expenses by $10,444,299, as shown in the table below.

Projected Revenue and Expenses for Rehabilitation Unit

		PY1	PY2	PY3

	FY11	FY17	FY18	FY19
Total Net Revenues	$36,313,322	$49,731,564	$51,911,051	$54,204,723
Total Expenses	$28,272,036	$40,213,803	$42,037,194	$43,760,424
Surplus (Deficit)	**$8,041,266**	**$9,517,761**	**$9,873,857**	**$10,444,299**

Furthermore the applicant projects the WakeMed System Revenue to continue to exceed Expenses in each of the first three years of operation following completion of the proposed project. In FFY11, WakeMed System Revenue exceeded Expenses by $39,646,000. In Project Year 3 (FFY19) the applicant projects WakeMed System Revenue to exceed Expenses by $82,346,000.

From Form B, page 187, total cost per patient day for the first two project years is shown in the table below:

Project Year 1	$1,225
Project Year 2	$1,260

[Total Cost Per Patient Day PY1 = Total Expenses / Total Patient Days
= 40,213,803 / 32,839 = 1,224.57]

In Form C, page 195, the applicant lists projected gross average charges for Project Year 1, which range from $2,266 for Self Pay/Indigent/Charity to $9,998 for Other and average $5,060. In Form D, page 197, the applicant lists projected average reimbursement rates, which range from $27 for Self Pay/Indigent/Charity to $4,432 for Other and average $1,514. See table below.

Projected Average Charges and Reimbursement Rates, Project Year 1, FFY17

	% of Total	Projected Avg. Charge	Projected Avg. Reimbursement Rate
Self Pay/Indigent/Charity	2.54%	$2,266	$27
Medicare/ Medicare Managed Care	55.54%	$5,068	$1.474
Medicaid	15.39%	$5,113	$667
Commercial Insurance	1.29%	$5,044	$1,695
Managed Care	23.89%	$5,025	$2,137
Other	1.36%	$9,998	$4,432
Total	**100.00%**	$5,060	$1,514

In Form B in the ProFormas Section, page 187, the applicant provides Gross Patient Revenue for FY11 of $95,805,386. Data provided by the Cecil G. Sheps Center using UB04 revenue codes for the rehabilitation unit show a similar amount - $88,132,919, 8% less than the amount reported by the applicant. The following table compares the applicant's Gross Revenue information from Form B compared to the Gross Revenue charges for the years 2007 – 2011, as reported to the Cecil G. Sheps Center by Truven Health Analytics.

	FFY07	FFY08	FFY09	FFY10	FFY11
Gross Revenues – UB04 *	$61,010,285	$73,505,813	$79,474,422	$84,940,714	$88,132,919
Gross Revenues Form B					$95,805,386

* Source: Cecil G. Sheps Center

Projected costs and revenues are based on reasonable assumptions, including projected utilization. See the pro forma financial statements in the application and Criterion (3) for utilization assumptions. The applicant adequately demonstrated that the financial feasibility of the proposal is based upon reasonable projections of costs and charges, and the application is conforming with this criterion.

Duke Raleigh - In Section VIII.1, the applicant projects that the capital cost for the project will be $4,172,000, which includes $2,313,400 in construction costs, $820,700 in equipment and furniture costs, $227,000 in consultant fees, and $810,900 in contingency fees. In Section VIII.2, the applicant states that the project will be financed with the accumulated reserves of Duke University Health System. In Section IX.1, the applicant projects no start-up expenses or initial operating expenses. In Exhibit 12 the applicant provides a letter from the Senior Vice President and Chief Financial Officer of Duke University Health System, which states, "*This will certify that Duke University Health System has as much as $4.5 million in accumulated reserves to devote to the development of a 12-bed inpatient rehabilitation unit at Duke Raleigh Hospital.*" Exhibit 11 contains the financial statements for Duke University Health System for the years 2011 and 2010. For the year ended June 30, 2011, the financial statements document that Duke University Health System had $225,458,000 in Cash and Cash Equivalents, $864,424,000 in Total Current Assets, $3,707,614,000 in Total Assets and $2,155,496,000 in Total Net Assets (Total Assets minus Total Liabilities). The applicant adequately demonstrated the availability of sufficient funds for the capital needs of the project.

The applicant projects revenues will exceed expenses in each of the first three years of operation following completion of the proposed project (Form B2). In Project Year 3 (FY17) the applicant projects Revenues to exceed Expenses by $2,095,422 for the proposed Rehabilitation Unit, as shown in the table below.

Projected Revenue and Expenses for Proposed Rehabilitation Unit

	Interim CY14	PY1 FY15	PY2 FY16	PY3 FY17
Total Net Revenue	$1,046,958	$4,648,920	$5,349,414	$5,684,811
Total Expenses	$1,474,684	$3,254,996	$3,462,976	$3,589,389
Surplus (Deficit)	**($427,727)**	**$1,393,924**	**$1,886,438**	**$2,095,422**

The applicant projects Duke University Health System Revenue to continue to exceed Expenses in each of the first three years of operation following completion of the proposed project (Form B). In Project Year 3 (FY17) the applicant projects Duke University Health System Revenue to exceed Expenses by $283,128,000.

From Forms B2 and C, total cost per patient day for the first two project years is shown in the table below:

Project Year 1	$ 984
Project Year 2	$ 913

[Total Cost Per Patient Day PY1 = Total Expenses / Total Patient Days
= (Total Direct Expenses + Total Indirect Expenses)/ 3,307
= (2,696,231 + 558,765) / 3,307 = 3,254,996 / 3,307 = 984.27]

In Form C, the applicant lists projected gross average reimbursement rates for Project Year 1, which range from $1,923 for Other to $10,043 for Commercial Insurance and average $3,335. In Form D, the applicant lists projected net reimbursement rates, which range from $0 for Self Pay/Indigent/Charity to $5,766 for Commercial Insurance and average $1,406. See table below.

Projected Average Charges and Reimbursement Rates, Project Year 1, FY15

	% of Total	Projected Avg. Charge	Projected Avg. Reimbursement Rate
Self Pay/Indigent/Charity	0.8%	$3,744	-
Medicare/ Medicare Managed Care	61.0%	$2,867	$1,129
Medicaid	14.4%	$3,730	$580
Commercial Insurance	1.2%	$10,043	$5,766
Managed Care	21.9%	$4,021	$2,540
Other	0.7%	$1,923	$769
Total	**100.00%**	$3,335	$1.406

Projected costs and revenues are based on reasonable assumptions, including projected utilization. See the pro forma financial statements in the application and Criterion (3) for utilization assumptions. The applicant adequately demonstrated that the financial feasibility of the proposed project is based on reasonable projections of costs and revenues. Consequently, the application is conforming with this criterion.

Johnston - In Section VIII.1, the applicant projects that the capital cost for the project will be $2,205,533, which includes $1,650,625 in construction costs, $98,700 in equipment and furniture costs, and $199,900 in architect, engineering, legal and regulatory fees, and $256,308 in interest and financing fees. In Section VIII.2, the applicant states that the project will be financed with Accumulated Reserves of Johnston Memorial Hospital Authority d/b/a Johnston Health. In Section IX.1, the applicant projects start-up expenses of $353,556 and initial operating expenses of $462,455 equaling total working capital requirements of $816,011. In Section IX.2, the applicant states that the working capital needs will be financed with Unrestricted Cash of Johnston Memorial Hospital Authority d/b/a Johnston Health. In Exhibit 28, the applicant provides a letter from the Chief Financial Officer of Johnston Health which states in part:

"Johnston Health will finance the capital costs of the project, estimated to be $2,205,533 with hospital reserves. Johnston Health will also finance the working capital needs of the project, not expected to exceed $820,000, with hospital reserves. As shown on page 11 of

the Audited Financials included with the Application, for FY 2011 Johnston Health has sufficient cash and assets limited as to use in reserves required for the capital and working capital costs of the inpatient rehabilitation bed project. While Johnston Health expects to fund the project with reserves, in the event that funding with bonds becomes a more cost-effective option, Johnston Health will seek bond financing. To this end, Johnston Health has included funds in the capital cost to cover financing for a bond issue."

Exhibit 29 contains the audited financial statements for Johnston Health for the year ended September 30, 2011, which document that Johnston Health had $5,431,016 in Cash and Cash Equivalents, $55,505,914 in Total Current Assets, $255,143,769 in Total Assets, and $76,359,329 in Total Net Assets (Total Assets minus Total Liabilities). The applicant adequately demonstrated the availability of sufficient funds for the capital needs of the project.

In Form B, page 165, the applicant projects Johnston Medical Center-Smithfield Inpatient Rehabilitation Unit's Revenues will exceed Expenses in each of the first full three years of operation following completion of the proposed project. In Project Year 1 (FFY15), the applicant projects Revenue to exceed Expenses by $77,037. In Project Year 3 (FFY17) the applicant projects Revenue to exceed Expenses by $784,136, as shown in the table below.

Projected Revenue and Expenses for Rehabilitation Unit

	Start-up Period 8/1/14 to 9/30/14	**PY1 FY15**	**PY2 FY16**	**PY3 FY17**
Total Net Revenues	-	$2,395,097	$3,136,286	$3,335,484
Total Expenses	$353,556	$2,318,060	$2,479,471	$2,551,348
Surplus (Deficit)	**($353,556)**	**$77,037**	**$656,816**	**$784,136**

From Form B, page 153, total cost per patient day for the first two project years is shown in the table below:

Project Year 1	$1,216
Project Year 2	$1,023

[Total Cost Per Patient Day PY1 = Total Expenses / Total Patient Days
= 2,318,060/ 1,906 = 1,216.19]

In Form C, page 166, the applicant lists projected gross average charges for Project Year 1, which range from $1,141 for Self Pay/Indigent/Charity to $1,951 for Commercial Insurance/Managed Care and average $1,754. In Form D, page 167, the applicant lists projected average reimbursement rates, which range from $884 for Medicaid to $1,679 for Medicare/Medicare Managed Care and average $1,441.

Projected Average Charges and Reimbursement Rates, Project Year 1, FFY15

	% of Total	**Projected Avg. Charge**	**Projected Avg. Reimbursement Rate**
Self Pay/Indigent/Charity	3.1%	$1,141	$1,141
Medicare/ Medicare Managed Care	60.2%	$1,780	$1,679
Medicaid	21.8%	$1,658	$884

Commercial Insurance/Managed Care	13.5%	$1,951	$1,364
Other	1.4%	$1,596	$1,277
Total	**100.00%**	$1,754	$1.441

However, the applicant's projected utilization is not based on reasonable and supported assumptions. Therefore, costs and revenues which are based on projected utilization are also unsupported and unreliable. See Criterion (3) for discussion of projections. As a result, the applicant failed to demonstrate that the financial feasibility of the proposed project is based on reasonable projections of costs and revenues. Consequently, the application is not conforming with this criterion.

(6) The applicant shall demonstrate that the proposed project will not result in unnecessary duplication of existing or approved health service capabilities or facilities.

C
UNC
WakeMed
Duke Raleigh

NC
Johnston

The 2012 SMFP identifies a need for twenty (20) inpatient rehabilitation facility beds in Health Service Area (HSA) IV to be awarded to an existing general acute care or rehabilitation hospital. In 2009 and 2010, HSA IV had the highest inpatient rehabilitation utilization of any HSA in North Carolina at 83.3% and 85.4%, respectively. In 2010, the other five HSAs ranged from 40.1% to 67.4% utilization. HSA IV currently has four providers, as shown below.

HSA IV Inpatient Rehabilitation Providers

Provider	**County**	**Beds**	**2010 Utilization**
Durham Regional Hospital	Durham	30	79.1%
University of North Carolina Hospitals	Orange	30	81.6%
WakeMed	Wake	98*	92.0%
Maria Parham Hospital	Vance	11	61.8%
Total HSA IV		169	85.4%

*84 licensed; 14 CON approved, not yet operational, 2012 SMFP

Four applications were received; none proposed more beds than identified in the SMFP. See Criterion (3) for discussion of need which is hereby incorporated by reference as if fully set forth herein.

UNC currently operates 30 inpatient rehabilitation beds with an average daily census of 24.9, or 83.1% occupancy. UNC is proposing to develop 12 additional rehabilitation beds for a total of 42 rehabilitation beds. The applicant adequately demonstrated the need for the proposed 12-bed addition. Therefore the applicant adequately demonstrates that the

development of 12 new inpatient rehabilitation beds will not unnecessarily duplicate existing health services and facilities. Therefore, the application is conforming with this criterion. See Criterion (3) for discussion of need which is hereby incorporated by reference as if fully set forth herein.

WakeMed currently operates 84 inpatient rehabilitation beds with an average daily census of 77.8, or 92.7% occupancy. In addition, WakeMed has been approved to add 14 additional rehabilitation beds for a total of 98 rehabilitation beds. Those beds are expected to become operational in 2013 and are projected to operate above 85% in 2013. WakeMed is proposing to develop 12 additional rehabilitation beds for a total of 110 rehabilitation beds. In addition, WakeMed also proposes to replace 29 beds that are currently in semi-private rooms. At completion of this project, all of WakeMed's inpatient rehabilitation beds will be in private rooms. WakeMed's occupancy has been over 90% since 2002 and over 89% since 2000, even with the addition of 16 beds during the years 2007 through 2009. The applicant adequately demonstrates that the development of 12 new inpatient rehabilitation beds will not unnecessarily duplicate existing health services and facilities. Therefore, the application is conforming with this criterion. See Criterion (3) for discussion of need which is hereby incorporated by reference as if fully set forth herein.

Duke Raleigh is proposing to develop a new 12-bed IRF, which would be the second rehabilitation facility in Wake County. The applicant projects 78% of its patients will come from Wake, Johnston and Franklin counties. Duke Raleigh adequately demonstrates that the development of 12 new inpatient rehabilitation beds will not unnecessarily duplicate existing health services and facilities. Therefore, the application is conforming with this criterion. See Criterion (3), which is hereby incorporated by reference as if fully set forth herein, for discussion of need.

Johnston is proposing to develop a new 8-bed IRF in Johnston County in the southeastern portion of HSA IV. Johnston proposes serving a greater share of Johnston County rehabilitation cases than acute care inpatient cases. The applicant did not adequately demonstrate the need for the proposed 8-bed project was based on reasonable assumptions and projections of utilization. See Criterion (3), which is hereby incorporated by reference as if fully set forth herein, for discussion of need. Therefore, the applicant failed to adequately demonstrate that the development of 8 new inpatient rehabilitation beds will not unnecessarily duplicate existing health services and facilities. Therefore, the application is not conforming with this criterion.

(7) The applicant shall show evidence of the availability of resources, including health manpower and management personnel, for the provision of the services proposed to be provided.

C
UNC
WakeMed
Duke Raleigh

Johnston

UNC – In table VII.1, page 102, the applicant identifies 84.8 FTE positions that UNC currently has in its rehabilitation unit, and in Table VII.2, the applicant projects to employ 111.1 FTEs during the second operating year following completion of the proposed project. In Section VII.3, page 104, the applicant states that the increase in FTEs results from incremental staff additions, not new positions. In Section VII.6, the applicant states that Michael Lee, MD, Chair of the Department of Physical Medicine and Rehabilitation and the current Medical Director of the Rehabilitation Program, will continue as medical director. Exhibit 9 contains a letter from Dr. Lee expressing his willingness to continue as the medical director. In Section II, pages 22-23, the applicant discusses existing staff. Exhibit 11 contains the resume of the administrative director and curricula vitae of medical staff. In Section VII.3, pages 104-105 the applicant states:

> *"The Department of Physical Medicine and Rehabilitation (UNC School of Medicine) will continue to provide attending physicians, physiatrists, psychologists, medical residents, and other health professionals. Six Physical Medicine and Rehabilitation physicians, a psychologist and a neuropsychologist are directly involved in the Inpatient Rehabilitation Center. The Department of Physical Medicine and Rehabilitation is authorized to add one physiatrist and three additional residents …"*

The applicant demonstrates the availability of adequate health manpower and management personnel for the proposed services. Therefore, the application is conforming with this criterion.

WakeMed – In Table VII.1, pages 152-153, the applicant identifies 259.63 FTE positions that WakeMed currently has in its rehabilitation unit. In Table VII.2A, the applicant projects to employ 277.08 FTEs during FY13 following the completion of Project ID # J-8631-11 when 14 new beds become operational. In Table VII.2B, the applicant projects to employ 305.46 FTE positions following the second operating year following completion of the proposed project. In Section VII.3, pages 157-158, the applicant provides a list of the 28.38 additional FTEs that will result from the proposed project. Tables VII.I and VII.II do not include the Physiatry contract services of Dr. O'Brien and Carolina Rehabilitation and Surgical Associates (discussed in Section II.2, page 32, 39 and 54-55). However Form B, page 187, includes Professional Fees of $565,180 for FFY11 and projects $900,882 in Professional Fees for the second operating year following completion of the proposed project. In Section VII.6, the applicant states that Patrick J. O'Brien, MD, current Medical Director of WakeMed Rehabilitation, will continue as medical director. Attachment 29 contains a letter from Dr. O'Brien expressing his willingness to continue to serve as the medical director. In Section II, page 52, the applicant discusses existing administrative and medical staff, including their inpatient rehabilitation experience. Attachment 17 contains the curricula vitae for the rehabilitation hospital administrators and medical staff. The applicant demonstrates the availability of adequate health manpower and management personnel for the proposed services. Therefore, the application is conforming with this criterion.

Duke Raleigh - Duke Raleigh does not currently provide inpatient rehabilitation services, therefore there is no data in Table VII.1 on existing staff. In Table VII.2, page 56, the

applicant projects to employ 33.42 FTEs and 1,117 contract hours for the proposed IRF during the second operating year (FY16).

In Section VII.6, the applicant states that Dr. Greg Bentley, a physiatrist with Piedmont Spine Specialists has expressed interest in serving as medical director of the proposed IRF at Duke Raleigh. Exhibit 8 contains the medical director's job description, a letter from Dr. Bentley affirming his interest in providing medical director services for the proposed project and his curriculum vitae. In Section II.7, page 28, Section VII.3, pages 132-133, and Exhibits 8, 15, 16 and 17 the applicant discusses existing staff that have inpatient rehabilitation experience as well as the resources available to Duke Raleigh as a member of DUHS. The applicant demonstrates the availability of adequate health manpower and management personnel for the proposed services. Therefore, the application is conforming with this criterion.

Johnston - Johnston does not currently provide inpatient rehabilitation services, therefore there is no data on existing staff. In Table VII.1[2], pages 138-139, the applicant projects to employ 14.75 FTEs and a total of 3,120 contract hours for the proposed IRF during the second operating year following completion of the proposed project. In Section VII.6, the applicant states that Michael Lee, MD, the current Medical Director of UNC's Rehabilitation Program, has expressed his willingness and intent to provide medical director services, or to designate a medical director for Johnston's proposed project. Exhibit 6 contains Dr. Lee's curriculum vitae as well as a letter from Dr. Lee expressing his willingness to provide medical director services or to designate a medical director for Johnston. In Section VII.3, pages 139-140, the applicant states that the increase in FTEs results from incremental staff additions, not new positions. The applicant demonstrates the availability of adequate health manpower and management personnel for the proposed services. Therefore, the application is conforming with this criterion.

(8) The applicant shall demonstrate that the provider of the proposed services will make available, or otherwise make arrangements for, the provision of the necessary ancillary and support services. The applicant shall also demonstrate that the proposed service will be coordinated with the existing health care system.

C
UNC
WakeMed
Duke Raleigh
Johnston

UNC - In Section II.2(e), pages 15-19, and Section II.3-4, pages 30-32, the applicant lists all of the necessary ancillary and support services that UNC currently provides on site and identifies the services, such as vocational rehabilitation, orthotics and prosthetics, which are accessed through either DHHS or external vendors. Exhibit 3 contains a letter confirming the availability of UNC Hospitals' ancillary and support services for the operation of the hospitals, including the Inpatient Rehabilitation Center. In Exhibit 13, the applicant provides letters from 28 UNC physicians indicating their support for the proposed 12-bed addition to the rehabilitation unit at UNC. Exhibits 13 and 14 contain 8 letters of support from other providers and the

community. Exhibit 10 contains a sample transfer agreement and a listing of facilities that have current transfer agreements with UNC. Exhibit 14 contains documentation from five hospitals that referral relationships already exist. The applicant adequately demonstrates that the proposed project will be coordinated with the existing health care system, and that the necessary ancillary and support services will be available. Therefore, the application is conforming with this criterion.

WakeMed - In Section II.2(e), pages 22-37 and Section II.3-4, pages 37-40, the applicant lists all of the necessary ancillary and support services that WakeMed currently provides on site and identifies the services, such as vocational rehabilitation, orthotics and prosthetics, which are accessed through either DHHS or external vendors. Attachment 8 contains a letter confirming the availability of WakeMed's ancillary and support services for the Rehabilitation Hospital. Attachment 9 contains letters from independent contractors verifying their services. In Attachment 36, the applicant provides letters from 146 physicians and 29 members of the community indicating their support for the proposed 12-bed addition to the rehabilitation unit at WakeMed. Attachment 20 contains sample transfer agreements from area acute care hospitals. The applicant adequately demonstrates that the proposed project will be coordinated with the existing health care system, and that the necessary ancillary and support services will be available. Therefore, the application is conforming with this criterion.

Duke Raleigh - In Section II.2-4, pages 8-19, and Section II.7, pages 26-39, the applicant lists all of the necessary ancillary and support services that Duke Raleigh currently provides on site and identifies the services, such as vocational rehabilitation, orthotics and prosthetics, which are accessed through either DHHS or external vendors. In Exhibit 15, the applicant provides letters from 49 physicians indicating their support for the proposed 12-bed rehabilitation unit at Duke Raleigh. Exhibit 15 also contains letters of support from 3 area acute care hospitals, and a number of support agencies, other local providers and community partners. Exhibit V.3 contains a sample acute care hospital transfer agreement. Exhibit 7 contains a listing of facilities with which Duke Raleigh has referral and transfer agreements. The applicant adequately demonstrates that the proposed project will be coordinated with the existing health care system, and that the necessary ancillary and support services will be available. Therefore, the application is conforming with this criterion.

Johnston - In Section II.2(e), pages 15-23, and Section II.3-4, pages 27-28, the applicant lists all of the necessary ancillary and support services that Johnston currently provides on site, the services UNC will provide, and identifies the services, such as vocational rehabilitation, orthotics and prosthetics, which are accessed through either DHHS or other external vendors. Exhibit 13 contains a letter confirming the availability of Johnston's ancillary and support services for the proposed IRF. Exhibit 8 contains letters from independent contractors verifying their services. In Exhibit 30, the applicant provides letters from 48 physicians who indicated their support for a similar project filed in 2011 for a proposed 8-bed rehabilitation unit at Johnston (Project ID #J-8629-11). Exhibit 31 contains letters from 26 physicians who indicate their support for the currently proposed 8-bed rehabilitation unit at Johnston. Some of the physicians submitted a support letter in both 2011 and 2012; some only in one of the two years. Exhibit 17 contains letters to potential referring facilities and transfer agreements with 6 acute care hospitals and 5 nursing facilities. Exhibit 26 contains letters to potential clinical training

programs and agreements with 4 training programs. The applicant adequately demonstrates that the proposed project will be coordinated with the existing health care system, and that the necessary ancillary and support services will be available. Therefore, the application is conforming with this criterion.

(9) An applicant proposing to provide a substantial portion of the project's services to individuals not residing in the health service area in which the project is located, or in adjacent health service areas, shall document the special needs and circumstances that warrant service to these individuals.

NA

(10) When applicable, the applicant shall show that the special needs of health maintenance organizations will be fulfilled by the project. Specifically, the applicant shall show that the project accommodates: (a) The needs of enrolled members and reasonably anticipated new members of the HMO for the health service to be provided by the organization; and (b) The availability of new health services from non-HMO providers or other HMOs in a reasonable and cost-effective manner which is consistent with the basic method of operation of the HMO. In assessing the availability of these health services from these providers, the applicant shall consider only whether the services from these providers:

(i) would be available under a contract of at least 5 years duration;
(ii) would be available and conveniently accessible through physicians and other health professionals associated with the HMO;
(iii) would cost no more than if the services were provided by the HMO; and
(iv) would be available in a manner which is administratively feasible to the HMO.

NA

(11) Repealed effective July 1, 1987.

(12) Applications involving construction shall demonstrate that the cost, design, and means of construction proposed represent the most reasonable alternative, and that the construction project will not unduly increase the costs of providing health services by the person proposing the construction project or the costs and charges to the public of providing health services by other persons, and that applicable energy saving features have been incorporated into the construction plans.

NA
UNC
Duke Raleigh
Johnston

C
WakeMed

UNC proposes to renovate 5,581 square feet of existing space on the Seventh Floor Original Hospital and the Seventh Floor Bed Tower. It does not propose any new construction.

WakeMed proposes to construct 69,794 square feet of new space on the main campus adjoining the current facility for the proposed 12 additional inpatient rehabilitation beds and the relocation of 29 currently licensed beds operating in semi-private rooms in the current facility, to private rooms, and to renovate 5,000 square feet of existing space in the current facility where the current and proposed buildings will join. Attachment 30 contains a cost certification letter from an architect which states:

> *"This is to certify that I have reviewed the Construction Costs for the referenced project.*
>
> *Based on my review and comparison of this project with similar projects, I believe the costs indicated are a reasonable estimate of the costs to be expected on a project of the scope defined. The 'Anticipated Construction Cost of' $19,710,890 combined with the associated 'Soft Costs' of $5,523,161 to create a* ***Total Project Budget for the WakeMed Rehabilitation Hospital, Forty-One Bed Inpatient Rehab Project of $25,234,051****."* [Emphasis in original.]

The architect's estimate is consistent with the applicant's projected capital costs for construction contained in Section VIII.1, page 163, and shown below.

Proposed Project Capital Costs

Site Preparation	$1,985,000	
Materials	$7,170,295	
Labor	$8,763,695	
Contingency	$1,791,900	
Construction Contract Sub-Total		**$17,725,890**
Equipment/Furniture	$1,475,000	
Architect & Engineering Fees	$1,612,709	
Other Consultant Fees	$750,000	
Financing Costs	$970,540	
Contingency	$714,912	
Miscellaneous Sub-Total		**$5,523,161**
Total Capital Cost		**$25,234,051**

The line drawings and project site plans are contained in Attachments 34 and 35. In Section XI.5, page 174, the applicant states:

> *"All new and renovation designs will meet the 2012 North Carolina Energy Code which requires inclusion of energy efficient items such as lighting ballasts, sustainable materials, low-flow water devices such as sinks and toilets, and air handling systems.*
> *…*
> *The project will be served by the recently completed Central Plant facility at the Raleigh Campus, which has energy efficient chillers for the chilled water system and high efficiency air handlers. The new Central Plant replaced a facility that was more than 30 years old, and which utilized outdated equipment."*

The applicant adequately demonstrates that the cost, design and means of construction represent the most reasonable alternative for the project it proposes, and that the construction cost will not unduly increase costs and charges for health services, and that applicable energy saving features have been incorporated into the construction plans. See Criterion (5) for discussion of costs and charges. The application is conforming to this criterion.

Duke Raleigh proposes to renovate 15,025 square feet of existing space on the third floor for the proposed 12-bed project. It does not propose new construction.

Johnston proposes to renovate 9,097 square feet of existing space on the third floor of the original hospital building for the proposed 8-bed rehabilitation unit. It does not propose new construction.

(13) The applicant shall demonstrate the contribution of the proposed service in meeting the health-related needs of the elderly and of members of medically underserved groups, such as medically indigent or low income persons, Medicaid and Medicare recipients, racial and ethnic minorities, women, and handicapped persons, which have traditionally experienced difficulties in obtaining equal access to the proposed services, particularly those needs identified in the State Health Plan as deserving of priority. For the purpose of determining the extent to which the proposed service will be accessible, the applicant shall show:

(a) The extent to which medically underserved populations currently use the applicant's existing services in comparison to the percentage of the population in the applicant's service area which is medically underserved;

C
UNC
WakeMed
Duke Raleigh
Johnston

The Division of Medical Assistance (DMA) maintains a website which offers information regarding the number of persons eligible for Medicaid assistance and estimates of the percentage of uninsured for each county in North Carolina. The following table illustrates those percentages for Johnston, Orange and Wake Counties and statewide.

	Total # of Medicaid Eligibles as % of Total Population	**Total # of Medicaid Eligibles Age 21 and older as % of Total Population**	**% Uninsured CY 2008-2009***
Statewide	16.5%	6.7%	19.7%
County:			
Johnston	17.4%	6.7%	20.0%
Orange	8.6%	3.5%	18.9%

Wake	9.8%	3.3%	18.4%

*Source: Cecil G. Sheps Center

The majority of Medicaid eligibles are children under the age of 21. This age group does not utilize the same health services at the same rate as older segments of the population, particularly the services offered by Inpatient Rehabilitation Facilities.

The payor mix for rehabilitation facilities in part is tied to the services offered and the case mix of patients served. Patients being treated for strokes and orthopaedics are largely Medicare recipients. Pediatric patients and patients receiving care for traumatic injuries are more likely to be or become Medicaid recipients.

The Office of State Budget & Management (OSBM) maintains a website which provides historical and projected population data for each county in North Carolina. In addition, data is available by age, race or gender. However, a direct comparison to the applicant's current payor mix would be of little value. The population data by age, race or gender does not include information on the number of elderly, minorities or women utilizing health services. Furthermore, OSBM's website does not include information on the number of handicapped persons.

Annual data provided by the Cecil G. Sheps Center reports that 23 inpatient rehabilitation facilities in North Carolina had the following payor mix during the five year period FFY07 - FFY11. Although the Commercial/HMO percentage has increased 4 percentage points over the four-year period, Medicare decreased correspondingly (5 percentage points) over the same period.

Payor	**FFY07**	**FFY08**	**FFY09**	**FFY10**	**FFY11**	**Avg. FFY07-FFY11**
Commercial/ HMO	20%	23%	23%	25%	24%	23%
Medicaid	10%	11%	11%	10%	11%	11%
Medicare	63%	60%	61%	59%	58%	60%
Other	4%	3%	3%	3%	3%	3%
Uninsured	3%	2%	2%	3%	3%	3%
Total	100%	100%	100%	100%	100%	100%

The following table shows the Uninsured portion of payor mix in Johnston, Orange and Wake Counties for acute care hospitals in 2010, as well as the state average for both acute care hospitals and for the rehabilitation inpatient portion.

	Payor Mix % Uninsured FFY 2010 Acute Care Hospitals	**Payor Mix % Uninsured FFY 2011 Rehabilitation Inpatients***
Statewide	6.4%	3.1%

County:		
Johnston	7.8%	
Orange	12.0%	
Wake	5.0%	

*Source: Cecil G. Sheps Center

UNC – In Section VI.11, page 100, the applicant provides the FY11 payor mix, as illustrated below:

UNC Payor Mix - FY11

Payor Category	**Patient Days as % of Total**	
	Inpatient Rehabilitation Beds	**Total Hospital Inpatient Beds***
Self Pay/Indigent/Charity	7.4%	6.4%
Medicare/Medicare Managed Care	44.9%	29.7%
Medicaid	22.1%	30.3%
Commercial Insurance	3.4%	1.0%
Managed Care	19.1%	26.4%
Other	2.2%	6.2%
Total	**100. 0%**	**100. 0%**

*Excluding Newborn and Inpatient Rehabilitation

The applicant demonstrated that medically underserved populations currently have adequate access to existing inpatient services. The application is conforming with this criterion.

WakeMed – In Section VI.11, page 150, the applicant provides the current payor mix for inpatient rehabilitation services as well as other inpatient services, as illustrated below:

WakeMed Payor Mix - FFY11

Payor Category	**Patient Days as % of Total**	
	Licensed Inpatient Rehabilitation Beds	**Other Licensed Inpatient Beds**
Self Pay/Indigent/Charity	1.18%	4.71%
Medicare/Medicare Managed Care	55.54%	47.06%
Medicaid	15.39%	25.72%
Commercial Insurance	1.29%	0.96%

Managed Care	23.89%	19.46%
Other Govt, Work. Comp, Hosp. Sponsored	2.71%	2.09%
Total	**100. 00%**	**100. 00%**

The applicant demonstrated that medically underserved populations currently have adequate access to existing inpatient services. The application is conforming with this criterion.

Duke Raleigh – Duke Raleigh does not currently provide inpatient rehabilitation services. However, the hospital provides acute care services. In Section VI.11, page 128, the applicant provides the current payor mix for acute care inpatient services, as illustrated below:

Duke Raleigh Acute Care Payor Mix - FY11

Payor Category	Patient Days as % of Total
Self Pay	3.0%
Medicare	58.6%
Medicaid	9.8%
Commercial Insurance	1.4%
Managed Care	24.4%
Other Government	2.8%
Total	**100. 0%**

The applicant demonstrated that medically underserved populations currently have adequate access to existing acute care inpatient services. The application is conforming with this criterion.

Johnston – Johnston does not currently provide inpatient rehabilitation services. However, the hospital provides acute care services. In Section VI.11, page 135, the applicant provides the current payor mix for acute care inpatient services, as illustrated below:

Johnston Acute Care Payor Mix- FFY11

Payor Category	Patient Days as % of Total
Self Pay/Indigent/Charity	5.8%
Medicare/Medicare Managed Care	62.3%
Medicaid	17.0%
Managed Care/ Commercial Insurance	14.9%
Other	0.0%
Total	**100. 0%**

The applicant demonstrated that medically underserved populations currently have adequate access to existing acute care inpatient services. The application is conforming with this criterion.

(b) Its past performance in meeting its obligation, if any, under any applicable regulations requiring provision of uncompensated care, community service, or access by minorities and handicapped persons to programs receiving federal assistance, including the existence of any civil rights access complaints against the applicant;

C
UNC
WakeMed
Duke Raleigh
Johnston

UNC – Recipients of Hill-Burton funds were required to provide uncompensated care, community service and access by minorities and handicapped persons. In Section VI.10, page 100, the applicant states:

"UNC Hospitals has long since satisfied its 'free care' obligation under the Hill-Burton Act."

In Section VI.9, page 99, the applicant states that no civil rights access complaints have been filed against UNC Hospitals or any of the facilities or services owned by the hospital in the last five years. The application is conforming to this criterion.

WakeMed – Recipients of Hill-Burton funds were required to provide uncompensated care, community service and access by minorities and handicapped persons. In Section VI.10, page 149, the applicant states:

"WakeMed has no obligation under any applicable Federal regulation to provide uncompensated care and community service. Under Federal EMTALA regulations, WakeMed cannot turn away a patient who needs emergency care. WakeMed provided $264 million in uncompensated care during Fiscal Year 2011, as well as $41 million in bad debt."

In Section VI.9, page 149, the applicant states that no civil rights access complaints have been filed against WakeMed in the last five years. The application is conforming to this criterion.

Duke Raleigh – In Section VI.10, page 127, the applicant states:

"DRAH is not obligated under federal regulations to provide uncompensated care, community service, or access by minorities or handicapped persons. For example, DRAH does not have any Hill-Burton uncompensated care requirements. However, as previously stated, DRAH does not discriminate based

on race, ethnicity, creed, color, sex, age, religion, national origin, handicap, or ability to pay. DRAH will continue to provide healthcare service and access for all persons, without federal obligation. DRAH will continue to provide charity care and other services to the community as previously described in Section VI."

In Section VI.9, page 53, the applicant states that no civil rights access complaints have been filed by patients against Duke University Health System or any of the facilities comprising Duke University Health System in the last five years. The application is conforming to this criterion.

Johnston - Recipients of Hill-Burton funds were required to provide uncompensated care, community service and access by minorities and handicapped persons. In Section VI.10, page 134, the applicant states:

"Not applicable. With the exception of Federal EMTALA laws, Johnston Health has had no other obligation under federal regulations (such as provisions under the Hill-Burton Act) to provide uncompensated care."

In Section VI.9, page 133, the applicant states that no civil rights access complaints have been filed against Johnston Health in the last five years. The application is conforming to this criterion.

(c) That the elderly and the medically underserved groups identified in this subdivision will be served by the applicant's proposed services and the extent to which each of these groups is expected to utilize the proposed services; and

C
UNC
WakeMed
Duke Raleigh
Johnston

Data provided by the Cecil G. Sheps Center reports that 23 IRFs in North Carolina had the following payor mix during the five year period FFY07- FFY11. Although the Commercial/HMO percentage has increased 4 percentage points over the four-year period, Medicare decreased correspondingly (5 percentage points) over the same period.

Payor	**FFY07**	**FFY08**	**FFY09**	**FFY10**	**FFY11**
Commercial/ HMO	20%	23%	23%	25%	24%
Medicaid	10%	11%	11%	10%	11%
Medicare	63%	60%	61%	58%	58%
Other	4%	3%	3%	3%	3%
Uninsured	3%	2%	2%	3%	3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

UNC - In Section VI.12, page 101, the applicant states: *"The projected payor percentages are expected to be the same as FY 2011 payor percentages."* The following table illustrates the projected payor mix for the existing rehabilitation unit in the second full operating year of the proposed project.

UNC Projected Inpatient Rehabilitation Payor Mix - FY16

Payor Category	Patient Days as % of Total
Self Pay/Indigent/Charity	7.4%
Medicare/Medicare Managed Care	44.9%
Medicaid	22.1%
Commercial Insurance	3.4%
Managed Care	19.1%
Other	2.2%
Total	**100. 0%**

The applicant demonstrates that medically underserved populations would have adequate access to the proposed inpatient rehabilitation services. Therefore, the application is conforming to this criterion.

WakeMed - In Section VI.12, page 151, the applicant states that it used the FY12 payor mix for inpatient services at WakeMed Rehabilitation Hospital as the basis for the project projections. The following table illustrates the projected payor mix for the existing rehabilitation unit in the second full operating year of the proposed project.

WakeMed Projected Inpatient Rehabilitation Payor Mix - FFY18

Payor Category	Patient Days as % of Total
Self Pay/Indigent/Charity	2.54%
Medicare/Medicare Managed Care	55.54%
Medicaid	15.36%
Commercial Insurance	1.28%
Managed Care	23.89%
Other -Other Govt, Work. Comp, Hosp. Sponsored	1.36%
Total	**100. 00%**

The applicant demonstrates that medically underserved populations would have adequate access to the proposed inpatient rehabilitation services. Therefore, the application is conforming to this criterion.

Duke Raleigh - In Section VI.12, page 129, the applicant states that the projected payor mix is based on the current inpatient rehabilitation payor mix at Durham Regional Hospital, the current payor mix of Duke Raleigh's patients who were appropriate for inpatient rehabilitation and information provided by Community Care of North Carolina which manages referrals of Carolina Access Medicaid patients to Duke Raleigh. The following table illustrates the projected payor mix for the proposed rehabilitation unit in the second full operating year.

Duke Raleigh Projected Inpatient Rehabilitation Payor Mix - FY16

Payor Category	Patient Days as % of Total

Self Pay	0.8%
Medicare	61.5%
Medicaid	14.4%
Commercial Insurance	1.2%
Managed Care	21.4%
Other	0.7%
Total	**100. 0%**

The applicant demonstrates that medically underserved populations would have adequate access to the proposed inpatient rehabilitation services. Therefore, the application is conforming to this criterion.

Johnston - In Section VI.12, pages 135-136, the applicant states that *"Johnston Health assumes that its inpatient rehabilitation payor mix will represent the historical mix of Johnston County inpatient rehabilitation patient days"* regardless of where those inpatient rehabilitation days were spent. The following table illustrates the projected payor mix for the proposed rehabilitation unit in the second full operating year and represents the FY11 mix of rehabilitation patient days for Johnston County residents by payor.

Johnston Projected Inpatient Rehabilitation Payor Mix - FY16

Payor Category	Patient Days as % of Total
Self Pay/Indigent/Charity	3.1%
Medicare/Medicare Managed Care	60.2%
Medicaid	21.8%
Managed Care/ Commercial Insurance	13.5%
Other- TRICARE, Work. Comp., Govt.	1.4%
Total	**100. 0%**

The applicant demonstrates that medically underserved populations would have adequate access to the proposed inpatient rehabilitation services. Therefore, the application is conforming to this criterion.

(d) That the applicant offers a range of means by which a person will have access to its services. Examples of a range of means are outpatient services, admission by house staff, and admission by personal physicians.

C
UNC
WakeMed
Duke Raleigh
Johnston

UNC - In Section VI.5, page 95 and Section VI.8, pages 96-99, the applicant states that patients will continue to have access to its inpatient rehabilitation services by the following means: referrals from personal physicians and members of the staff, as well as self referral. The application is conforming with this criterion.

WakeMed - In Section VI.8, pages 145-148, the applicant states that patients will continue to have access to its inpatient rehabilitation services by the following means: referrals from physicians, other health care providers and other facilities, as well as self referral. The application is conforming with this criterion.

Duke Raleigh - In Section VI.8, pages 124-125, the applicant states that patients will have access to its proposed inpatient rehabilitation services by the following means: referrals from physicians, other internal clinical services, and other acute care facilities. The application is conforming with this criterion.

Johnston - In Section VI.8, pages 132-133, the applicant states that patients will have access to its proposed inpatient rehabilitation services by the following means: referrals from physicians and other acute care facilities, as well as self referral. The application is conforming with this criterion.

(14) The applicant shall demonstrate that the proposed health services accommodate the clinical needs of health professional training programs in the area, as applicable.

C
UNC
WakeMed
Duke Raleigh
Johnston

UNC - In Section V.1, pages 87-89, the applicant states:

"The Inpatient Rehabilitation Program at UNC Hospitals is CARF (Commission on Accreditation of Rehabilitation Facilities) accredited and operated as a comprehensive inpatient rehabilitation unit within the academic medical teaching hospital environment. The program is currently used for rotations and educational experiences for multiple health professional training programs and will continue to be used for such purposes in the future.

The Inpatient Rehabilitation Unit is essential to the Physical Medicine and Rehabilitation residency program, currently serving twelve medical residents as explained in Exhibit 16. There are only three PM&R residency programs in North Carolina: Carolinas Medical Center in Charlotte, East Carolina University in Greenville and the University of North Carolina at Chapel Hill. With the proposed expansion of Inpatient Rehabilitation from 30 to 42 beds, the PM&R Department will add one new MD faculty / attending position and three new PM&R residents."

The applicant states that it also serves as a training site for physical, occupational and recreational therapy students as well as for physical and occupational therapy assistants. The applicant provides a list in Section V.1 of the colleges and universities with whom the

hospital has a training relationship. The information provided is reasonable and credible and supports a finding of conformity with this criterion.

WakeMed - In Section V.1, pages 123-127, the applicant states that WakeMed is currently used for many health professional training programs. The applicant provides a list in Section V.1 and Attachment 19, of the colleges and universities, both inside and outside of North Carolina, with whom the hospital has a training relationship. Job-shadowing opportunities are provided for students at Enloe High School and Wake Early College of Health and Sciences through a partnership with Wake County Public School System. The applicant reports that Wake Area Health Education Center (AHEC), located on WakeMed's Raleigh campus, sponsors and coordinates continuing education programs for health professionals in a nine-county region consisting of Durham, Franklin, Granville, Johnston, Lee, Person, Vance, Wake and Warren counties. The applicant continues, *"Wake AHEC is the largest, off-site teaching program for the University of North Carolina (UNC) School of Medicine."* In addition, the applicant's Raleigh campus is *"a major teaching site for UNC- and ECU-based residency programs approved by the AMA's Accreditation Council for Graduate Medical Education."* The applicant discusses faculty, clinic facilities, and a conference center that includes human patient simulators provided on the Raleigh campus. The Center for Integrative Learning utilizes twenty-four human patient simulators that can bleed, cry, breathe and die. The information provided is reasonable and credible and supports a finding of conformity with this criterion.

Duke Raleigh - In Section V.1, pages 106-110, the applicant states that Duke Raleigh is currently *"a training site for many health professional programs, both local and nationally"* including nursing, sports medicine, pharmacy, and physical therapy. The applicant provides a list in Section V.1 and Exhibit 6, of the colleges, universities and other professional training organizations with whom the hospital has a training relationship. In addition, the applicant has contacted local health professional training programs regarding the potential for providing a site to accommodate or expand their clinical training needs. The information provided is reasonable and credible and supports a finding of conformity with this criterion.

Johnston - In Section V.1, pages 118-119, the applicant states that Johnston has many long-standing relationships with clinical training programs, including nursing, physical therapy, cardiology, rheumatology, radiologic technology, allied health science and phlebotomy. The applicant provides a list in Section V.1 and Exhibit 26, of the colleges and universities with whom the hospital has a training relationship. In addition, the applicant has contacted local health professional training programs regarding options for their clinical training needs. A local school, Campbell University, plans to establish a School of Osteopathic Medicine, which the applicant has endorsed and offered to partner with in providing clinical training. The information provided is reasonable and credible and supports a finding of conformity with this criterion.

(15) Repealed effective July 1, 1987.
(16) Repealed effective July 1, 1987.
(17) Repealed effective July 1, 1987.
(18) Repealed effective July 1, 1987.

(18a) The applicant shall demonstrate the expected effects of the proposed services on competition in the proposed service area, including how any enhanced competition will have a positive impact upon the cost effectiveness, quality, and access to the services proposed; and in the case of applications for services where competition between providers will not have a favorable impact on cost-effectiveness, quality, and access to the services proposed, the applicant shall demonstrate that its application is for a service on which competition will not have a favorable impact.

NC
UNC
Johnston

C
WakeMed
Duke Raleigh

UNC proposes to develop 12 additional inpatient rehabilitation beds at its existing location in Orange County, in HSA IV for a total of 42 beds on the seventh floor of **UNC's** original hospital and renovate ancillary and support space.

In Section V, pages 91-92, UNC discusses the impact of the proposed project on competition in the service area as it relates to promoting cost-effectiveness, quality and access. The applicant states the project is designed to enhance patient care, advance the cost effectiveness and quality of rehabilitation services and assist UNC in meeting its mission of patient care, teaching, research and community service. In addition, the applicant states that the proposed project will:

- Promote improved patient access because of additional beds,
- Enhance cost effectiveness by improving operational efficiency and spreading fixed costs over a larger number of beds,
- Ensure quality of rehabilitation services through continued quality programs and physician training, and
- Continue its obligation to accept any North Carolina citizen requiring treatment.

In Section II.6, page 33, the applicant further describes the methods used to ensure and maintain quality care. In Section VI.2, page 93, Section VI.4, pages 94-95 and Section VI.5, page 95, the applicant further discusses how the proposed project would impact access to inpatient rehabilitation services. The applicant adequately demonstrated that it will provide quality services; and it will provide adequate access to the proposed services.

However, the applicant, in Section V, failed to demonstrate that the financial feasibility of the proposed project is based on reasonable projections of costs and revenues therefore; the applicant does not adequately demonstrate that the expected effects of the proposal on competition include a positive impact on cost-effectiveness. See Criterion (5) for discussion

regarding projections of costs and revenues which is hereby incorporated as if fully set forth herein.

The applicant's Gross Revenue is not supported and not credible. Specifically the 88% discrepancy between gross revenue provided by the applicant and that publically available from the Cecil G. Sheps Center.

Therefore the application is non-conforming to this criterion.

WakeMed proposes to develop 12 new inpatient rehabilitation beds in newly constructed space on the WakeMed Raleigh Campus in Wake County, in HSA IV for a total of 110 inpatient rehabilitation beds, including 14 beds that have been approved but are not yet operational. WakeMed also proposes to relocate 29 licensed beds that are housed in semi-private rooms in the current facility to the new space. In Section V, pages 130-133, WakeMed explains how the proposed project will foster competition in the service area as it relates to promoting cost-effectiveness, quality and access. The applicant states that increasing bed capacity and converting semi-private rooms to private rooms enhances consumer access to WakeMed Rehab Hospital which has been constrained because of high occupancy rates. The applicant further states:

> *"With 110 licensed rehabilitation beds, WakeMed Rehab Hospital can spread its support and overhead costs over a larger patient base.*
> …
> *Awarding these additional rehabilitation beds to WakeMed further enhances cost effectiveness and capability of caring for high complexity, high expense, and low reimbursement patients typically associated with Level I Trauma Centers.*
> …
> *The proposed project will be an expansion of WakeMed Rehab Hospital's Joint Commission- and CARF-accredited facility. An increase in bed capacity will enhance accessibility to services, and allow patients with qualifying conditions to be admitted to therapy sooner, thereby accelerating their recovery time.*
>
> *As one of the largest inpatient rehabilitation facilities in North Carolina, WakeMed Rehab Hospital has the resources to offer a range of quality initiatives that is difficult to duplicate in smaller programs.*
> …
> *Additional rehabilitation beds at WakeMed Rehab Hospital will decrease the number of patients whose admission to the Rehab Hospital must be delayed due to lack of available beds. …Also, increasing the number of beds will allow WakeMed Rehab Hospital to accept a higher number of "non-qualifying" patients, whose conditions do not meet the criteria of CMS' '60 Percent Rule.' Because WakeMed Rehab Hospital can spread these patients over a larger number of beds, a higher number of patients who might be denied admission to a smaller rehab program can receive treatment at WakeMed Rehab Hospital."*

See also Section X, page 170, where the applicant also discusses how the proposed project would impact cost effectiveness; Section II.6, pages 40-50, where the applicant further discusses how the proposed project would impact quality and Section VI.2, pages 116-121 and Section VI.4, pages 142-143, where the applicant further discusses how the proposed project would impact access to inpatient rehabilitation services. The information the applicant provides in those sections is reasonable and credible and adequately demonstrates that adding
12 new inpatient rehabilitation beds in newly constructed space on the WakeMed Raleigh Campus, converting all semi-private rooms to private rooms and renovating space in the existing Rehab Hospital will have a positive impact on cost-effectiveness, quality and access because:

- The applicant adequately demonstrates the need for 12 new inpatient rehabilitation beds, conversion of semi-private rooms to private rooms, newly constructed space for 12 new and 29 currently licensed beds, and renovated space in the current facility based on projected utilization which is based on reasonable, credible and supported assumptions.
- The applicant has and will continue to provide quality services.
- The applicant has and will continue to provide adequate access to medically underserved groups, including self pay/charity care patients, Medicare beneficiaries, and Medicaid recipients.

Therefore, the application is conforming to this criterion.

Duke Raleigh - Duke Raleigh proposes to develop a 12-bed inpatient rehabilitation unit at Duke Raleigh Hospital in Wake County, in HSA IV. In Section V.8, pages 115-116, Duke Raleigh describes how the proposed project will foster competition in the service area as it relates to promoting cost-effectiveness, quality and access. The applicant states that establishing a new provider of inpatient rehabilitation services at Duke Raleigh will foster competition by improving the quality, efficiency and access to post-acute care services, by allowing the hospital to expand its range of services, and by providing a second option for residents of Wake County and a fifth option for HSA IV residents. The applicant further states that a focus and specialization of the proposed IRF will be stroke, amputation, and orthopaedic patients which will ensure high quality care.

See also Section X, page 116, where the applicant also discusses how the proposed project would impact cost effectiveness; Section II.6, pages 19-25, where the applicant further discusses how the proposed project would impact quality, and Section VI.2-4, pages 118-121, where the applicant further discusses how the proposed project would impact access to inpatient rehabilitation services. The information the applicant provides in those sections is reasonable and credible and adequately demonstrates that developing a 12-bed inpatient rehabilitation unit at Duke Raleigh Hospital will have a positive impact on cost-effectiveness, quality and access because:

- The applicant adequately demonstrates the need for a new 12-bed inpatient rehabilitation unit in the current facility based on projected utilization which is based on reasonable, credible and supported assumptions.
- The applicant has and will continue to provide quality services.
- The applicant has and will continue to provide adequate access to medically underserved groups, including self pay/charity care patients, Medicare beneficiaries, and Medicaid recipients.

Therefore, the application is conforming to this criterion.

Johnston – The applicant proposes to develop an 8-bed inpatient rehabilitation unit at Johnston Medical Center – Smithfield in Johnston County, in HSA IV. In Section V.8(a), pages 123-124, Johnston describes how the proposed project will foster competition in the service area as it relates to promoting cost-effectiveness, quality and access. The applicant states: *"any competitive impact brought about by the proposed inpatient rehabilitation unit at JMC-Smithfield will be realized in the existing rehabilitation facilities in these other counties. WakeMed … will likely be impacted the most. However because WakeMed's inpatient rehabilitation unit is operating at 90 percent occupancy … the additional competition would actually relieve WakeMed's capacity constraints if its Johnston County patients were able to be cared for in their own county."*

See also Section V.8(b), pages 112-114 and Section X, pages 141-143 where the applicant discusses how the proposed project would impact cost effectiveness; Section II.6, pages 29-35, and Section V.8, pages 114-115, where the applicant further discusses how the proposed project would impact quality; and Section V.8, page 112, and Section VI.2-5, pages 116-119 where the applicant further discusses how the proposed project would impact access to inpatient rehabilitation services. Johnston adequately demonstrated that they will provide quality services and that they will provide adequate access to the proposed services. However, the applicant did not adequately demonstrate that the proposal is cost effective because costs and revenues are based on projected utilization which is unsupported and unreliable. Therefore the application is not conforming to this criterion.

(19) Repealed effective July 1, 1987.

(20) An applicant already involved in the provision of health services shall provide evidence that quality care has been provided in the past.

C
UNC
WakeMed
Duke Raleigh
Johnston

UNC is licensed by NC DHHS and certified for Medicare and Medicaid participation and states in Section I.10(c), page 8, that it is accredited by the Joint Commission and the Commission on Accreditation of Rehabilitation Facilities (CARF). According to the files in

the Acute and Home Care Licensure and Certification Section, DHSR, no incidents occurred at UNC, within the eighteen months immediately preceding the date of this decision, for which any sanctions or penalties related to quality of care were imposed by the State. Therefore, the application is conforming with this criterion.

WakeMed is licensed by NC DHHS and certified for Medicare and Medicaid participation, and states in Section II.6(a), page 50, that it is accredited by the Joint Commission and the Commission on Accreditation of Rehabilitation Facilities (CARF). According to the files in the Acute and Home Care Licensure and Certification Section, DHSR, no incidents occurred at WakeMed, within the eighteen months immediately preceding the date of this decision, for which any sanctions or penalties related to quality of care were imposed by the State. Therefore, the application is conforming with this criterion.

Duke Raleigh is licensed by NC DHHS, accredited by the Joint Commission and certified for Medicare and Medicaid participation. According to the files in the Acute and Home Care Licensure and Certification Section, DHSR, no incidents occurred at Duke Raleigh, within the eighteen months immediately preceding the date of this decision, for which any sanctions or penalties related to quality of care were imposed by the State. Therefore, the application is conforming with this criterion.

Johnston is licensed by NC DHHS, accredited by the Joint Commission, and is certified for Medicare and Medicaid participation. According to the files in the Acute and Home Care Licensure and Certification Section, DHSR, no incidents occurred at Johnston, within the eighteen months immediately preceding the date of this decision, for which any sanctions or penalties related to quality of care were imposed by the State. Therefore, the application is conforming with this criterion.

(21) Repealed effective July 1, 1987.

(b) The Department is authorized to adopt rules for the review of particular types of applications that will be used in addition to those criteria outlined in subsection (a) of this section and may vary according to the purpose for which a particular review is being conducted or the type of health service reviewed. No such rule adopted by the Department shall require an academic medical center teaching hospital, as defined by the State Medical Facilities Plan, to demonstrate that any facility or service at another hospital is being appropriately utilized in order for that academic medical center teaching hospital to be approved for the issuance of a certificate of need to develop any similar facility or service.

C
UNC
WakeMed
Duke Raleigh

NC
Johnston

The applicants propose to add new inpatient rehabilitation beds, therefore, the Criteria and Standards for Rehabilitation Services promulgated in 10A NCAC 14C .2800 are applicable to this review.

SECTION .2800 - CRITERIA AND STANDARDS FOR REHABILITATION SERVICES

.2802 INFORMATION REQUIRED BY APPLICANT

(a) An applicant proposing to establish new rehabilitation beds shall specify the total number of rehabilitation beds in the facility or unit to be operated following completion of the proposed project.

-C- **UNC** – The applicant states that it will have 42 rehabilitation beds following completion of the proposed project.

-C- **WakeMed** – The applicant states that it will have 110 rehabilitation beds following completion of the proposed project and Project I.D. # J-8631-11.

-C- **Duke Raleigh** – The applicant states that it will have 12 rehabilitation beds following completion of the proposed project.

-C- **Johnston** – The applicant states that it will have 8 rehabilitation beds following completion of the proposed project.

(b) An applicant proposing to establish new rehabilitation beds shall demonstrate that:

(1) The target population for the program is specifically defined;

-C- **UNC** – The applicant identifies the counties from which it proposes to serve patients in Section III.5(a), page 78, and projects the diagnosis of patients to be served in Section IV.1, pages 80-84.

-C- **WakeMed** - The applicant identifies the counties from which it proposes to serve patients in Section III.5(a), pages 86-87, and projects the diagnosis of patients to be served in Section IV.1(c), pages 96-98.

-C- **Duke Raleigh** – The applicant identifies the counties from which it proposes to serve patients in Section III.5(a), page 95, and projects the diagnosis of patients to be served in Section IV.1(c), pages 99-102.

-C- **Johnston** – The applicant identifies the counties from which it proposes to serve patients in Section III.5(a), page 103, and projects the diagnosis of patients to be served in Tables IV.D-F, pages 111-117.

(2) Arrangements and responsibilities for administration and medical direction are specified;

-C- **UNC** - In Section II.2(e), page 15, the applicant states:

"Program management of the UNC Inpatient Rehabilitation Center is provided by Administrative Director Barbara Adcock-Mohr. Michael Lee, MD is Chair of the Department of Physical Medicine and Rehabilitation and Medical Director of the Rehabilitation Program."

Continuing on pages 22-23, the applicant provides a list of the current faculty of the Department of Physical Medicine and Rehabilitation which includes physiatrists, rehabilitation psychologists and researchers, rehabilitation administration and other professionals.

-C- **WakeMed** - In Section II.7, pages 52-55, the applicant identifies the Executive Director of Rehabilitation and Trauma Services, the director of Rehab Hospital Services at WakeMed Rehabilitation Hospital, and identifies Dr. Patrick J. O'Brien as the medical director of WakeMed Rehabilitation Hospital, WakeMed Acute Care Rehabilitation Services, WakeMed Rehabilitation Outpatient & Day Treatment Services, WakeMed Zebulon/Wendell SNF, WakeMed Cardiac Rehabilitation Program, and WakeMed Home Health; and Dr. Wing K. Ng as the medical director of the Brain Injury Program at WakeMed Rehabilitation Hospital. Attachment 3 contains the organizational chart for WakeMed Rehabilitation.

-C- **Duke Raleigh** - In Section II.7, pages 28-29, the applicant provides administration and management information as follows: refers to Exhibit II for an organizational chart for the hospital and the proposed rehabilitation services, identifies the manager of the inpatient unit as the current Director of Orthopaedic and Rehabilitation Services who will be elevated to Executive Director of Rehabilitation Services, and identifies Dr. Greg Bentley as the medical director of the proposed unit.

-C- **Johnston** - In Section II.2(e), pages 15-16, and Section II.7, page 35, the applicant states that the proposed rehabilitation unit will be managed by the UNC Rehabilitation Center. Specifically, Dr. Michael Lee or his designee will be the medical director and an on-site nurse manager, employed by UNC Hospitals, will serve as the administrative manager. Exhibit 9, page 293, contains the organizational chart.

(3) A plan exists that describes how clinical personnel (e.g., rehabilitative nurses and therapists) and ancillary services will be allocated if personnel or services for the rehabilitation beds will be shared with other units or facilities; and

-C- **UNC** – In Section VII.4, page 105, the applicant states that direct care personnel for the UNC Rehabilitation Center will not be shared with other units. The applicant does not address ancillary services specifically. In Section VII.3(a), page 104, the applicant states that the positions listed in Table VII.2 – Proposed Staff include no new positions, only incremental staff additions.

-C- **WakeMed** – In Section II.7, page 55, the applicant states:

"WakeMed Rehab Hospital does not share direct clinical staff with any facility. In the case of ancillary and support services, WakeMed Rehab Hospital utilizes staff at the WakeMed Raleigh Campus, which is contiguous to the Rehab Hospital and which offers a full range of support services. Doing so allows WakeMed to spread the costs associated with these services more effectively, and obviates the need for the Rehab Hospital to develop and staff its own support services.

…

Operating revenues and expenses are allocated to the Rehab Hospital as appropriate, but administrative control of ancillary and support departments remains with management at WakeMed Raleigh Campus."

-C- **Duke Raleigh** – In Section II.7, page 29, the applicant states that the proposed unit will have dedicated clinical core staff, and that a plan exists for acute care staff to allocate time to the rehabilitation unit when the rehabilitation census increases over the core staffing levels. In Section VII.3(a), page 132, the applicant states that many positions listed in Table VII.2 – Proposed Staff are new positions. Exceptions include the Executive Director and ancillary and support services such as housekeeping, maintenance, dietary, materials management, etc.

-C- **Johnston** - In Section II.7, page 35, the applicant states that the only position to be shared with any other existing department is the therapeutic recreational assistant. In Section VII.2, page 139, the applicant states it expects additional staffing needs for expansion of existing support services such as dietary, housekeeping, maintenance, and others and has allocated their costs in Other Indirect Expenses, Form B.

(4) Referral and transfer agreements exist or shall be arranged for between the proposed rehabilitation program or unit and all units within the program, the facility in which the proposed rehabilitation program or unit will be situated, and the agencies that are involved in the provision of rehabilitation or related support services and are located in the proposed service area.

-C- **UNC** – In Section V.3(a), pages 89-90, the applicant identifies 37 acute care hospitals or hospital systems from which it has received referrals. Section V.3(b), page 90 refers to a sample transfer agreement in Exhibit 10. In Section V.4 and Exhibit 20, the applicant discusses referrals or transfers from the inpatient rehabilitation unit. In Section V.5, pages 90-91, and Exhibits 4 and 13 the applicant discusses arrangements with agencies and other health care providers involved in the provision of rehabilitation or related support services.

-C- **WakeMed** – In Section V.3(a), page 128, the applicant identifies the acute care hospitals with which WakeMed currently has transfer agreements. The agreements are applicable to WakeMed Rehabilitation Hospital as well. Attachment 20 contains representative samples of existing transfer agreements. In Section V.4 the applicant states that transfer and referral agreements are not required between programs within WakeMed Rehab. Section V.5 identifies companies and agencies that provide

ancillary and support services. Attachment 9 contains correspondence from those providers.

-C- **Duke Raleigh** – In Section V.3(a), pages 113-114, the applicant identifies the acute care hospitals with which it currently has transfer agreements. Exhibit 7 contains a sample transfer agreement and a list of agencies providing rehabilitation and other related support services including IRFs, outpatient rehabilitation centers, skilled nursing facilities and long-term care hospitals with which Duke Raleigh already has relationships. In Section V.4 the applicant states that transfer and referral agreements are not required between programs within the Duke Raleigh system. Section V.5 identifies companies and agencies that provide ancillary and support services. Exhibit 16 contains correspondence from some of those providers.

-C- **Johnston** – In Section V.3(a), page 105, the applicant states that it has in place necessary ancillary and support services and transfer agreements. Exhibit 17 contains transfer agreements with Sampson Regional Medical Center, Duke University Hospital, North Carolina Baptist Hospital, Wake Forest University Baptist Medical Center, Wake Medical Center, UNC Hospitals, Smithfield Manor, Britthaven of Louisburg, Britthaven of Raleigh, Britthaven of Wilson, and Britthaven of Goldsboro. Exhibit 17 also contains letters to potential referring facilities Sampson Regional Medical Center, Wayne Memorial Hospital, Betsy Johnston Regional Hospital, and Rex Healthcare.

(c) An applicant proposing to establish new rehabilitation beds shall document the proximity of the proposed facility or unit to the following services:

(1) support services;

-C- **UNC** – The current rehabilitation unit is housed on the seventh floor of the hospital. In Sections II.3, page 30 and II.7, page 46, the applicant lists support services and states that support services are provided on-site and are immediately available.

-C- **WakeMed** – The applicant states in Sections II.3, pages 37-38 and II.7, page 56 that support services are currently provided within WakeMed Rehabilitation Hospital and the contiguous WakeMed Raleigh Campus.

-C- **Duke Raleigh** – The proposed rehabilitation unit will be on the third floor of the Duke Raleigh campus and will be licensed under Duke Raleigh's license. In Section II.7, pages 30-31, the applicant states that support services will be available on the Duke Raleigh campus.

-C- **Johnston** – The proposed rehabilitation unit will be on the third floor of the hospital and will be licensed as part of Johnston Health. The applicant states in Section II.7, page 36 and Exhibit 13 that support services will be provided by the existing hospital departments and services.

(2) ancillary services;

-C- **UNC** – In Sections II.7, page 46, and II.3-4, pages 30-31 the applicant states that ancillary services are provided on-site and are immediately available. See also Exhibit 3.

-C- **WakeMed** - The applicant states in Section II.7, page 56 that ancillary services are currently provided within WakeMed Rehabilitation Hospital and the contiguous WakeMed Raleigh Campus.

-C- **Duke Raleigh** – The applicant states in Section II.7, page 31, and II.3-4, pages 16-19, that ancillary services likely to be required to serve the proposed inpatient rehabilitation unit are currently provided and will be available at Duke Raleigh. See also Exhibits 8, 15 and 16.

-C- **Johnston** – The applicant states in Section II.7, page 37 and Exhibit 13 that ancillary services will be provided by the existing hospital departments and services.

(3) public transportation;

-C- **UNC** – In Section II.7, page 39, the applicant states that public transportation is available on-site at the main entrance.

-C- **WakeMed** – In Section II.7, pages 56-57, the applicant states that WakeMed Rehabilitation Hospital is highly accessible by public transportation. Raleigh's public transportation system has four bus stops on the WakeMed Raleigh Campus.

-C- **Duke Raleigh** – In Section II.7, page 31 the applicant states that public transportation is available immediately in front of the hospital.

-C- **Johnston** – In Section II.7, page 37, the applicant states that the central office for the Johnston County Area Transit System is located in Selma and is approximately 3.7 miles or 9 minutes from the hospital.

(4) outpatient rehabilitation clinics;

-C- **UNC** – In Section II.7, page 39, the applicant states that outpatient rehabilitation clinics are provided on-site and are available as per schedule.

-C- **WakeMed** - In Section II.7, page 57, the applicant states that outpatient rehabilitation clinics are currently provided within WakeMed Rehabilitation Hospital, and at a number of WakeMed Rehabilitation locations (listed in Section I.10, pages 8-9).

-C- **Duke Raleigh** - In Section II.7, pages 31-32, the applicant states that outpatient rehabilitation services are offered on the hospital campus.

-C- **Johnston** – In Section II.7, page 37, the applicant reports that it provides outpatient rehabilitation services through Johnston Health Rehabilitation Services which are located across the street from the hospital in the medical mall. The applicant provides a shuttle between the hospital and the medical mall. Other providers and their location are listed.

(5) home health agencies;

-C- **UNC** – In Section II.7, page 39, the applicant states that the UNC Home Health office is approximately 4.7 miles and 12 minutes' travel time away.

-C- **WakeMed** - In Section II.7, page 58, the applicant states that it owns and operates WakeMed Home Health, and also works with other home health and home care agencies in its service area.

-C- **Duke Raleigh** - In Section II.7, pages 32-33, the applicant provides a list of home health agencies throughout the region with which it has relationships and states that Duke Home Care and Hospice, owned by Duke University Health Systems, has a location on the hospital's campus.

-C- **Johnston** – In Section II.7, page 38, the applicant reports that it owns and operates a home health agency, Johnston Memorial Home Care and Hospice, located on the hospital campus and immediately available.

(6) group homes for disabled persons.

-C- **UNC** – In Section II.7, page 39, the applicant states *"Group homes (NC-licensed adult care homes) for disabled persons that are near UNC Hospitals are The Stratford and the Carolina House of Chapel Hill; both approximately 2.4 miles and 6 minutes travel time."*

-C- **WakeMed** – In Section II.7, page 58, the applicant states that it is located in close proximity to a number of group homes for disabled persons. Wake County ICF-MR group homes, listed in the 2012 SMFP, along with their respective distances from WakeMed Rehabilitation Hospital are provided on page 58.

-C- **Duke Raleigh** - In Section II.7, page 34, the applicant lists 21 ICF/MR [ICF/IID] facilities within Wake County and the estimated driving distance from Duke Raleigh's campus.

-C- **Johnston** – In Section II.7, page 38, the applicant states that 26 supervised living homes for the developmentally disabled are located in Johnston County and Garner. In addition, on page 38, the applicant lists 5 ICF/IID facilities in Johnston County and the estimated distance and driving time from the hospital.

(d) An applicant proposing to add rehabilitation beds to an existing facility shall show the current rehabilitation patient origin by percentage by county of residence for the 12 month period immediately preceding the submittal of the application. All assumptions, including the specific methodology by which patient origin is projected shall be clearly stated.

-C- **UNC** – In Section III.4, page 77, the applicant provides its current rehabilitation patient origin by percentage by county of residence for the most recent 12-month period, as shown in the following table.

Patient Origin of UNC Inpatient Rehabilitation Patients in FY12

County	Cases	% of Total	County	Cases	% of Total
Alamance	44	7.86%	Lenoir	1	0.18%
Beaufort	3	0.54%	Martin	1	0.18%
Bladen	1	0.18%	Mecklenburg	3	0.54%
Brunswick	3	0.54%	Montgomery	4	0.71%
Buncombe	2	0.36%	Moore	7	1.25%
Burke	3	0.54%	Nash	7	1.25%
Caldwell	1	0.18%	New Hanover	8	1.43%
Carteret	1	0.18%	Northampton	1	0.18%
Caswell	9	1.61%	Onslow	12	2.14%
Chatham	44	7.86%	Orange	88	15.71%
Columbus	1	0.18%	Pasquotank	1	0.18%
Craven	8	1.43%	Pender	1	0.18%
Cumberland	37	6.61%	Perquimans	1	0.18%
Dare	2	0.36%	Person	7	1.25%
Duplin	3	0.54%	Randolph	9	1.61%
Durham	31	5.54%	Richmond	5	0.89%
Edgecombe	1	0.18%	Robeson	20	3.57%
Forsyth	2	0.36%	Rockingham	2	0.36%
Franklin	3	0.54%	Sampson	12	2.14%
Gates	1	0.18%	Vance	7	1.25%
Guilford	11	1.96%	Wake	56	10.0%
Halifax	5	0.89%	Wayne	7	1.25%
Harnett	12	2.14%	Wilson	4	0.71%
Henderson	1	0.18%	Yancey	1	0.18%
Hoke	4	0.71%	**NC Total**	**539**	**96.25%**
Iredell	1	0.18%	Other US Total	21	3.75%
Johnston	13	2.32%			
Lee	27	4.82%	**Total**	**560**	**100.00%**

-C- **WakeMed** - In Section III.4, pages 85-86, the applicant provides its current rehabilitation patient origin by percentage by county of residence for the most recent 12-month period, as shown in the following table:

WakeMed Inpatient Rehabilitation Patient Origin 7/1/11 – 6/30/12

County	Cases	% of Total
Wake	938	56.75%
Johnston	154	9.32%
Harnett	128	7.74%
Franklin	73	4.42%
Nash	54	3.27%
Sampson	53	3.21%
Wayne	33	2.00%
Halifax	23	1.39%
Wilson	22	1.33%
Cumberland	18	1.09%
Duplin	14	0.85%
Durham	12	0.73%
Edgecombe	9	0.54%
Lee	9	0.65%
Northampton	8	0.48%
Granville	7	0.42%
Warren	7	0.42%
Orange	6	0.36%
Vance	6	0.36%
Bladen	3	0.18%
Guilford	3	0.18%
Lenoir	3	0.18%
Moore	3	0.18%
Alamance	2	0.12%
Anson	2	0.12%

County	Cases	% of Total
Carteret	2	0.12%
Caswell	2	0.12%
New Hanover	2	0.12%
Person	2	0.12%
Robeson	2	0.12%
Ashe	1	0.06%
Beaufort	1	0.06%
Bertie	1	0.06%
Caldwell	1	0.06%
Catawba	1	0.06%
Chatham	1	0.06%
Columbus	1	0.06%
Greene	1	0.06%
Henderson	1	0.06%
Hertford	1	0.06%
Hoke	1	0.06%
Martin	1	0.06%
Pitt	1	0.06%
Richmond	1	0.06%
Rowan	1	0.06%
Stokes	1	0.06%
Tyrrell	1	0.06%
Out of State	37	2.24%
Total	1,653	100.00%

-NA- **Duke Raleigh** – The applicant does not currently operate inpatient rehabilitation beds.

-NA- **Johnston** - The applicant does not currently operate inpatient rehabilitation beds.

(e) An applicant proposing to establish new rehabilitation beds shall project patient origin by percentage by county of residence. All assumptions, including the specific methodology by which patient origin is projected shall be clearly stated.

-C- **UNC** - The applicant provides projected patient origin data and its assumptions including methodology in Section III.5, page 78 and on page 18 of these Findings.

-C- **WakeMed** – The applicant provides projected patient origin data and its assumptions including methodology in Section III.5, page 86-88 and Section IV.1, pages 99-121 and on page 29 of these Findings.

-C- **Duke Raleigh** – The applicant provides projected patient origin data and its assumptions including methodology in Section III.5, pages 95-96 and on page 49 of these Findings.

-NC- **Johnston** – The applicant provides projected patient origin data and its assumptions including methodology in Section III.5, pages 103-105 and on page 67 of these Findings. However, see Criterion (3), which is hereby incorporated by reference as if fully set forth herein, for discussion of the reasonableness of the methodology.

(f) An applicant proposing to establish new rehabilitation beds shall project the average length of stay (ALOS) for each for the following categories of patients:

(1) spinal cord;
(2) traumatic brain injury;
(3) stroke;
(4) pediatric.

-C- **UNC** - The applicant projects the following ALOS for rehabilitation patients in Section II.7, page 42 and in Section IV.1(c), pages 80-84. The applicant's projected ALOS for pediatric patients is based on Mayo Clinic data; the projected ALOS for adult patients is based on experience.

UNC ALOS by Patient Type – FY15

Patient Type	ALOS	
	Pediatric	Adult
Spinal cord - traumatic	29.8 days	29.0 days
Spinal cord – non-traumatic	-	22.1 days
Traumatic brain injury	15.5 days	15.0 days
Stroke	-	16.6 days
Pediatric – Non-traumatic spinal cord or Other	-	-

-C- **WakeMed** - The applicant projects the following ALOS for rehabilitation patients in Section II.7, pages 59-60 and in Section IV.1(c), pages 96-98. The applicant's projected ALOS is based on experience. Regarding pediatric ALOS, on page 60, the applicant states:

> *"'Pediatrics' refers to a distinct patient population, not a diagnosis category such as spinal cord injury or stroke. Within the Pediatric category, patients may be admitted for spinal cord injury, traumatic and non-traumatic brain injury, neurological, orthopaedic, amputation or other diagnosis. …*

…Pediatric ALOS is projected to fluctuate within primary rehab diagnosis categories, primarily due to the fractional nature of the calculations and the relatively small number of patients projected to be admitted."

WakeMed ALOS by Patient Type – FY17

Patient Type	ALOS	
	Pediatric	**Adult**
Spinal cord	18.4 days	18.1 days
Traumatic brain injury	15.9 days	17.7 days
Stroke/CVA	NA	18.0 days
Pediatric – total cases	17.6 days	-

-C- **Duke Raleigh** – The applicant projects the following average length of stay (ALOS) for rehabilitation patients in Section II.7, page 36.

ALOS by Patient Type

Patient Type	ALOS
Spinal cord - traumatic	-
Spinal cord – non-traumatic	15.9 days
Traumatic brain injury	-
Stroke	16.3 days
Pediatric	-

-C- **Johnston** – The applicant projects the following ALOS for rehabilitation patients in Section II.7, page 39 and Section IV.1(c), pages 108-116:

ALOS by Patient Type – FFY15-FFY17

Patient Type	ALOS
Spinal cord	-
Traumatic brain injury	15.8 days
Stroke	16.1 days
Pediatric	-

(g) An applicant proposing to establish new rehabilitation beds shall project an occupancy level for all rehabilitation beds in the facility for each of the first eight calendar quarters following completion of the proposed project. The applicant shall clearly document all assumptions, including the specific methodologies by which occupancies are projected.

-C- **UNC** - In Section II.7, page 44, and Section IV.2, page 86, the applicant projects the occupancy level of the proposed rehabilitation beds for each of the first eight calendar quarters following completion of the project. In Section III.1, pages 62-71, the applicant clearly documents its assumptions, including the specific methodologies by which occupancies are projected.

-C- **WakeMed** - In Section II.7, pages 60-61, and Section IV.2, page 121, the applicant projects the occupancy level of the proposed rehabilitation beds for each of the first eight calendar

quarters following completion of the project. The applicant clearly documents its assumptions, including the specific methodologies by which occupancies are projected.

-C- **Duke Raleigh** – In Section II.7, page 37, Section II.1, pages 40-86 and Section IV.2, pages 103-105, the applicant projects the occupancy level of the proposed rehabilitation beds for each of the first eight calendar quarters following completion of the project. The applicant clearly documents its assumptions, including the specific methodologies by which occupancies are projected.

-NC- **Johnston** – In Section II.7, page 40, and Section IV.2, page 117, the applicant projects the occupancy level of the proposed rehabilitation beds for each of the first eight calendar quarters following completion of the project. The applicant clearly documents its assumptions, including the specific methodologies by which occupancies are projected. However, see Criterion (3), which is hereby incorporated by reference as if fully set forth herein, for discussion of the reasonableness of Johnston's assumptions, methodology and projections.

10A NCAC 14C .2803 PERFORMANCE STANDARDS

(a) An applicant proposing to establish new rehabilitation beds shall not be approved unless the average occupancy, over the nine months immediately preceding the submittal of the application, of the total number of licensed rehabilitation beds within the facility in which the new beds are to be operated was at least 80 percent.

-C- **UNC** – In Section II.7, page 49, the applicant states that average occupancy for UNC's 30 inpatient rehabilitation beds was 83.2% for the nine months immediately preceding the submittal of this application, October 2011 – June 2012.

-C- **WakeMed** - In Section II.7, page 54, the applicant states that average occupancy for WakeMed's 84 inpatient rehabilitation beds was 91.3% for the nine months immediately preceding the submittal of this application, October 2011 – June 2012.

-NA- **Duke Raleigh** – The applicant does not currently operate inpatient rehabilitation beds.

-NA- **Johnston** - The applicant does not currently operate inpatient rehabilitation beds.

(b) An applicant proposing to establish new rehabilitation beds shall not be approved unless occupancy is projected to be 80 percent for the total number of rehabilitation beds to be operated in the facility no later than two years following completion of the proposed project.

-C- **UNC** - In Section IV.1, pages 80 and 85 and Section IV.2, page 86, the applicant projects at least 80% occupancy during Years Two and Three of the proposed project.

-C- **WakeMed** - In Section IV.1(c), pages 96-98 and IV.2, page 121, the applicant projects at least 80% occupancy during Years One, Two and Three of the proposed project.

-C- **Duke Raleigh** – In Section IV.2, page 37, the applicant projects at least 80% occupancy of the proposed rehabilitation beds during the 3rd quarter of Year Two following completion of the project.

-NC- **Johnston** – In Section IV.2, page 117, the applicant projects at least 80% occupancy by Project Year 2 following completion of the project. However, projected utilization is based upon unsupported assumptions. See Criterion (3), which is hereby incorporated by reference as if fully set forth herein, for discussion of reasonableness of the projections.

10A NCAC 14C .2805 STAFFING AND STAFF TRAINING

An applicant proposing to establish new rehabilitation beds shall identify which of the following rehabilitation services shall be provided in the facility upon licensure and operation of the new rehabilitation beds:

(1) Program Manager;
(2) Occupational Therapy;
(3) Physical Therapy;
(4) Physiatrist or a physician who has training and experience in providing rehabilitation care;
(5) Psychology;
(6) Rehabilitation Nursing;
(7) Respiratory Therapy;
(8) Social Work;
(9) Speech-Language Pathology and Audiology;
(10) Vocational Rehabilitation;
(11) Orthotics;
(12) Prosthetics.

-C- **UNC** - In Section II.7, page 46, the applicant states that all of the services listed above will continue to be provided by the inpatient rehabilitation unit except for Vocational Rehabilitation which will be referred to the Division of Vocation Rehabilitation Services, DHHS and orthotics and prosthetics which will be provided by outside vendors who will provide the services both on the hospital campus and at UNC off-campus clinics.

-C- **WakeMed** – In Section II.7, page 63, the applicant states that all of the services listed above will continue to be provided by the inpatient rehabilitation unit except for Vocational Rehabilitation which is provided via contract through a State agency, and Physiatry, Orthotics and Prosthetics which are provided on a contract basis with private companies. All services listed above will be available to patients at the rehabilitation hospital.

-C- **Duke Raleigh** – In Section II.7, pages 38-39, the applicant states that all of the services listed above will be provided by the proposed inpatient rehabilitation unit except for Vocational Rehabilitation which will be referred to the Division of Vocation Rehabilitation Services, DHHS and orthotics and prosthetics which will be provided by outside vendors including one who is located on the hospital campus.

-C- **Johnston** – In Section II.2(e), pages 15-23 and page 28, the applicant provides information on each of the services above, stating that occupational therapy, physical therapy, rehabilitation nursing, respiratory therapy, social services, and speech-language therapy will be provided by the proposed inpatient rehabilitation unit. Vocational rehabilitation will be referred to the North Carolina Division of Vocational Rehabilitation Services. Psychology will be provided by the Johnston County Area Mental Health Center. Program Management, Physiatry and supervision will be provided through UNC Hospitals. Orthotics and Prosthetics will be provided on a contract basis with a private company. All services listed above will be available to patients at the rehabilitation hospital.

COMPARATIVE ANALYSIS

The N.C. General Statute Section 131E-183(a)(1) states that the need determination in the SMFP is a determinative limit on the number of rehabilitation beds that can be approved by the CON Section. Pursuant to N.C. General Statute Section 131E-183(a)(1) and the need determination in the 2012 SMFP, no more than 20 new rehabilitation beds may be approved in this review. Because the four applications in this review propose the development of a total of 44 new rehabilitation beds, all applications cannot be approved, since it would result in the approval of beds in excess of the need determination in the 2012 SMFP.

The 2012 SMFP, Inpatient Rehabilitation Services Chapter states:

> *"**Basic Principles***
>
> *The scope of services covered in this section of the North Carolina 2012 State Medical Facilities Plan is limited to Rehabilitation services provided to people who are physically disabled. Physical rehabilitation services exclude mental health and substance abuse rehabilitation services, but include those mental health services needed by individuals primarily suffering from physical injury or disease, and rehabilitation services provided to people who are cognitively disabled as a result of physical injury or disease.*
>
> *The combination of component services required to meet the needs of the individual is provided using an interdisciplinary approach and continues as long as, within a reasonable period of time, significant and observable improvement toward established goals is taking place. Where necessary, these services are provided through a spectrum of care using a system of case management.*
>
> *Inpatient rehabilitation beds include comprehensive (general), spinal cord, brain injury and pediatric beds.*
>
> *Inpatient rehabilitation facilities units/beds should be located in general acute care or rehabilitation hospitals or in nursing facilities to ensure that there is available medical back-up for medical emergencies.*
>
> ***Basic Assumptions of the Methodology***
>
> - *The Health Service Areas remain logical planning areas for inpatient rehabilitation beds even though many patients elect to enter rehabilitation facilities outside the region in which they reside.*
> - *The bed need determination methodology is based upon the historic average annual utilization of inpatient rehabilitation beds."*

Therefore, after considering the information in each application and reviewing each application individually against all applicable review criteria, the analyst also conducted a comparative analysis of the proposals to decide which proposal should be approved. For reasons set forth below and in the rest of the findings, the applications submitted by **WakeMed** and **Duke Raleigh** are conditionally approved and the other applications are disapproved.

Geographic Access

All four applicants in this review propose to develop new rehabilitation beds in HSA IV[1]. Duke Raleigh proposes to develop a new 12-bed rehabilitation unit at its existing facility and WakeMed proposes to add 12 new beds to its existing rehabilitation hospital, both in Wake County. UNC proposes to add 12 new beds to its existing facility in Orange County. Johnston proposes to develop a new 8-bed rehabilitation unit in Johnston County at its existing facility in Smithfield.

The current inpatient rehabilitation beds in HSA IV are distributed as follows:

Inpatient Rehabilitation Bed Distribution in HSA IV by Facility

County	Facility	# Beds	% HSA IV Beds	FFY11 % Occupancy
Durham	Durham Regional	30	17.8%	77.3%
Orange	UNC	30	17.8%	83.1%
Vance	Maria Parham	11	6.5%	66.2%
Wake	WakeMed	98*	58.0%	92.7%
HSA IV Total		**169**	**100.0%**	**78.9%**

Source: 2012 Licensure Renewal Applications (LRAs). Calculated columns may not total due to rounding.
*Includes 14 beds that have been awarded but are not operational.

The following table shows the 2008 - 2011 occupancy of inpatient rehabilitation facilities in HSA IV.

County	Facility	Licensed # Beds	FFY08		FFY09		FFY10		FFY11		FFY08 – FFY11
			Patient Days	Occu-pancy	Patient Days	Occu-pancy	Patient Days	Occu-pancy	Patient Days	Occu-pancy	CAGR
Durham	Durham Regional	30	6,382	58.3%	7,119	65.0%	8,662	79.1%	8,467	77.3%	9.9%
Orange	UNC	30	9,046	82.6%	9,303	85.0%	8,937	81.6%	9,100	83.1%	0.2%
Vance	Maria Parham	11	27,728	65.1%	2,755	68.6%	2,482	61.8%	2,657	66.2%	0.6%
Wake	WakeMed	84*	2,612	90.4%	27,961	91.2%	28,220	92.0%	28,415	92.7%	0.8%
HSA IV Total		**155**	**45,768**	**80.9%**	**47,138**	**83.3%**	**48,301**	**85.4%**	**48,639**	**86.0%**	**2.1%**

Source: 2012 SMFP and 2012 LRAs
* 14 additional beds have been awarded, but are not operational.

As shown in the table above, WakeMed has the largest capacity and highest occupancy of the four existing IRFs in HSA IV. The population using inpatient rehabilitation services utilizes WakeMed's existing program more than the other three facilities in HSA IV combined. More patients in HSA IV are treated at the rehabilitation program at WakeMed than the other 3 programs. However, utilization at WakeMed has leveled off as it has also at UNC and Maria Parham. On the other hand, Durham Regional has seen an overall growth in occupancy during three of the four years.

[1] HSA = Health Service Area - State Medical Facilities Planning (SMFP) Rehabilitation bed planning area

The following table includes the FFY11 number and percentage of inpatient rehabilitation patients and days in HSA IV by County.

Inpatient Rehabilitation Cases and Patient Days in HSA IV
FFY11

	Inpatient Rehabilitation Patients		Inpatient Rehabilitation Patient Days	
HSA IV County	**#**	**%**	**#**	**%**
Wake	1,074	47%	17,936	52%
Durham	257	11%	3,591	10%
Johnston	240	10%	3,846	11%
Vance	196	9%	2,309	7%
Orange	132	6%	1,671	5%
Franklin	102	4%	1,646	5%
Chatham	76	3%	944	3%
Lee	61	3%	668	2%
Warren	60	3%	716	2%
Granville	59	3%	701	2%
Person	44	2%	645	2%
Total	2,301	100%	34,673	100%

Source: Cecil G. Sheps Center

As the table above reflects, during FFY11, 47% of HSA IV inpatient rehabilitation patients resided in Wake County and 52% of the HSA's patient days for inpatient rehabilitation came from patients who reside in Wake County. Patients from Johnston County made up 10% and 11% of the number of patients and patient days, respectively. Orange County residents made up 6% of the patients and 5% of patient days.

The table below reflects the distribution of the population in HSA IV by County, as well as the distribution of the current 169 inpatient rehabilitation beds. In addition, the table also shows what the distribution of the current and proposed beds (169 + 20 = 189) would look like if the beds were distributed by HSA IV County portion of the population.

HSA IV County	HSA IV Estimated Population 2011	HSA IV # Existing Rehab Beds	# Existing and Proposed Rehab Beds Allocated Based on HSA IV Population	Bed Surplus/ (Deficit)
Chatham	3%	0	7	(7)
Durham	15%	30	28	2
Franklin	3%	0	6	(6)
Granville	3%	0	6	(6)
Johnston	9%	0	18	(18)
Lee	3%	0	6	(6)
Orange	7%	30	14	16
Person	2%	0	4	(4)
Vance	2%	11	5	6
Wake	50%	98*	94	4
Warren	1%	0	2	(2)
Total	**100%**	**169**	**189**	**(20)**

Source: NCOSBM
* Includes 14 beds that have been approved, but are not operational.
Calculated columns may not total due to rounding.
[Chatham County rehabilitation beds based on HSA IV population = (64,553/ 1,858,110) X 189 =.0347 X 189 = 6.558]

As shown in the table above, based on population alone, Johnston County could support the (8) beds that Johnston is requesting. It should be noted that the SMFP uses multi-county HSAs (Health Service Areas) as the basis for planning rehabilitation services and not individual counties, thus, recognizing the specialized, regional nature of rehabilitation services. The table also shows that UNC and WakeMed each have enough beds to support their home counties as well as some other contiguous and regional counties in their tertiary base. Additionally, Johnston did not demonstrate that projected utilization is based on reasonable and supported assumptions.

If HSA IV were divided into geographic and major travel route sub-regions, the following groupings can be utilized to further refine rehabilitation bed need. The North group shows a deficit of 4 beds, the West group shows a surplus of 3 beds, and the East group shows a deficit of 20 beds. The North and West groups basically offset one another, leaving the East group with a deficit of 20 beds: the same number of beds available in this review.

HSA IV County	HSA IV Estimated Population 2011	HSA IV # Existing Rehab Beds	# Existing and Proposed Rehab Beds Allocated Based on HSA IV Population	Bed Surplus/ (Deficit)
NORTH				
Durham	15%	30	28	
Granville	3%	0	6	
Person	2%	0	4	
Vance	2%	11	5	
Warren	1%	0	2	
North Totals	**23%**	**41**	**45**	**(4)**
WEST				
Chatham	3%	0	7	
Lee	3%	0	6	
Orange	7%	30	14	
West Totals	**13%**	**30**	**27**	**3**
EAST				
Franklin	3%	0	6	
Johnston	9%	0	18	
Wake	50%	98*	94	
East Totals	**62%**	**98***	**118**	**(20)**
HSA IV Totals	**100%**	**169**	**189**	**(20)**

Source: NCOSBM
* Includes 14 beds that have been approved, but are not operational.
Calculated columns may not total due to rounding.
[Chatham County rehabilitation beds based on HSA IV population =
(64,553/ 1,858,110) X 189 =.0347 X 189 = 6.558]

The current and projected population of HSA IV is shown in the following table.

HSA IV Population by County 2011 and 2019 Projected

	Population 2011		Projected Population 2019		Increase from 2011 - 2019	
	#	%	#	%	#	%
Wake	925,938	50%	1,077448	51%	151,510	16%
Durham	272,314	15%	300,540	14%	28,226	10%
Johnston	172,570	9%	195,243	9%	22,673	13%
Orange	135,776	7%	151,418	7%	15,642	12%
Chatham	64,553	3%	74,608	4%	10,055	16%
Franklin	61,651	3%	71,238	3%	9,587	16%
Granville	60,863	3%	64,965	3%	4,102	7%
Lee	58,304	3%	61,444	3%	3,140	5%
Vance	45,558	2%	46,681	2%	1,123	2%
Person	39,700	2%	43,588	2%	3,888	10%
Warren	20,883	1%	20,826	1%	-57	-0.3%
Total	**1,858,110**	**100%**	**2,107,999**	**100%**	**249,889**	**13%**

Source: NC OSBM, as of 1/8/13

As the table above reflects, 50% of HSA IV currently resides in Wake County and 51% of the HSA's population is projected to reside in Wake County in 2019. Wake County is projected to have the highest percentage growth during the 8-year period at 16%. Its projected growth alone (151,510) is 77% of Johnston County's total projected population in 2019 (195,243). Orange County is the smallest of the three counties with proposed projects.

Projected patient origin for each applicant is described below and in the table that follows:

- UNC proposes to expand its existing rehabilitation program to meet projected future demand and support expansion of the Physiatry residency program. Of the population it proposes to serve, 15.7% will come from Orange County, 10.0% will come from Wake County, 23.6% will come from the remainder of HSA IV and 44.8% will come from contiguous HSAs: 13.8% from HSA II, 20.5% from HSA V, and 10.6% from HSA VI, and 5.9% from other counties and out of state.
- WakeMed proposes to expand its rehabilitation facility by constructing 29 beds to replace semi-private rooms and to add 12 additional beds for a total complement of 110 rehabilitation beds. WakeMed proposes to expand its existing rehabilitation program to meet current and projected demand for services at its existing facility. Of the population it proposes to serve, 57% will come from Wake County, 19.1% from the remainder of HSA IV, 18.1% from contiguous HSAs V and VI, and 5.4% from other counties and out of state (PY2).
- Duke Raleigh proposes to develop a new 12-bed inpatient rehabilitation unit for which the applicant proposes that 65.5% of the patients to be served will come from Wake County, 19.0% from other HSA IV Counties, and 15.1% from other counties (PY2).

- Johnston proposes to develop a new 8-bed inpatient rehabilitation unit for which the applicant proposes that 84.0% of the patients will come from Johnston County, 5.7% from Wake County which is in HSA IV, 3.6% from HSA V, 1.6% from HSA VI and 5.0% from other counties (PY1-2).

HSA IV Projected Patient Origin by Applicant – Project Year Two

	UNC	WakeMed	Duke Raleigh	Johnston
HSA IV:				
Chatham	7.9%	0.2%	0.0%	
Durham	5.5%	0.9%	0.3%	
Franklin	0.5%	4.2%	5.9%	
Granville	0.0%	.4%	0.4%	
Johnston	2.3%	11.1%	7.5%	84.0%
Lee	4.8%	0.5%	0.4%	
Orange	15.7%	0.2%	0.3%	
Person	1.3%	0.1%	0.0%	
Vance	1.3%	1.0%	4.2%	
Wake	10.0%	57.5%	65.5%	5.7%
Warren	0.0%	0.3%		
Total HSA IV	**49.3%**	**76.5%**	**84.7%**	**90.8%**
Contiguous HSAs:				
Total HSA II	13.8 %			
Total HSA V	20.5%	10.4%		3.6%
Total HSA VI	10.6%	7.7%		1.6%
Other				
Other	3.8%	5.4%	14.9%	5.0%
Total Patients	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Based on the patient origin of rehabilitation patients in HSA IV, historical and projected utilization, the current and projected population of HSA IV, the distribution of beds in HSA IV and the occupancy of current IRFs in HSA IV, the proposals by **WakeMed** and **Duke Raleigh** are the most effective alternatives with regard to the addition of rehabilitation beds in HSA IV.

Demonstration of Need

Johnston does not adequately demonstrate how the proposed patient origin for the proposed rehabilitation services will be identical to its current acute care services patient origin, including whether there is any connection between its acute care inpatients' diagnoses/conditions and projected rehabilitation diagnoses. In addition, Johnston does not adequately demonstrate the basis for the non-Johnston County projections, in particular its projection of 5.7% of projected rehabilitation patients from Wake County. Johnston did not demonstrate that the proposed utilization is based upon reasonable and supported assumptions. See Criterion (3), which is hereby incorporated by reference as if fully set forth herein, for discussion.

UNC, Duke Raleigh and **WakeMed** adequately demonstrated the need the population proposed to be served has for its proposal. Therefore the proposals submitted by **UNC, WakeMed** and **Duke Raleigh** are the most effective alternatives with regard to demonstration of need. See Criterion (3), which is hereby incorporated by reference as if fully set forth herein, for discussion.

Scope of Rehabilitation Services

The table below compares the South Atlantic Patient Mix by medical condition with the current patient mix for UNC and WakeMed and the proposed patient mix for Duke Raleigh and Johnston. The distribution of UNC and WakeMed's cases is similar to the distribution of the South Atlantic cases. Duke Raleigh is proposing a mix similar to its acute care discharge mix, while Johnston is proposing a mix that is not related to its acute care discharge history.

Comparison of Patient Mix by Medical Condition

RIC	eRehabData	UNC	WakeMed	Duke Raleigh	Johnston
	Patient Mix				
Stroke	25.0%	25.2%	23.8%	13.9%	27.3%
Brain Injury	8.0%	10.5%	9.9%	13.9%	8.6%
Spinal Cord Injury	6.8%	14.8%	8.0%	6.8%	0.0%
Neurological	4.3%	5.9%	3.7%	7.4%	4.3%
Orthopaedic	26.1%	15.0%	28.8%	36.8%	28.1%
Amputation	4.4%	5.5%	4.2%	9.4%	4.3%
Cardiac	5.9%	0.5%	6.7%	1.0%	6.5%
Major Multiple Trauma	1.8%	7.5%	0.0%	0.0%	2.2%
Miscellaneous	15.0%	12.9%	14.8%	10.6%	17.3%
Other*	2.7%	2.1%	0.0%	0.3%	1.4%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Time Period	Jan.-June 2010	FY12	2012 Annualized	FY15 Projected	FY15 Projected

eRehabData = South Atlantic Patient Mix
Other includes: Arthritis, pulmonary, pain syndrome, Guillain Barre and Burns.

As tertiary hospitals, trauma centers and current providers of comprehensive inpatient rehabilitation programs, UNC and WakeMed already offer a broader range of inpatient rehabilitation services than either Duke Raleigh or Johnston propose. The primary services each applicant proposes to serve are listed below:

- UNC proposes to provide services primarily for the following rehabilitation types: traumatic and non-traumatic spinal cord injury, traumatic and non-traumatic brain injury, stroke, neurological, amputation, arthritis, orthopaedic, major multiple trauma, cardiac, and burn (see Section II, page 37 and Section IV.1, page 69). UNC also projects to provide services for pediatric patients in addition to adults.
- WakeMed proposes to provide services for the following rehabilitation types: traumatic and non-traumatic spinal cord injury, traumatic and non-traumatic brain injury, stroke/CVA, neurological, cardiac, pulmonary, major multiple trauma, orthopaedic, and amputation. WakeMed also proposes providing services for pediatric patients, in addition to adult patients, (see Section II.2(d), pages 12-19).

- Duke Raleigh proposes to provide services primarily for the following rehabilitation types: stroke, neurological, non-traumatic brain injury, orthopaedic, and amputation (see Section IV.1, page 37).
- Johnston proposes to provide services primarily for the following rehabilitation types: stroke, neurological, non-traumatic brain injury, cardiac, and orthopaedic (see Section III.1(b), page 82).

Some specific differences between services that the four programs propose are noted below (all PY3 projections):

- UNC projects 17 burn victims. UNC has the only burn unit in HSA IV and only one of two in the state. WakeMed, Duke Raleigh, and Johnston do not project any burn patients.
- WakeMed projects 48 pediatric patients, UNC projects 14 pediatric patients; Duke Raleigh and Johnston do not propose serving pediatric patients.

As stated above, UNC and WakeMed currently offer a broader range of inpatient rehabilitation services than either Duke Raleigh or Johnston propose. UNC proposes to serve a full complement of rehabilitation diagnosis categories, is one of only two burn units in the state and the only burn unit in HSA IV. However, UNC's projections are very small for several categories, such as cardiac and Guillain Barre. Furthermore, UNC's application cannot be approved because it failed to demonstrate the financial feasibility of the proposed project is based on reasonable projections of costs and revenues. WakeMed's proposal provides more comprehensive coverage of diagnoses, and also proposes serving the largest number of pediatric patients. Therefore, **WakeMed's** proposal is the most effective alternative with regard to providing a broader scope of rehabilitation services.

Because UNC and WakeMed are tertiary hospitals, trauma centers and current providers of comprehensive inpatient rehabilitation programs, it is not necessary or appropriate for every other provider of inpatient rehabilitation services in HSA IV to provide the same level of services. There are some inpatient rehabilitation services that can be well-served by an IRF that serves a critical mass of acute care patients with DRGs that are appropriate for inpatient rehabilitation. Johnston does not fall into this category because it does not serve many acute care patients whose conditions are appropriate for an IRF; however Duke Raleigh demonstrated that it's current and projected utilization is reasonable. Therefore, **Duke Raleigh** is the better alternative with regards to smaller IRFs that focus on the more common rehabilitation cases: orthopaedic, stroke, brain injury and spinal cord injury.

Access by Underserved

The following table illustrates each applicant's projected percentage of patient days to be provided to Medicaid, Medicare and Self Pay patients in the second year of operation following completion of the project. Those projections are compared to the most recent five-year average for statewide rehabilitation facilities based on cases. Note that case mix (RIC) affects payor mix: trauma patients and pediatric patients are more likely to be Medicaid, while Stroke and Orthopaedic patients are more likely to be Medicare.

Applicant	Projected Medicaid Patient Days as % of Total	Projected Medicare Patient Days as % of Total	Projected Self Pay Patient Days as % of Total	Combined Medicaid, Medicare & Self Pay
UNC	22.1%	44.9%	7.4%	74.4%
WakeMed	15.4%	55.5%	2.5%	73.4%
Duke Raleigh	14.4%	61.5%	0.8%	76.7%
Johnston	21.8%	60.2%	3.1%	85.1%
Rehabilitation – 5-Year State Avg. FFY 07-11 (based on cases)	10.3%	58.6%	3.1%	72.0%

Sources: Section VI.12 of each application, Cecil G. Sheps Center

All four applicants propose to serve the medically underserved at rates that exceed the state average for the combined percentage of Self Pay, Medicaid and Medicare. UNC and Johnston each project serving a higher percentage of Medicaid patients than WakeMed or Duke Raleigh. However, UNC and Johnston are not approvable. With regard to Medicare patients, Duke Raleigh, Johnston, and WakeMed each propose serving a significantly higher percentage of Medicare patients than UNC. However, Johnston is not approvable. With regard to Self Pay patients, UNC proposes serving a significantly higher percentage of Self Pay days of care than the other three applicants; however its application is not approvalable. Therefore **WakeMed** and **Duke Raleigh** are the more effective proposals with regard to the combined access by Medicaid, Medicare and Self Pay patients because they are conforming to all applicable review criteria.

Access to Alternative Providers

There are four inpatient rehabilitation providers in HSA IV:

- Durham Regional, in Durham County,
- Maria Parham, in Vance County, the northern part of the HSA,
- UNC in Orange County, the middle-western part of the HSA, and
- WakeMed in Wake County, the center of the HSA.

Two of the four providers, UNC and WakeMed, have proposed developing additional beds at their facilities. The other two applicants are proposing new inpatient rehabilitation services: Duke Raleigh also located in Wake County, and Johnston, in Johnston County, the southeastern part of the HSA. Based on 2011 data, Wake County has 49.8% of HSA IV's population and 51.7% of HSA IV's inpatient rehabilitation patient days of care. Located in the southeastern part of the HSA, the southeastern part of Johnston County has less geographical access to care in HSA IV than patients in Orange or Wake counties. However, Johnston County is more rural with 9.3% of HSA IV's population and 11.1% of HSA IV's inpatient rehabilitation days of care. With regard to providing patient access to alternative inpatient rehabilitation providers, the proposals submitted by **Duke Raleigh** and **Johnston** are the more effective alternatives; however Johnston is not approvable.

Continuity of Care

In Section III.1, pages 57-60, **UNC** discusses the importance of continuum of care.

> *"UNC provides unparalleled depth and continuity of acute and rehabilitative services as a Level 1 Trauma Center, an academic medical facility, and the main teaching hospital for the University of North Carolina School of Medicine.*
> …
> *The Inpatient Rehabilitation Center is integral to the overall continuum of care of UNC Hospitals. Additional capacity is needed to provide timely and appropriate care for patients that are waiting discharge from the acute care beds. Moving patients through the continuum without delay promotes patient recovery and lower lengths of stay. However on some days the inpatient rehabilitation census reaches full capacity and patient admissions and transfers are delayed."*

UNC has 30 inpatient rehabilitation beds and 2011 utilization of 83.1%.

In Section II.1, pages 29-31, **WakeMed** discusses its continuum of care model.

> *"WakeMed Rehabilitation Hospital has developed a wide continuum of rehabilitation therapies, staffed by a full complement of nurses, therapists, physiatrists, case managers, and others who work collaboratively to develop and implement a unique plan of care for each rehab patient. The importance of the plan of care cannot be overstated – this plan ensures that each patient receives a level of care appropriate to his/her physical and emotional condition …*
>
> *WakeMed Rehab is organized according to a continuum of care model for the provision of rehabilitation services. This continuum model serves to provide clientele with a vertically integrated system and alternative settings for receiving services based on individual client need and preference. All rehabilitation components within the continuum share common missions, philosophies and standards of practice. …*
>
> *The Rehab continuum is organized under one administrative/management team. This allows program components to share resources, clinical expertise and standards of care. Because of this standardization, patients can expect seamless provision of care as they move between acute care, inpatient rehab, SNF rehab, home health and outpatient rehab."*

WakeMed is licensed for and operated 84 beds in 2011 with an occupancy rate of 92.7%. An additional 14 beds have been approved and are expected to become operational in 2013.

In Section III.1, page 60, **Duke Raleigh** states:

> *"Centers for Medicare and Medicaid Services (CMS) established a post-acute reform plan with a vision of becoming more patient-centered which will increase consumer choice of post-acute-care services. Additionally, CMS stated that a seamless continuum of care and transition between settings is necessary, and thus, improved coordination is needed between acute care, post-acute care, and long-term services. Health information systems that are interoperable across settings will support the delivery of coordinated and higher quality care."*

Regarding continuity of care, **Johnston** states in Section III.1, page 59:

> *"According to the American Medical Association, continuity of care is comprised of three components: continuity in information, continuity in healthcare management, and continuity in the physician-patient relationship. Continuity of care ensures that patients are provided healthcare services in a coordinated manner without disruption despite the involvement of different physicians/specialists. All parties involved in a patient's healthcare, including the patient, communicate and coordinate care."*

Duke Raleigh and Johnston each state that its own proposal would fill a gap in the provision of a more complete continuum of care within their system by allowing their acute care patients to remain in-house for inpatient rehabilitation care. In Section III.1, page 63, Duke Raleigh demonstrates that the DUHS facilities' acute care services generated demand for 171 potential inpatient rehabilitation patients in FY12, with 132 of those coming directly from Duke Raleigh. The remaining 39 were from Duke University Hospital or Durham Regional Hospital and lived in Wake, Franklin or Johnston counties.

In Section III.1, page 59, Johnston states that it discharged 39 patients in FY11 from its acute care services to an IRF.

Regarding continuity of care, **Duke Raleigh** provides the better option for increasing continuity of care within a hospital system that does not have inpatient rehabilitation beds. Because of its much higher occupancy, **WakeMed** provides the better option for maintaining continuity of care within a hospital system that is currently operating inpatient rehabilitation beds.

Private vs. Semi-Private Rooms

HSA IV's inpatient rehabilitation beds are divided between semi-private and private beds as follows:

	Current # Semi-Private Beds	**Current # Private Beds**	**Current # Total Beds**	**Current % Private Beds**	**Proposed # Semi-Private Beds**	**Proposed # Private Beds**	**# Total Beds Combined**	**Proposed % Private Beds**
UNC	18	12	**30**	40%	18	24	**42**	**57%**
WakeMed	58	40	**98**	41%	0	110	**110**	**100%**
Duke Raleigh			**0**	-	2	10	**12**	**83%**
Johnston			**0**	-		8	**8**	**100%**

Regarding the need to increase private patient rooms, **UNC** states in Section III.1, page 60:

> *"The addition of private patient rooms will support higher utilization of all types of rehabilitation patients including pediatric patients and burn patients. These patient categories require private rooms for infection control and patient privacy concerns and also to better meet the patients' psychosocial treatment needs.*

… Private patient rooms reduce the risk of hospital-acquired infections, allow for greater flexibility in operation and management, and have a positive therapeutic impact on the patients."

WakeMed discusses its move toward more private patient rooms in Section III.1, page 76:

"WakeMed Rehab Hospital opened in 1990 with a number of semi-private rooms, which was the standard of care in inpatient rehabilitation facilities at that time. Over the ensuing 22 years, there has been an industrywide shift toward providing inpatient rehabilitation care in private rooms, which has mirrored a similar trend in inpatient acute care. Private patient rooms enhance patient privacy, improve patient and family satisfaction, and offer better infection control for patients who may be immunocompromised. Likewise, semi-private rooms can only accommodate patients of a single sex, which makes patient placement a continual issue. Historically, the chief patient complaint regarding WakeMed Rehab Hospital has been its semi-private rooms. Patients who have been in private rooms during their acute inpatient hospital admission are frequently dissatisfied with placement in semi-private rooms during their inpatient rehabilitation stay."

Duke Raleigh is proposing to develop 10 private beds and 2 semi-private beds, while **Johnston** is proposing 8 private beds.

With regard to providing the highest percentage of private beds, WakeMed and Johnston provide the better options regarding the highest percentages of private beds; however Johnston's application is not approval. Therefore, **WakeMed** provides the better option regarding the highest percentage of private beds.

Gross Revenue

The following table compares the applicants' projected gross patient revenue per patient day, as presented in the respective applications. Projected revenues and patient days for the applicants are from the ProForma Section of the respective applications. The first Project Year for each applicant is as follows:

UNC:	July 1, 2014 – June 30, 2015,
Duke Raleigh:	July 1, 2014 – June 30, 2015,
Johnston:	October 1, 2014 – September 30, 2015
WakeMed:	October 1, 2016 – September 30, 2017.

Although WakeMed's first year of operation is two years later than the other three proposals', its much larger bed count and patient population create economies of scale.

Gross Patient Revenue	**UNC** PY3 (FFY17)	**Duke Raleigh** PY3 (FY17)	**Johnston** PY3 (FFY17)	**WakeMed** PY1 (FFY17)
Patient days	13,422	3,999	2,502	32,839

Gross Patient Revenue	$22,308,075	$10,633,155	$4,656,112	$166,167,803
Gross Patient Revenue per patient day	$1,662	$2,659	$1,861	$5,050

Duke Raleigh and Johnston are proposing smaller, new programs, with lower patient acuity and ALOS; therefore they would be expected to have the lower gross patient revenue per patient day. Conversely, UNC and WakeMed have the more comprehensive rehabilitation programs and serve patients with longer ALOS and more complex conditions on average. Their gross patient revenue per patient day would be expected to be higher. Furthermore a direct comparison of the programs could not be made because of differences in patient acuity, case complexity, and scope of services offered.

- As indicated in the table above, **UNC** projects the lowest gross patient revenue per patient day; however it failed to demonstrate that the financial feasibility of the proposed project is based on reasonable projections of costs and revenues. As discussed in Criterion (5), the current gross revenue reported by UNC ($11,345,670 for FY12) is not supported by the historical and current gross revenue charges ($21,300,974 for FFY11) provided by the Cecil G. Sheps Center[4]. This issue was raised in the J-8630-11 review, but was not addressed by the applicant in this review.
- **Johnston** proposes the lower gross patient revenue per patient day of the two proposed smaller, new rehabilitation units; therefore, Johnston would be the more effective alternative with regard to gross patient revenue. However, the proposal submitted by Johnston is not based on reasonable and supported assumptions of projected utilization and thus the projection of revenues is not reasonable or credible.
- **Duke Raleigh**'s projected gross patient revenue per patient day is based on reasonable and supported assumptions for projected utilization. Therefore, Duke Raleigh's gross revenue projections are reasonable. Therefore, **Duke Raleigh** is the most effective alternative among the smaller, new programs.
- **WakeMed** projects the highest gross revenue per patient day. **WakeMed** is the most effective alternative with regard to gross patient revenue among the more comprehensive rehabilitation programs because its gross revenue is based on reasonable and supported assumptions of projected utilization.

Net Revenue

The following table compares the applicants' projected total net patient revenue for inpatient rehabilitation services per patient day, as presented in the respective applications. Projected revenues for the applicants are from the ProForma Section of the respective applications. UNC's patient days are from Section IV of its application. The other applicants' patient days are from the ProForma Section. The first Project Year for each applicant is as follows:

[4] The Cecil G. Sheps Center for Health Services Research is under contract with the Division of Health Service Regulation (DHSR) to maintain, for use in research and state health planning the NC Discharge Databases (Inpatient, Ambulatory Surgery and Emergency Department) collected by Truven Health Analytics (Truven). Yearly updates from Truven keep the research database current. Since 1996, hospitals have reported data to Truven (formerly Solucient, Thomson Healthcare and Thomson Reuters) as set forth by the Medical Care Data Act of 1995.

UNC:	July 1, 2014 – June 30, 2015,
Duke Raleigh:	July 1, 2014 – June 30, 2015,
Johnston:	October 1, 2014 – September 30, 2015
WakeMed:	October 1, 2016 – September 30, 2017.

Although WakeMed's first year of operation is two years later than the other three proposals', its much larger bed count and patient population create economies of scale.

Net Patient Revenue	**UNC** PY3 (FFY17)	**Duke Raleigh** PY3 (FY17)	**Johnston** PY3 (FFY17)	**WakeMed** PY1 (FFY17)
Patient days	13,422	3,999	2,502	32,839
Net Patient Revenue	$15,393,620	$5,684,811	$3,335,484	$49,731,564
Net Patient Revenue per patient day	$1,147	$1,422	$1,333	$1,514
ALOS	16.3	12.9	13.6	16.1

Duke Raleigh and Johnston are proposing smaller, new programs, with lower patient acuity and a shorter ALOS; therefore they would be expected to have lower net patient revenue per patient day. Conversely, UNC and WakeMed have the more comprehensive rehabilitation programs and serve patients with longer ALOS and more complex conditions on average. Their net patient revenue per patient day would be expected to be higher. Furthermore a direct comparison of the programs could not be made because of differences in patient acuity, case complexity, and scope of services offered.

- As indicated in the table above, **UNC** projects the lowest net revenue per patient day of the four applicants; however its revenue projections are not based on reasonable and supported assumptions. As discussed in Criterion (5), the current gross revenue reported by UNC ($11,345,670 for FY12) is not supported by the historical and current gross revenue charges ($21,300,974 for FFY11) provided by the Cecil G. Sheps Center[5]. This is a discrepancy of nearly 88%. Net patient revenues will be similarly affected by these understated revenues.
- **Johnston** proposes the lower net patient revenue per patient day of the two smaller, new rehabilitation units; therefore, Johnston would be the more effective alternative with regard to net patient revenue. However, the proposal submitted by Johnston is not based on reasonable and supported assumptions of patient utilization that also affects the reasonableness and credibility of per patient revenues.
- **Duke Raleigh** proposes the second highest net revenue per patient day of the four applicants. Its projected utilization and days of care are based on reasonable and supported assumptions; therefore it is the more effective alternative among the two smaller, new rehabilitation units with regard to net patient revenue per patient day.

[5] The Cecil G. Sheps Center for Health Services Research is under contract with the Division of Health Service Regulation (DHSR) to maintain, for use in research and state health planning the NC Discharge Databases (Inpatient, Ambulatory Surgery and Emergency Department) collected by Truven Health Analytics (Truven). Yearly updates from Truven keep the research database current. Since 1996, hospitals have reported data to Truven (formerly Solucient, Thomson Healthcare and Thomson Reuters) as set forth by the Medical Care Data Act of 1995.

- **WakeMed** proposes the highest net revenue per patient day of the four applicants; however among the two more comprehensive rehabilitation programs it is the most effective alternative with regard to net patient revenue per patient day because its net revenue is based on reasonable and supported assumptions of projected utilization.

Operating Costs

The following table illustrates the applicants' projected operating costs for inpatient rehabilitation services per patient day. The data shown in the table below is taken from the ProForma Section of each application. Operating costs include direct and indirect expenses for inpatient rehabilitation services. The first Project Year for each applicant is as follows:

UNC:	July 1, 2014 – June 30, 2015,
Duke Raleigh:	July 1, 2014 – June 30, 2015,
Johnston:	October 1, 2014 – September 30, 2015
WakeMed:	October 1, 2016 – September 30, 2017.

Although WakeMed's first year of operation is two years later than the other three proposals', its much larger bed count and patient population create economies of scale.

Inpatient Rehabilitation Cost per Patient Day	UNC	Duke Raleigh	Johnston	WakeMed
PY1				
Patient days	11,507	3,307	1,906	32,839
Direct Expenses	$8,210,086	$2,696,2311	$1,143,980	$27,340,915
Indirect Expenses	$4,282,083	$558,765	$1,174,080	$12,872,888
Total Expenses	$12,492,169	$3,254,996	$2,318,060	$40,213,803
Cost Per patient Day	$1,189	$984	$1,216	$1,225
PY2				
Patient days	12,428	3,791	2,423	33,366
Direct Expenses	$8,740,971	$2,885,917	$1,183,475	$28,190,304
Indirect Expenses	$4,557,306	$577,059	$1,295,996	$13,846,890
Total Expenses	$13,298,277	$3,462,976	$2,479,471	$42,037,194
Cost Per patient Day	$1,070	$913	$1,023	$1,260
PY3				
Patient days	13,422	3,999	2,502	33,905
Direct Expenses	$9,528,647	$3,001,343	$1,201,723	$29,384,704
Indirect Expenses	$4,965,658	$588,046	$1,349,625	$14,375,720
Total Expenses	$14,494,305	$3,589,389	$2,551,348	$43,760,424
Cost Per patient Day	$1,080	$898	$1,020	$1,291

Inpatient Rehabilitation Cost per Patient Day				
Project Year	**UNC**	**Duke Raleigh**	**Johnston**	**WakeMed**
PY1	$1,189	$984	$1,216	$1,225
PY2	$1,070	$913	$1,023	$1,260
PY3	$1,080	$898	$1,020	$1,291

Duke Raleigh and Johnston are proposing smaller, new programs, with lower patient acuity and ALOS; therefore they would be expected to have lower costs per patient day. UNC and WakeMed have the more comprehensive rehabilitation programs and serve patients with more complex conditions; therefore the operating costs for providing services would be higher than at smaller, new, lower acuity programs. Furthermore a direct comparison of the programs could not be made because of differences in patient acuity, case complexity, and scope of services offered.

- As indicated in the table above, **WakeMed** projects a higher cost per patient day than UNC, in the 2nd and 3rd operating years. However, UNC's gross patient revenues are not based on reasonable and supported assumptions, therefore UNC's cost per patient day is also not reasonable.
- **Johnston** projects a higher cost per patient day than Duke Raleigh. In addition, Johnston's projected days of care are not based on reasonable and supported assumptions of utilization, which affects cost per patient day.
- **Duke Raleigh**'s projected days of care are based on reasonable and supported assumptions of utilization; therefore it is the more effective alternative among the two smaller, new rehabilitation units with regard to cost per patient day
- **WakeMed** is the more effective alternative among the two more comprehensive rehabilitation programs with regard to cost per patient day because its costs are based on reasonable and supported projected utilization.

Financial Feasibility

Above, the applicants' net revenues were compared separately from their operating costs. However, bringing revenues and costs together provides a more complete picture of each proposal's financial feasibility as shown in the table below:

	UNC	**Duke Raleigh**	**Johnston**	**WakeMed**
	PY3 (FFY17)	PY3 (FY17)	PY3 (FFY17)	PY1 (FFY17)

Net Patient Revenue	$15,393,620	$5,684,811	$3,335,484	$49,731,564
Total Expenses	$14,494,305	$3,589,389	$2,551,348	$40,213,803
Net Patient Revenue per patient day	$1,147	$1,422	$1,333	$1,514
Total Operating Costs per patient day	$1,080	$898	$1,020	$1,225
Difference	$67	$542	$313	$289

- As indicated in the table above, **UNC** has smallest difference (net income) between patient revenue and expenses of $67. The current gross revenue reported by UNC ($11,345,670 in FY12) is not supported by the historical and current ($21,300,974 for FFY11) gross revenue charges provided by the Cecil G. Sheps Center[6]. The discrepancy is almost 88%. Moreover, as discussed in Criterion (5), UNC's revenue projections are not reliable.
- **Duke Raleigh** has the largest positive difference (net income) between patient revenue and expenses of $542. However, Duke Raleigh's proposed revenues and expenses are based on reasonable and supported assumptions. Therefore among the two smaller, new rehabilitation units with regard to financial feasibility of the proposed project, Duke Raleigh is the more effective alternative.
- **Johnston**'s proposed revenues and expenses are not based on reasonable and supported projected utilization, as discussed in Criteria (3) and (5).
- **WakeMed** has the second smallest difference (net income) between patient revenue and expenses of $289 and its projected revenues and expenses are based on reasonable and supported assumptions. Therefore; it is the more effective alternative among the two more comprehensive rehabilitation programs with regard to financial feasibility of the proposed project.

SUMMARY

The following is a summary of the reasons the proposals submitted by **WakeMed** and **Duke Raleigh** are determined to be the most effective alternatives in this review.

WakeMed

- Proposes to offer a greater scope of comprehensive and intensive rehabilitation services than the other applicants propose.
- Currently operates at 92.7% of the capacity of its existing rehabilitation beds.
- Adequately demonstrated the need for the proposed 12 additional inpatient rehabilitation beds. See Criterion (3) for discussion.
- Conforms to all applicable statutory and regulatory criteria
- Proposes the second lowest net income of the four applicants.

[6] The Cecil G. Sheps Center for Health Services Research is under contract with the Division of Health Service Regulation (DHSR) to maintain, for use in research and state health planning the NC Discharge Databases (Inpatient, Ambulatory Surgery and Emergency Department) collected by Truven Health Analytics (Truven). Yearly updates from Truven keep the research database current. Since 1996, hospitals have reported data to Truven (formerly Solucient, Thomson Healthcare and Thomson Reuters) as set forth by the Medical Care Data Act of 1995.

- Proposes the highest number and percentage of private rooms at project completion 110 beds (100%).

Duke Raleigh

- Conforms to all applicable statutory and regulatory review criteria.
- Proposes to offer a scope of rehabilitation services that addresses its growing population of residents over 65.
- Proposes the more effective alternative with regard to alternative providers in HSA IV.
- Proposes the lowest cost per patient day of the four applicants.
- Proposes to serve the 2nd highest percentage of combined Medicaid, Medicare and Self Pay patients of the applications
- Development of the rehabilitation unit allows the facility to enhance its continuity of care

UNC

- Does not conform to all applicable statutory and regulatory review criteria. See discussion for Criteria (1), (4), (5), and (18a).
- Provides revenue projections that are based on unreliable information. (See Criterion (5) for discussion.)
- Failed to demonstrate the financial feasibility of proposed project is based on reasonable projections of costs and revenues
- Proposes to serve a lower percentage of Medicare recipients than the approved applicants.
- Proposes the lowest percentage of private beds at 57%.

Johnston

- Does not conform to all applicable statutory and regulatory review criteria. See discussion for Criteria (1), (3), (4), (5), (6), (18a) and 10A NCAC 14C .2800.
- Projected patient origin and projected utilization are based on unreasonable assumptions. (See Criterion (3) for discussion.)
- Does not adequately identify population to be served or the need to population to be served has for the proposed service.
- Failed to demonstrate the financial feasibility of proposed project is based on reasonable projections of costs and revenues

CONCLUSION

Each applicant is individually conforming with the need determination in the 2012 State Medical Facilities Plan for 20 rehabilitation beds in HSA IV. However, N.C. General Statute Section 131E-183(a)(1) states that the need determination in the SMFP is a determinative limit on the number of rehabilitation beds that can be approved by the CON Section. The CON Section determined that the applications submitted by WakeMed and Duke Raleigh as conditioned below, are the most effective alternatives proposed in this review for the development of the 20 rehabilitation beds needed in HSA IV. UNC is non-conforming with Criteria (1), (4), (5), and (18a) and therefore, is not approvable. Johnston

is non-conforming with Criteria (1), (3), (4), (5), (6), (18a) and 10A NCAC 14C .2800 and therefore, is not approvable. The approval of another application would result in rehabilitation beds in excess of the need determination. Therefore, the applications submitted by UNC and Johnston are denied.

WakeMed proposes to add 12 new inpatient rehabilitation beds and Duke Raleigh proposes developing 12 new inpatient rehabilitation beds which would result in the development of a total of 24 new rehabilitation beds. All 24 beds cannot be approved, since it would result in the approval of beds in excess of the need determination in the 2012 SMFP. The determination of bed allocation between WakeMed and Duke Raleigh was made based on a comparison of the following alternatives:

Alternative 1: Approve 10 beds for each applicant
Alternative 2: Approve 8 beds at WakeMed and 12 beds at Duke Raleigh
Alternative 3: Approve 8 beds at Duke Raleigh and 12 beds at WakeMed

Performance Standard 10A NCAC 14C .2803(b) states: *"An applicant proposing to establish new rehabilitation beds shall not be approved unless occupancy is projected to be 80 percent for the total number of rehabilitation beds to be operated in the facility no later than two years following completion of the proposed project."*

	Operating Year 2	Projected Days	Alternative 1	Alternative 2	Alternative 3
Duke Raleigh	CY 2015	3,549			
# New Beds			10	12	8
Occupancy			97%	81%	121.5%
WakeMed	FFY18	33,366			
# New Beds			10	8	12
Total # Beds			108	106	110
Occupancy			85%	86%	83%

Duke Raleigh projects serving 3,549 days of rehabilitation care during the second year of the project (CY2015).

- With 12 beds, occupancy would be 81%
  - [(3,549/ 365) / 12 = 9.72/ 12 = .8103]
- With 10 beds, occupancy would be 97%
  - [(3,549/ 365) / 10 = 9.72/ 10 = .9723]
- With 8 beds, occupancy would be 121.5%
  - [(3,549/ 365) / 8 = 9.72 / 8 = 1.215]

WakeMed projects serving 33,366 days of rehabilitation care during the second year of the project (FFY18).

- With 12 additional beds (98+12 = 110 total beds), occupancy would be 83%
  - [(33,366 / 365) / 110 = 91.41/ 110 = .8310]
- With 10 additional beds (98+ 10 = 108 total beds), occupancy would be 85%
  - [(33,366 / 365) / 108 = 91.41/ 108 = .8464]
- With 8 additional beds (98 + 8 = 106 total beds), occupancy would be 86%
  - [(33,366 / 365) / 106 = 91.41 / 106 = .8624]

Therefore, Alternative 2, awarding 8 beds to WakeMed and 12 beds to Duke Raleigh allows each provider to operate in conformity with the Performance Standard without being required to operate close to or above capacity.

The application submitted by **WakeMed** is approved, subject to the following conditions:

1. **WakeMed shall materially comply with all representations made in its application as amended by the conditions of approval.**

2. **WakeMed shall develop no more than 8 additional rehabilitation beds for a total of 106 rehabilitation beds upon project completion.**

3. **WakeMed shall construct no more than 29 replacement rehabilitation beds and operate all private rehabilitation beds upon completion of the project.**

4. **WakeMed shall not acquire, as part of this project, any equipment that is not included in the project's proposed capital expenditure in Section VIII of the application and which would otherwise require a certificate of need.**

5. **WakeMed shall acknowledge acceptance of and agree to comply with all conditions stated herein to the Certificate of Need Section in writing prior to the issuance of the certificate of need.**

The application submitted by **Duke Raleigh** is approved, subject to the following conditions:

1. **Duke Raleigh shall materially comply with all representations made in its application as amended by the conditions of approval.**

2. **Duke Raleigh shall develop no more than 12 rehabilitation beds for a total of 12 rehabilitation beds upon project completion.**

3. **Duke Raleigh shall delicense 12 acute care beds upon completion of the project for a total of not more than 174 acute care beds.**

4. **Duke Raleigh shall not acquire, as part of this project, any equipment that is not included in the project's proposed capital expenditure in Section VIII of the application and which would otherwise require a certificate of need.**

5. **Duke Raleigh shall acknowledge acceptance of and agree to comply with all conditions stated herein to the Certificate of Need Section in writing prior to the issuance of the certificate of need.**