University of North Carolina Hospitals at Chapel Hill
Certificate of Need Application for Change of Scope to UNC-Research Triangle Park
Project ID #J-012509-24
Comments on Behalf of Duke University Hospital and Duke University Health System

Duke University Health System, Inc., which operates Duke University Hospital, submits these comments regarding the application filed by University of North Carolina Hospitals (Project ID #J-012509-24) for acute care beds at UNC-Research Triangle Park. That application does not satisfy the applicable statutory and regulatory criteria, is not the comparatively superior project in this comparative review, and should be disapproved.

INTRODUCTION AND HISTORY:

This application represents the third effort on behalf of UNC Medical Center ("UNC") to create/add beds to a new acute care hospital in Research Triangle Park in Durham County. UNC originally proposed that it would open the hospital less than five years after CON approval. While the project has been delayed in litigation, the appeal of the original approval is currently at the North Carolina Court of Appeal and will may be resolved in a matter of months. Nonetheless, **UNC now projects that its hospital facility will not open until July 2032, eight years after the potential conclusion of any appeal of that original approval**. UNC's repeated subsequent "change of scope" applications are the apparent cause of additional delays in the potential time to completion of the original hospital. In the interim, approval of UNC's applications blocks Duke University Hospital from adding the beds it needs to serve its existing patient base without actually providing any needed inpatient services.

Background

2021 Durham County Need Determination

Duke University Hospital ("DUH") and its affiliates generated a need for 40 beds in the 2021 SMFP for the Durham/Caswell service area based on its high utilization. In FY 2020, DUH operated at 79.4% occupancy of licensed and approved beds, 1.4% over the threshold of 78% occupancy for a hospital with an ADC greater than 400. DUH filed Project ID #J-12069-21 ("DUH 2021") to add these needed beds. UNC Hospitals-RTP ("UNC-RTP") filed Project ID # J-12065-21 ("UNC-RTP 2021") for a 40-bed new community hospital to serve low acuity patients without an ICU.

Although the DUH 2021 application was found conforming with all criteria and it demonstrated the need for the beds it needed immediately to address high occupancy levels, the Agency approved UNC-RTP 2021 based on a comparative analysis that it would "increase competition" and geographic access to add a facility to be completed in 2026. Approval of UNC-RTP 2021 project would delay service area residents' access to critically needed beds for 2 years (July 2024 for the DUH 2021 project v. July 2026 for UNC-RTP 2021 implementation) with a $248,408,529 cost differential ($3,500,000 for the DUH 2021 project v. $251,908,529 for the UNC-RTP 2021 project.)

The 2021 review has been under appeal and is currently before the NC Court of Appeals where it has been fully briefed. With a decision to be rendered at any time and absent any further review by the Supreme Court, this project would be open by 2029 according to the initial timeframe for the UNC-RTP 2021 project. Of course, if the Court of Appeals were to reverse UNC-RTP's approval, then it would have no approved project to which it could add beds in this review.

2022 Durham County Need Determination

In 2022, the SMFP again showed a need for 68 beds in the Durham/Caswell service area, again resulting solely from the high utilization at Duke University Hospital. In FY 2021, DUH operated at 83.7% occupancy, 5.7% above the threshold of 78% for a hospital with an ADC of more than 400. DUH filed Project ID #J-12211-22 ("DUH 2022") to add these 68 needed beds.

UNC-RTP filed Project ID # J-012214-22 ("UNC-RTP 2022") as a "change of scope" to UNC-RTP 2021 to add 34 beds to an undeveloped hospital, which now increased its scope to 74 beds at a total cost of $531,214,698 to be opened in 2029. The incremental cost of the 34-bed addition, $279,306,169, cost more than the original UNC-RTP 2021 project. Again, the Agency approved the UNC-RTP 2022 project and denied the application for the DUH 2022 project. This time, the approval of the UNC-RTP 2022 project would delay service area residents' access to critically needed beds for **6 years** (July 2023 for the DUH 2022 project v. July 2029 for the UNC-RTP 2022 implementation) and a **$274,478,169 cost differential** ($4,828,000 for the DUH 2022 project v. $279,306,169 for the UNC-RTP 2022 project). Moreover, the Agency left 34 beds from the 2022 SMFP need determination unapproved even though these beds are needed by service area residents and needed to address capacity constraints at DUH.

While the UNC-RTP 2022 project was initially approved by the Agency, that approval was reversed by the Office of Administrative Hearings. This 2022 application and the DUH 2022 project are now before the Court of Appeals.[1]

2024 Bed Need Determination

The 2024 SMFP shows a need for an additional 38 beds in the Durham/Caswell/Warren service area, again generated by the utilization of DUH and after taking into consideration the placeholder for the 108 total beds from the 2021 and 2022 need determinations. DUH's utilization has continued to grow, and the Agency has the chance to finally address DUH's severe shortage of beds through the addition of 38 urgently needed beds and do so at minimal cost and in an efficient time frame. **DUH now operates at 83.5% occupancy for FY 2022 and 85.3% occupancy for FY2023**, 5.5% to 7.3% above the threshold 78%, respectively, for a hospital with an ADC of more than 400 beds. In this review and discussed further in the comments regarding comparative factors below, DUH has filed Project ID #J-012512-24 to add these 38 needed beds ("DUH 2024" or

[1] The initial ruling that is before the Court of Appeals deals only with Agency error regarding whether a Public Hearing was required to be held during COVID. Even if this ruling is overturned, DUH contends that there were numerous other errors committed by the Agency in approval of the UNC-RTP 2022 project including mathematical errors made by the Agency analyst.

"DUH"). The DUH 2024 project will cost only $4,800,000 and will be implemented by January 1, 2025, by developing beds in existing hospital space.

The Applicant ("UNC-RTP 2024" or "UNC-RTP") now plans to develop much more than the small community hospital. This third iteration of the project now proposes a total of 116 beds and a total cost of over **$902 million**. This hospital for which UNC-RTP has not yet received site approval will not come online until **July of 2032**, meaning that the bed need recognized in the 2021 SMFP based on DUH's high utilization for FY 2019 will not come online for well over a decade. The continued delay in development of needed beds in the Durham/Caswell/Warren County service area and the unnecessary costs of over $900 million are simply inconsistent with the intent and purposes of the CON Statute to increase access to care and ensure cost effectiveness of services.

Moreover, each new iteration of UNC-RTP project takes it further from what was originally approved based on a stated need for a small facility to serve low acuity patients in a community setting. Before even implementing the originally approved small community hospital, UNC is attempting to turn this into a 116-bed hospital with specialty services such as intensive care, interventional radiology, Level II neonatal beds, and inpatient dialysis. With the proposed addition of 20 ICU beds, a large 20-bed OB unit supported by 4 Level II neonatal beds, and a 28-bay ED, as well as services such as interventional radiology, this project would no longer be longer a small, low-acuity, community hospital. This project now clearly and unnecessarily duplicates the services offered in Durham County - particularly by Duke Regional Hospital. Despite this significant change in scope, the need for the project, the projected patient origin, and much of the other required responsive information for many of the relevant Review Criteria has not been updated by UNC-RTP.

Most importantly, the service area residents and DUH's patients who rely on it as a trauma center and regionally and nationally recognized provider of tertiary and quaternary care need access to beds as quickly as possible. Even with 38 additional beds, based on DUH's FY 2023 utilization, it would still operate at 87.2% occupancy in the first year of operation of these new beds. This exceedingly high occupancy rate is why DUH continues to generate a bed need even with a place holder of 78 beds for the UNC-RTP 2021 and the UNC-RTP 2022 projects for beds that will now not come online until July 2032.

2025 Draft Need Determination

The Draft 2025 Bed Need Determination continues to show a need for 82 more beds driven by DUH's high utilization even accounting for placeholders for all beds in the 2021, 2022, and 2024 need determinations. This means DUH actually demonstrates a bed deficit of 238 beds based on its actual utilization. Without any growth factor for 2023, DUH reports 981 non-neonatal licensed beds with 310,870 patient days, an ADC of 852 ADC and an 86.8% occupancy. As a system, DUHS reports 1,279 licensed non-neonatal acute care beds, 381,588 patient days, an ADC of 1,045 ADC and an 81.7% occupancy rate. Please see **Attachment A** for the draft 2025 SMFP acute care

bed need calculation.[2] Awarding beds to another facility that would not come online until 2032 creates potentially critical access issues for residents of the service area and those patients traveling into the service area for care at DUHS in the meantime.

Contingency Planning

Importantly, in its 2024 application, UNC-RTP has not addressed what happens if either the UNC-RTP 2021 and/or 2022 application is ultimately denied. Would it have a 38-bed hospital with no operating rooms? Or a 78-bed hospital if the 2021 application is approved but the 2022 application – which approval was overturned in the contested case hearing – is not? What happens to the building design? What happens to the proposed costs? No information has been provided to show what that project would look like in terms of beds by type, equipment needs, and utilization/projected need for service offerings proposed. It is unreasonable for the Agency to review the 2024 application based only on the assumption that the UNC-RTP 2021 and 2022 project approval will both be upheld.

The specific comments regarding the application below assume, as UNC-RTP apparently does, that CONs will issue for all of its prior projects.

PROJECT REVIEW CRITERIA

Criterion (1): Consistency with the 2024 SMFP

Policy Gen-3: Basic Principles

Maximizing Healthcare Value

Policy Gen-3 requires an applicant to demonstrate how it will maximize healthcare value. It is impossible to determine how the UNC-RTP 2024 project, along with the changes to the 2021 UNC-RTP project and the UNC-RTP 2022 project, could maximize healthcare value. The cost of each incremental project component is not broken out. It is impossible to know what part of the additional "change of scope" costs are related to further delay of the 2021 and 2022 projects and what part is for the additional beds and services proposed in this application. It is impossible to tell what part of the $902 million project is for the initial CON with potential cost overrun/escalation, then second bed addition from 2022 with potential cost overrun/escalation, or the third iteration of the same project with additional beds.

The Applicant started with a base design in 2021. Its 2022 application added multi-floor components to the base design. The most recent application fills in shell area created in 2022 and adds additional adjacent multi-floor wings to the square hub created in the 2022 application. It is

[2] This does not include 81 NICU beds at DUH including 14 level IV beds licensed under Policy AC-3 and 13 Level II neonatal beds at DRH. Patient days represent the non-NICU days used in the 2025 draft SMFP acute care bed need calculation.

impossible to allocate costs between the applications given the nature of the multiple redesigns and the timeframe over which they have proposed. While not a comparative analysis under this policy, there are more cost-effective ways to bring 38 beds to the service area.

Promote Safety and Quality of Care

Policy Gen-3 requires each applicant to demonstrate that it will promote safety and quality of care. UNC-RTP touts its track record of quality but ignores previous citations discussed below regarding Criterion (20) and **Attachment B**.

Promote Equitable Access

Part of ensuring access to care is bringing needed services to the residents in a timely manner. UNC-RTP's project does not achieve this goal. As will be discussed in detail, UNC-RTP 2024 "change of scope" application proposes to further delay the initial UNC-RTP 2021 project to a July 1, 2032 implementation, 3 years later than the last change of scope in 2022 and 6 years later than the original 2021 new hospital CON application, and materially changes the nature of the project as originally proposed. During this prolonged implementation timetable, service area residents will continue to face bed shortages that grow each year. The UNC-RTP project does not promote equitable access.

<u>UNC-RTP Will Not Meet the Need Identified in the 2024 SMFP</u>

The need in the 2024 SMFP is based on acute care patient days from FY 2022 and projected forward four years to FY 2026. Thus, the need outlined in the 2024 SMFP would quantify beds to meet the expected demand in 2026. UNC-RTP projects to address this need with beds that will not come online until July 2032. This is more than six full years later than the need identified in the plan. UNC-RTP's project does not meet the identified need because it does not demonstrate the need for its proposed services, while leaving service area residents without adequate bed capacity in the interim period.

Not only is there a 6-year delay between the 2024 Need Determination horizon and the implementation of the UNC-RTP beds, the "change of scope" extends the duration of time before the UNC-RTP 2021 and the UNC-RTP 2022 beds will come online. UNC has not proposed any phased approach that would allow for access to any of the earlier bed-need determinations. With each subsequent change of scope, the UNC-RTP project further delays when needed bed will be brought to the Durham/Caswell/Warren service area. In the UNC-RTP 2022 project, filed just one year after the initial CON, the project was extended 3 years from the original time frame. With the UNC-RTP 2024 project, filed just two years after the UNC-RTP 2022 project, the timeline is again extended three full years. At this point, the original approval of the 2021 SMFP bed need determination will not come online for 9 years from the FY2023 need calculated the beds were needed in the 2021 SMFP as show in **Exhibit 1** below.

Exhibit 1

UNC-RTP Delay in Implementing Beds Compared to Timeframe for Calculated Need Determination

	UNC-RTP 2021	UNC-RTP-2022	UNC-RTP 2024
Relevant SMFP	2021	2022	2024
Base Year of Data in Need Determination	YE 6/30/2019	YE 6/30/2020	YE 6/30/2022
Projection Fiscal Year	FY 2023	FY 2024	FY 2026
Approval Date	9/21/2021	9/23/2022	10/1/2025
Date When UNC Beds Will be Operational	7/1/2026	7/1/2029	7/1/2032
Development Period			
Contruction Period Between Approval and Operational			
2021 Need Determination	4.78	7.78	**10.78**
2022 Need Determination		6.78	**9.78**
2024 Need Determination			**6.75**
Years of Delay Between Need and Operational Beds			
2021 Need Determination	3.01	6.01	**9.01**
2022 Need Determination		5.01	**8.01**
2024 Need Determination			**6.04**

Source: SMFPs, Section P of relevant CON applications.

As noted above, the initial UNC-RTP 2021 approval is currently at the NC Court of Appeals and could receive approval at any time. Assuming approval in 2024 and based on the original CON timeframe, the new 40-bed hospital would be online in 2029 if UNC proceeded consistent with its original timetable. However, based on the most current change of scope application, these beds will not come online until July of 2032. This is not a matter of a future relocation of existing beds that are serving patients at another location in the meantime; these previous need determinations are counted in the planning inventory but exist only on paper. This delay is not unusual for the UNC Health System; it took approximately 10 years to build the UNC Holly Springs Hospital in Wake County, long after final approval was received and much later than its original timetable contemplated. Such delays are harmful to patients who need access to care, and these delays are inconsistent with Criterion (1) with regard to enhancing access.

While not a comparative analysis under Criterion (1), it should be noted that DUH proposes to bring its 38-bed project online by January 2025 to meet the identified need for beds that has been delayed for multiple years now.

Finally, UNC-RTP failed to provide clear patient origin projections for any of the beds contemplated in its "change of scope" application. UNC-RTP only projects a specific number of patients originating from Durham County. It is unclear if UNC-RTP will serve any meaningful percentage of patients from Caswell and Warren Counties, which are both part of the service area for the acute care bed need determination. See additional discussion under Criterion (3).

UNC-RTP should be found non-conforming with Criterion (1).

Criterion (3)

Population to be Served

UNC-RTP fails to adequately describe the population to be served as it does not fully provide complete projected patient origin for the proposed 38 new beds or the total 116 beds. UNC-RTP does not provide patient origin for approximately 30% of its patients (in-migration) and does not provide patient origin for its new proposed Level II neonatal services, inpatient dialysis, or interventional radiology at all.

This is an application for a need-determined asset. The Agency cannot meaningfully review a project that purports to meet the need in the 2024 SMFP without the ability to consider the required projected patient origin for the full project and new services. UNC-RTP's choice to frame this project as a "change of scope" should not allow it to avoid providing basic information required of any applicant applying for a need determination. UNC-RTP discusses that it will serve a multi-county service area, such as on page 72, but this multi-county service area is only loosely defined in the application in Form C pages 14-16. UNC-RTP does not quantify the patients it would serve from Caswell and Warren Counties which are part of the defined service area for which the need determination was identified.

In the original UNC-RTP 2021 project, only 10% of patients were projected to come from outside of Durham County as presented in the patient origin tables on CON application page 44. The need methodology focused on Durham County residents (90% of patients) and assumed only a 10% in-migration factor.

2021 UNC-RTP Patient Origin (Section C)

Acute Care Discharges	UNC Hospitals-RTP*					
	1st Full FY		2nd Full FY		3rd Full FY	
	07/01/2026 to 06/30/2027		07/01/2027 to 06/30/2028		07/01/2028 to 06/30/2029	
Durham	943	90.0%	1,461	90.0%	2,014	90.0%
Wake	96	9.2%	149	9.2%	205	9.2%
Chatham	7	0.6%	10	0.6%	14	0.6%
Caswell	2	0.2%	3	0.2%	4	0.2%
Total	**1,048**	**100%**	**1,624**	**100%**	**2,238**	**100%**

* This should match the name provided in Section A, Question 4.
** Home health agencies should report the number of unduplicated clients.

Source : 2021 UNC-RTP CON page 44.

Now, UNC-RTP provides vague patient origin projections on page 86 of its application, radically changing its patient origin to show only 70.2% of patients from Durham County and 29.8% in-migration from unspecified "other" areas. See below. As will be discussed below, this percentage of in-migration is unsupported, and it is unreasonable to project such a high percentage of patients without any quantitative support. This is also contrary to the stated need for capacity to serve Durham County patients.

Inpatient Services	UNC Hospitals-RTP*					
	1st Full FY		2nd Full FY		3rd Full FY	
	07/01/2032 to 06/30/2033		07/01/2033 to 06/30/2034		07/01/2034 to 06/30/2035	
Durham	2,497	70.2%	2,955	70.2%	3,631	70.2%
Other^	1,060	29.8%	1,254	29.8%	1,541	29.8%
Total	**3,557**	**100.0%**	**4,209**	**100.0%**	**5,172**	**100.0%**

* This should match the name provided in Section A, Question 4.

** Home health agencies should report the number of unduplicated clients.

^ "Other" includes Caswell, Chatham, Granville, Person, Wake, and Warren counties, as well as other counties in North Carolina and other states.

Source : 2024 UNC-RTP CON page 44.

As one example, UNC-RTP does not provide reasonable support for its assumption that its patient origin for surgery services would change from 90% Durham County residents and 10% unspecified in-migration (its projections in its earlier applications) to 70% Durham County residents and 30% unspecified in-migration (its current projections) with no new ORs and no description of any new surgical service offerings it will provide. While UNC-RTP proposes a change in scope of services and volumes for various service categories from its original application, it provides limited and unrealistic assumptions related to the patient origin for all services with the residents of almost 30% of projected patients unknown.

The bottom line is that the Agency will have no way of assessing the reasonability of this assumption or the actual service area for this revised project with vague information related to the patient origination for almost 30% of its patients. UNC-RTP has not adequately identified the population to be served.

Overview - Need for the Project

UNC-RTP has filed an application to fulfill the 2024 SMFP acute care need determination as a change of scope to its 2021 and 2022 new hospital projects. Change of scope is defined by the application form as:

> ***Change of scope****: For the purpose of completing this application form, the term "change of scope" means adding a new service component or changing a service component in a way that is not materially consistent with the representations made in the previously approved application (original project) if the change is proposed during development of the original project or within 12 months after the original project was determined to be complete by the CON Section.*

At best, it is questionable that this project meets the above definition. Neither the original project nor the first "change in scope" application has been final-approved or has begun development. The first change of scope (2022) coupled with the changes and additions proposed in the current application under review change the entire nature of the need from that which was originally proposed in 2021. In 2021, UNC-RTP argued that Durham County lacked a small, community hospital alternative. If UNC-RTP's current proposal is approved, Durham County would still not have that alternative. The two proposed change in scope applications, particularly the latest, undermine the entire justification and nature of the original CON application for UNC-RTP 2021 for a small 40-bed facility serving only low acuity patients.

UNC-RTP's general arguments for need are generic and do not support more beds or services at UNC-RTP. Page 55 says the needs are based on:

- The population growth, aging, and demographic factors of the service area;
- The need for additional acute care bed capacity in Durham County; and
- The need for additional health services in Durham County, particularly the need for additional inpatient hospital-based services to support the increase in acute care bed capacity at UNC Hospitals-RTP.

The factors listed above by the Applicant are the factors that generate the general need determination in the SMFP and do not identify any population that has a need for UNC-RTP's specific proposed services or a need for UNC-RTP specifically. More importantly, these factors are directly tied to the utilization of DUH and DRH, which generated the need determination UNC-RTP now utilizes to try to expand.

UNC-RTP rests on the Agency's prior finding that its projections and patient origin are reasonable. Its latest application fails to acknowledge that it has changed its entire need justification by changing the nature of the hospital it proposes to offer and the population it will serve. See page 61.

> *Based on the analysis below, UNC Hospitals-RTP believes that the greatest need is for basic community (non-tertiary) services, which are generally lower acuity, higher frequency services needed by a significant portion of the population. As demonstrated in the table below, utilization of these "selected services" at Durham County hospitals increased 3.7 percent annually from CY 2017 to 2019, while other services increased only 1.2 percent annually from CY 2017 to 2019. (2021 Bates page 65)*
>
> *Further, UNC Hospitals-RTP believes that rather than increasing inpatient capacity at Duke Regional Hospital or Duke University Hospital, patients will be better served at a community hospital in a new location in the county, where patients will have access to a smaller, community hospital, rather than needing to navigate a large, congested hospital campus. (2021 Bates Pages 65-66)*

Through its two change of scope proposals, UNC-RTP has more than tripled the number of its licensed and non-licensed bed components and its square footage from its original application. Its total construction cost is now more than five times the 2021 proposed cost. With the newest additions proposed in this application, it will serve a significantly higher acuity level patient than initially proposed in 2021. The proposed hospital is now similar in scope of services to DRH and conflicts with UNC-RTP's original stated project justification.

These contradictory statements flow throughout the applications:

Regarding ICU (2021):

> *As noted previously, the remaining eight medical/surgical beds will function as a critical care unit (CCU) or step-down beds. These beds will be available as needed to provide care to*

patients of higher acuity but who do not necessitate admission to an intensive care unit (ICU) bed. Patients requiring specialized ICU services will be transferred to another UNC Hospitals facility that provides the required level of care. (2021 Bates page 38)

With the changes made in the 2024 change in scope application, now 18% of the Applicant's bed capacity is designated as ICU. UNC-RTP fails to calculate or show ICU patient days so there is no way to assess if these beds are truly needed or the patients that will be served. While the Applicant identifies and describes where the beds will be included on page 49 on the 2024 application, it omits any further discussion on need. On page 71, it attributes the inclusion of ICU in the current application to the increasing bed size of the hospital. Essentially, the applicant states that since it will have more beds, it now needs more services, while needing additional beds to serve a larger number of patients ostensibly eligible to be served at UNC-RTP with the broader range of services.

This higher number of {acute care} beds will enable it to meet more of the acute care needs of Durham County, which is reflected in the acute care bed methodology presented in Form C Assumptions and Methodology. As such, UNC Hospitals-RTP believes that having an ICU will enable it to meet the needs of the growing Durham County community, and also allow it to have services available to match a higher acuity for patients presenting as such.

UNC-RTP fails to recognize that a demonstration of need pursuant to Criterion 3 and the questions to be answered in Section C are based on the population to be served. Need is not based on the internal business interests of a hospital which does not yet exist or function.

Regarding OB (2021):

Specifically, a community hospital can be developed to effectively and efficiently meet the needs of a market with a sufficient population base to support the high frequency services (such as obstetrics and general surgery) provided by a community hospital. Additionally, such community hospitals need not duplicate the more specialized, high acuity services (such as neonatal intensive care or open heart surgery), which are already available at tertiary and quaternary hospitals in the area. (2021 Bates Page 34)

In its 2021 discussion of obstetrics (page 39), UNC-RTP did not even consider a higher level of newborn care. It planned for eight postpartum beds and its only consideration was two C-Section suites to support the unit. Now, the Applicant has more than doubled the size of the OB unit and increased scope to support Level II neonatal patients. Again, UNC-RTP is now focusing on higher acuity patients in direct contrast to its 2021 statements.

On page 74 of the application under review, UNC-RTP again attributes the need for additional obstetric and neonatal services to its addition of acute care beds. Bed count does not drive the need for services, particularly in facilities that are not operational. Further, the Applicant fails to consider existing available OB beds at DRH, which is now a similar provider in terms of services to those that will be offered at UNC-RTP, should the change of scope be approved.

Regarding ED Bays:

> *UNC Hospitals-RTP proposes to develop a total of 28 emergency department bays. UNC Hospitals is increasing its ED capacity consistent with the projected growth of its other services, in order to accommodate its expected increased acute care services volume and the comprehensive, convenient, and accessible care it will strive to provide to the patients of its service area. (2024 Application, Form C page 25)*

UNC-RTP initially proposed 12 ED bays in 2021, and through increases in ED bays over two changes in scope applications, now proposes 28 ED bays. The current application under review takes a reverse approach to project need for this service, using its projected inpatient volumes to back into ED visits using an IP to ED ratio. As described in detail below, inpatient projections are grossly overestimated. As a result, projected ED visits are also inflated. UNC-RTP undertakes no analysis of ED trends for Durham County to project its need for ED bays and uses theoretical ratios to justify the addition. The need for ED beds proposed by UNC-RTP is not driven by the needs of the population but is driven by the needs of the yet to be built hospital. This is inconsistent with the CON review criteria.

Bed to Population Ratio as a Measure of Geographic Need for Additional Beds

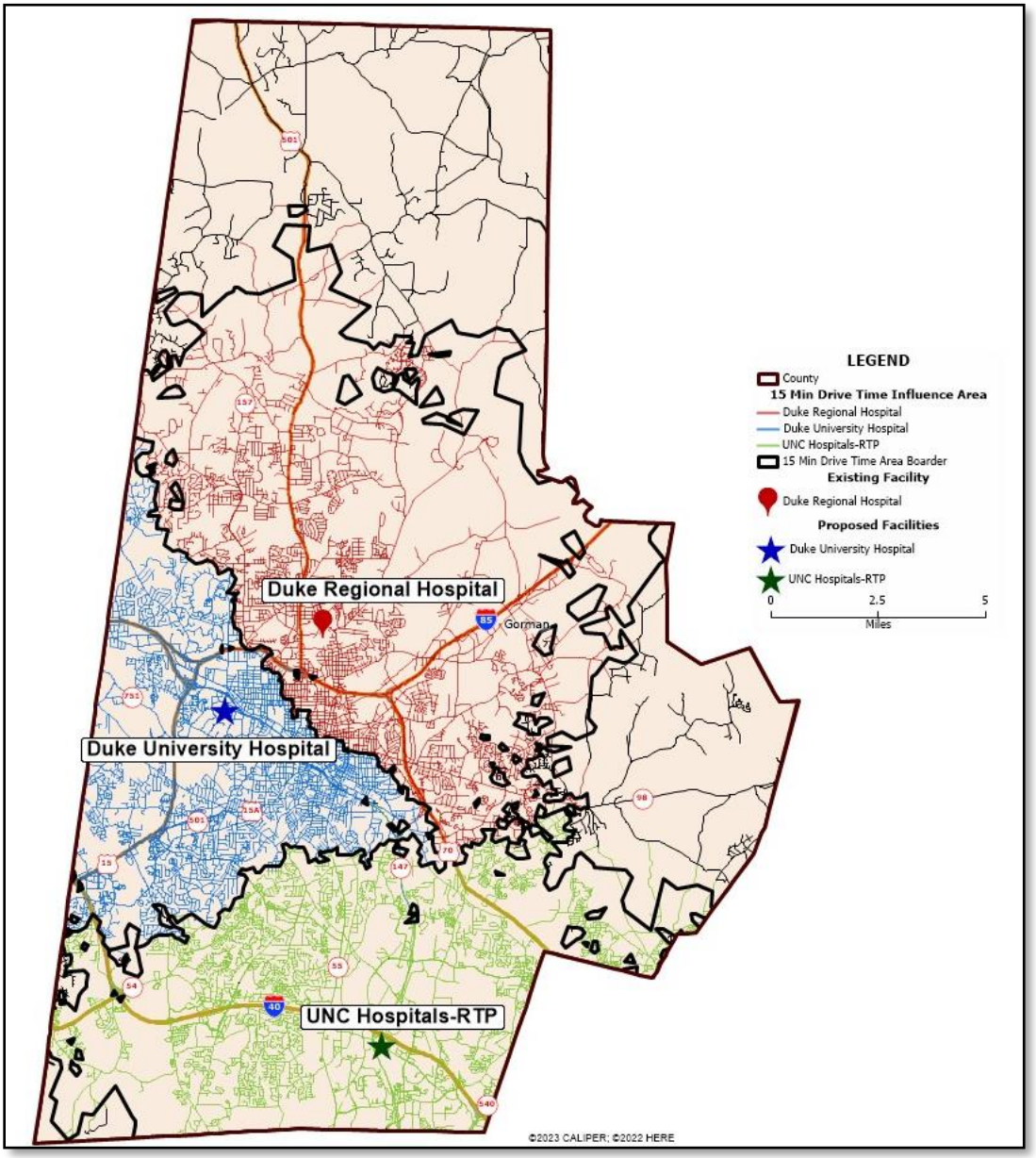
UNC-RTP premises its demonstration of need on an allocation of zip codes to various regions within Durham County. While ZIP codes are commonly used to identify service areas for specific patient utilization projections, UNC-RTP's ZIP-code based bed-to-population ratio is meaningless and arbitrary as a basis for need. Notably, the Applicant's service area is county-based and is not based on any zip code patient origin. UNC-RTP proposes to serve all of Durham County and to obtain almost 30% of its patients from outside Durham County.

As in this and previous applications, UNC-RTP arbitrarily divides the population of Durham County into three regions by ZIP code without any analysis of drive times, patient utilization patterns, city definitions or actual concentrations of the population. See application page 63-65. The regional divisions do not consider travel times and do not contemplate where patients are currently traveling for care from the delineated "regions."

Moreover, it is clear from a simple visual review that the Applicant's regional definitions are arbitrary. For example, ZIP Code 27707, located in the western part of Durham County, is closer to the central region where DUH is located than to UNC-RTP. Assigning this one ZIP code to the Central/West region instead would materially change the Applicant's entire premise regarding geographic accessibility. This one ZIP code contains over 50,000 residents, most (if not all) of whom are closer to DUH than to the future location of UNC-RTP. Most Durham County residents live in central/west Durham County. UNC-RTP's bed to population ratio is arbitrary because the ZIP code allocation method is not based on meaningful or accurate data and patient choice patterns are completely ignored. UNC-RTP's groupings have no documented bearing on where patients will seek care, especially for the expanded categories of services UNC-RTP now proposes. Notably, UNC-RTP's own projections do not break out volumes from each of these individual ZIP code regions and are instead present volume for Durham County as a whole and all other counties as a group.

Exhibit 2 shows a map of the areas of Durham County that are within 15 minutes of each hospital and also which areas are closer to each hospital. For example, the area in GREEN is within 15-minutes travel time and also closest to UNC-RTP's location. This analysis reflects that the arbitrary ZIP code analysis used by UNC-RTP on pages 63-65 of its application is unreasonable. As shown in **Exhibit 2**, the patients in the north region are closer in drive time to the existing beds at DRH. The patients in the central/west regions are closer in drive time to the existing beds in the central region at DRH and DUH. UNC-RTP's proposed regions also do not consider whether patients in various regions may also be closer to UNC facilities in Orange County than the proposed new hospital.

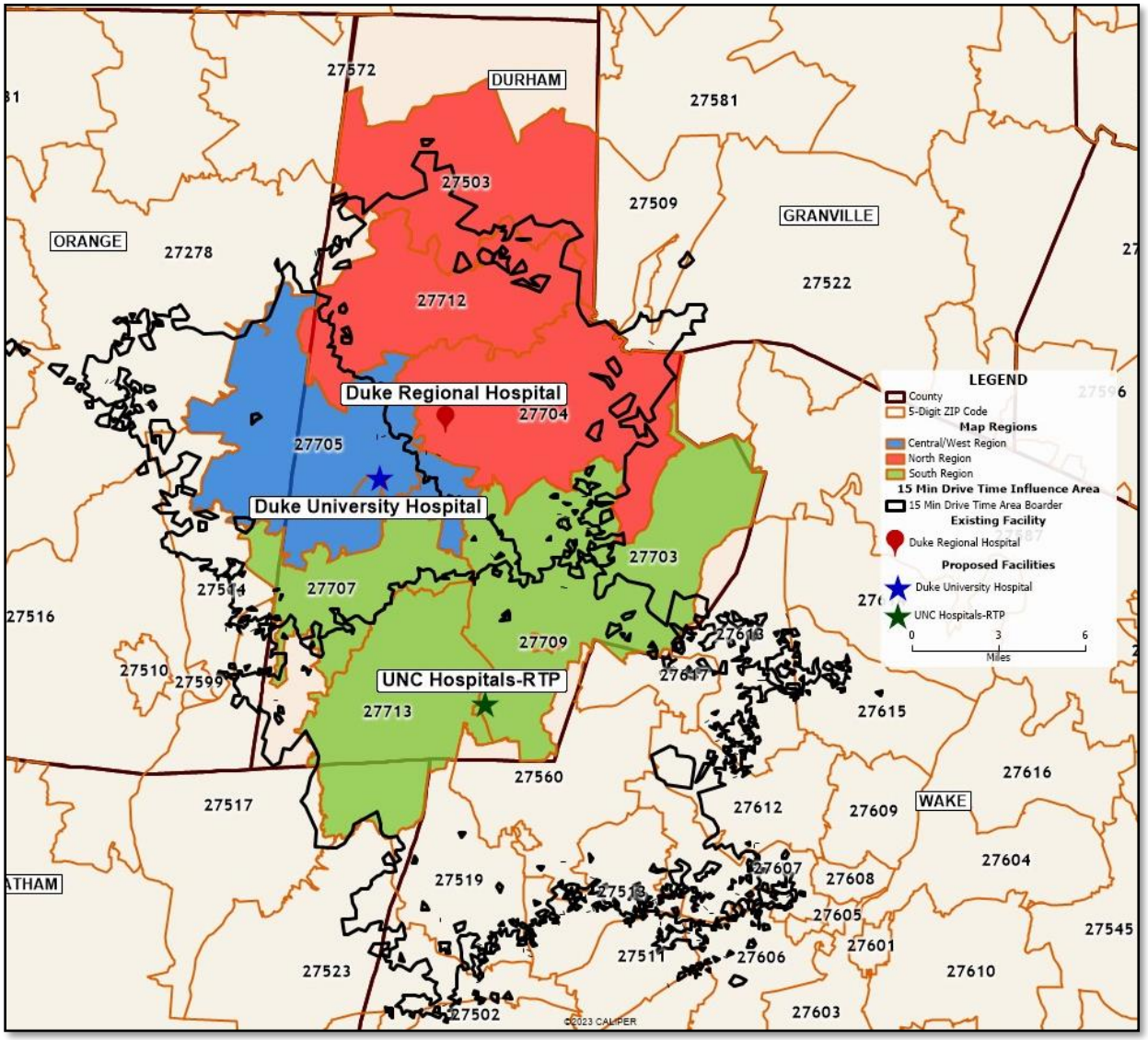
Exhibit 2
15-Minute Drive Time Areas



Source: Maptitude

Exhibit 3 overlays the drive time areas with UNC-RTP's arbitrary ZIP code groupings. When these actual drive time areas are overlaid with UNC-RTP's ZIP code regions, almost all of ZIP code 27707 is clearly closer to DUH and should be reasonably included in the central/west region. In addition, much of ZIP code 27703 is closer to DRH. This comparison demonstrates that UNC-RTP's groupings are arbitrary and inconsistent with logical access patterns for the proposed service area.

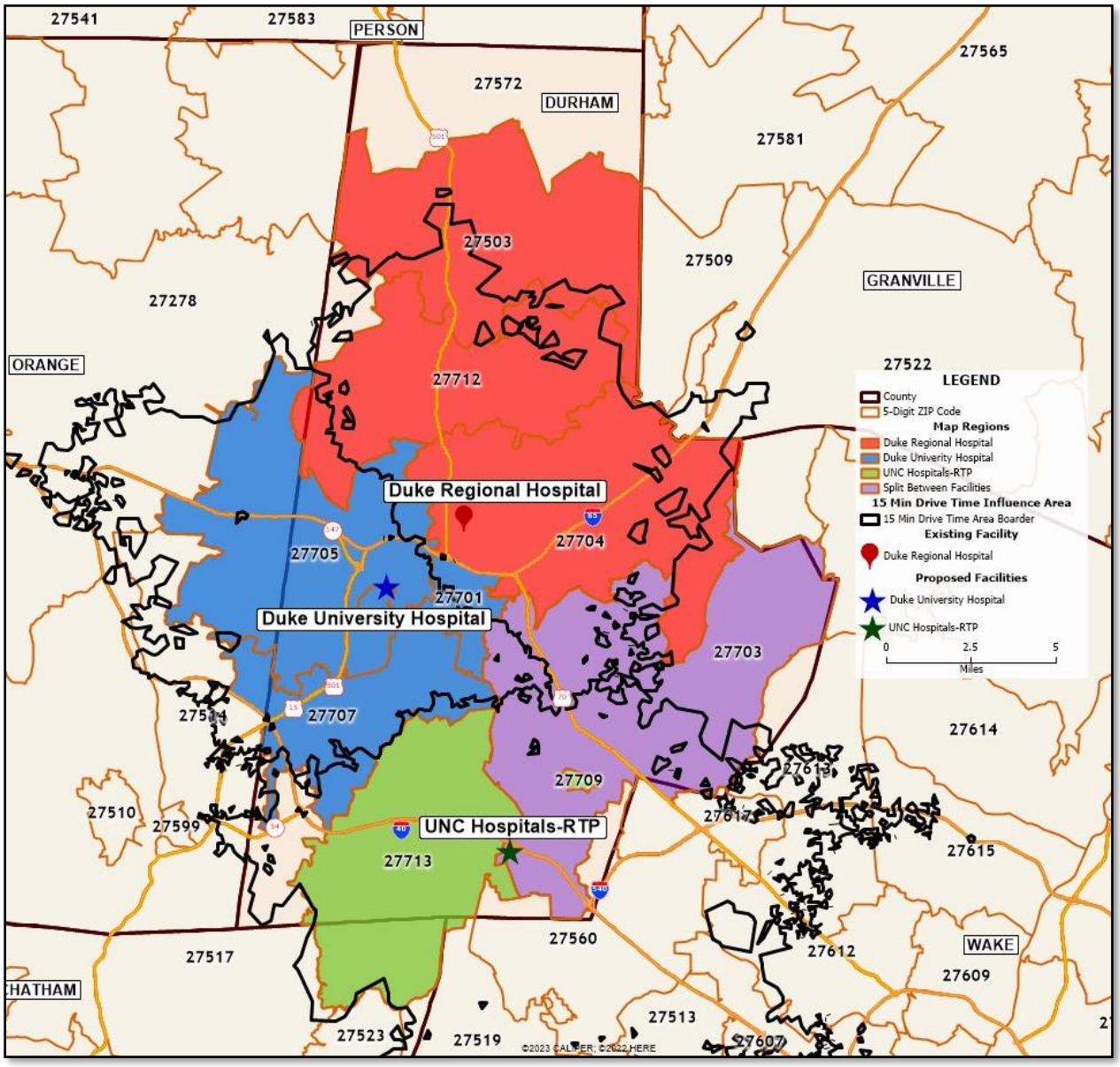
Exhibit 3
UNC-RTP Region Map – with Drive Time Areas



Source: Maptitude

If the ZIP code areas are reallocated to align with the actual travel time accessibility for Durham County residents, ZIP code 27707 should be in the Central/West region closer to DUH (now shaded blue), as shown in **Exhibit 4**. 27703, another large ZIP code, has portions located closer to each hospital – DUH, DRH, and UNC-RTP - and is now shaded purple.

Exhibit 4
ZIP Code Map Allocated by Appropriate Drive Times



Source: Maptitude

Not only is UNC-RTP's ZIP code allocation arbitrary, its allocation of beds by the resulting assigned geographic portion of the county is equally flawed. Though the Applicant quantifies the percentages of hospital patients originating outside of Durham County in Table 2-11 on Form C

Assumptions page14 of its application and utilizes this figure in its projection methodology, UNC-RTP attempts to allocate the existing beds in Durham County to various geographic portions of the county, failing to acknowledge that most beds in Durham County are used by residents of other counties.

Exhibit 5 shows the percentage of patient origin from Durham County and other counties for each existing hospital in Durham County. Almost 65% of patients served by Durham County facilities are from outside of Durham County. For DUH, which generated the acute care bed need for this project, 71.5% of patients are from outside of Durham County. This means that just based on patient origin alone, only 457 beds are being used by Durham County residents and not the 1,297 UNC-RTP factored into its bed to population ratios on pages 63-65.

Exhibit 5
Durham County Beds Allocated to Durham County Residents

	DRH	**DUH**	**NC Specialty**	**Total**
Durham County Patients	7,977	11,467	173	**19,617**
Total Patients	14,837	40,243	615	55,695
% from Durham County	53.8%	28.5%	28.1%	35.2%
% Non-Durham Residents	**46.2%**	**71.5%**	**71.9%**	**64.8%**
Licensed Beds	298	981	18	1,297
Beds Allocated to Durham Residents	160	280	5	457

Source: 2023 LRA database.

Only a total of 457 beds maximum should be allocated to any type of bed-to-population analysis for Durham County residents. It is particularly illogical to allocate all DUH's 981 beds for a specific Durham County geographic analysis when at minimum, 71.5% percent are used by patients who do not reside in Durham County. When the tertiary and specialty nature of the services offered by DUH to patients from throughout the region, the state, and even out of state are considered (as well as the longer ALOS of such tertiary services), it is highly likely that even more beds on average are filled with patients from outside of Durham County.

When bed need is considered in these terms and recognizing that DUH's high utilization is driving the bed need, only a small portion of the acute care need determination reflects a need related to Durham County residents, which is the entire focus of UNC-RTP's project and the only portion of utilization they have quantified. **Exhibit 6** shows the allocation of acute care beds from the 2024 SMFP Durham/Caswell/Warren County bed need to residents of Durham County and non-residents. This analysis shows that of the total 130 bed deficit based on the utilization of existing beds**, only 34 beds are needed for Durham County residents.** As meeting the needs of Durham County residents is the primary stated purpose and the entire focus of UNC-RTP's utilization and patient origin projections, the initial 40 beds for which they were approved in 2021 would be sufficient to meet this need.

Exhibit 6
Durham County Facility Bed Need Allocated to Durham County Residents

	DRH	DUH	NC Specialty	Total Bed Need
2024 Net Bed Need	-14	160	-16	130
% from Out of Durham	46.2%	71.5%	72%	74%
Beds Need for Non-Durham Resident	-6.5	114.4	-11.5	96
% from Durham County	53.8%	28.5%	28.1%	25.8%
Beds Need for Durham Residents	**-7.5**	**45.6**	**-4.5**	**34**

Source: 2023 LRA database.

UNC-RTP's assignment of regions and resulting bed-to-population calculation is arbitrary, does not align with actual population proximity and accessibility to existing and proposed hospitals, and fails to factor in the considerable in-migration of patients from outside of Durham County that use hundreds of beds daily at DUH and other existing facilities in Durham County. For these reasons, UNC-RTP's bed-to-population discussion does not support the need for additional beds at UNC-RTP as part of the change of scope application.

Acute Care Bed Utilization Projection Methodology

UNC-RTP uses three broad steps as a methodology for projecting acute care bed need for the project. They include:

1. Calculate Acute Care Days from Market Growth
2. Calculate Acute Care Days from In-migration
3. Use Calculations to Project Total Days, ADC, Percent Occupancy, and Discharges

The Applicant's assumptions and methodology for each of these steps are flawed, as outlined below.

Step 1: Appropriate Patient Definition is too Broad.

In the original UNC-RTP 2021 project, UNC-RTP defined its services as a subset of patients by DRG excluding the high acuity services shown below.

High Acuity Services Excluded		
Cardiac EP	Trauma: Burns	Surgery: Transplant
Cardiac Cath	Trauma: Head Injuries	Surgery: Tracheostomy
Surgery: Lung Transplant	Trauma: Orthopedics (Medical)	Tracheostomy (ENT Only)
Surgery: Thoracic	Trauma: Orthopedics (Surgical)	Neurosurgery: Brain
Amputation	Trauma (General Surgical)	Neurosurgery: Peripheral and Cranial Diseases
Hematology (Medical)	Surgery: Bariatric/Obesity	Neurosurgery: Trauma
Oncology (Medical)	Surgery: Cardiac	Neonate with Major Problems
Radiation Oncology	Surgery: Hepatobiliary/Pancreatic	Obstetrics: Antepartum Care/High Risk Pregnancies
Trauma: Body Injuries		

Source : UNC-RTP 2021 Application, Page 143

UNC-RTP 2024 application has changed that definition, not because they have demonstrated that the population needs this revised scope of services – to the contrary, the application's narrative continues to reflect a stated need for lower acuity services – but simply because they want to offer a broader scope of services. The Applicant updated the excluded DRGs in its 2024 application as follows:

Table 2-3: High Acuity Services Excluded from UNC Hospitals-RTP

Cardiac EP	Trauma (General Surgical)
Cardiac Cath	Surgery: Bariatric/Obesity
Surgery: Lung Transplant	Surgery: Cardiac
Surgery: Thoracic	Surgery: Hepatobiliary/Pancreatic
Amputation	Surgery: Transplant
Oncology (Medical)	Surgery: Tracheostomy
Radiation Oncology	Tracheostomy (ENT Only)
Trauma: Body Injuries	Neurosurgery: Brain
Trauma: Burns	Neurosurgery: Trauma
Trauma: Head Injuries	High Risk Antepartum Care
Trauma: Orthopedics (Surgical)	

Source: UNC-RTP CON application, Section Q, Assumptions to Form C, page 8

Comparing the two charts, it appears that UNC-RTP now intends to offer:

- Hematology (Medical)
- Trauma: Orthopedics (Medical)
- Neurosurgery: Peripheral and Cranial Disease
- Neonate with Major Problems[3]

[3] It should be noted that UNC-RTP admits that it included NICU days in its analysis of the potential OB days of care from Durham County in its 2021 and 2022 application and that is why the new presentation of historical days of care shows a lower number of days.

Except for neonatal care, UNC-RTP has provided no explanation for its ability to serve the additional DRGs or how existing services do not sufficiently meet any such need. However, the new DRGs appear to account for a significant volume of patients, quantified by the percentage of total discharges that UNC-RTP now claims they will be able to serve. In the 2021 CON, the identified DRG-appropriate patients comprised 75.9% of the total set of all Durham County patients. Now, in 2024, without ever offering a single service or the experience of admitting a single patient, UNC-RTP projects it can serve 82.3% of all Durham County patients with these four additional DRG categories. Included in this increase is UNC-RTP's projection that it will be able to serve 87% of medical patients when it only anticipated being able to serve 78% in 2021. At the same time, as discussed below, UNC-RTP provides no documentation of any planned recruitment or other increase in the number of physicians admitting patients and providing coverage at this location. See **Exhibit 7**.

Exhibit 7
Percentage DRG Appropriate Patients for UNC-RTP

	2021 and 2022 UNC-RTP			2024 UNC-RTP		
	Total Discharges	**Appropriate Discharges**	**% Appropriate**	**Total Discharges**	**Appropriate Discharges**	**% Appropriate**
Medical	70,245	54,817	78.0%	78,782	68,505	87.0%
Surgical	34,273	22,187	64.7%	40,485	28,068	69.3%
Obstetrics*	12,088	11,530	95.4%	11,425	11,046	96.7%
	116,606	88,534	75.9%	130,692	107,619	82.3%

UNC-RTP 2021 page 143 (2019 data)

UNC-RTP 2024, Section Q, Assumptions to Form C, pages 7-8. (2023 Annualized)

Note: UNC-RTP states that their total discharges for Obstetrics includes neonatal days in 2021. Updated data for 2019 was used based on the 2024 application. Updated data from the 2024 application was used for this analysis to provide an apples-to-apples comparison of OB services without NICU.

UNC-RTP appears to be operating under the theory, "If you build it, they will come." The Applicant fully expects its medical staff to be the same staff already serving UNC Hospitals Hillsborough Campus and UNC Medical Center (Chapel Hill). According to Form C page 36 of the application, it states:

> *"Please note that, as a new hospital developed under the provider number for UNC Hospitals, physicians who currently admit and treat patients at UNC Medical Center and UNC Hospitals Hillsborough Campus will also be members of the medical staff at UNC Hospitals-RTP. This will provide continuity of care among the UNC Hospitals campuses and strengthen the depth and breadth of services available at the new Durham County hospital. As a result, UNC Hospitals expects that UNC Hospitals-RTP medical staff will exhibit similar practice patterns as other UNC Hospitals campuses."*

The Applicant fails to document that it has adequate medical staff with the intent to take on responsibilities and travel related to admitting at a third hospital. It is unclear how UNC's existing medical staff will now cover a third hospital location in another county without significant additional recruitment. Moreover, UNC-RTP projections contemplate entirely new market share capture and not a shift of market share from UNC's Orange and Wake County hospitals, which is questionable without additional physician recruitment.

The Applicant provides 65 letters of support with its application, all from UNC affiliated physicians. All letters of support provided are form letters, many of which mention continued recruitment efforts, but none specifically describe what areas are the focus of recruitment, where those providers will be expected to provide services, and how these recruitment efforts will impact the proposed facility. For example, letters of support referencing recruitment include providers such as the Chief of the Division of Cardiothoracic Surgery, the Chair of the Department of Radiation Oncology, and several neurosurgeons, none of which will utilize this hospital as cardiothoracic surgery and radiation oncology will not be offered at UNC-RTP. It should also be noted that all letters of support for the project originated from UNC affiliated and employed physicians. There was no support from the community outside of UNC Health.

Step 1: Projected Acute Care Patient Days

Projected Growth Rates

UNC-RTP projects growth in utilization based on patient days and does not present or acknowledge discharges for the Durham County population. This analysis fails to consider that a significant part of the growth in demand is increasing average length of stay ("ALOS"), which will not necessarily continue to increase over time.

As a result, the growth rate trends used in the application far exceed the actual experience of Durham County resident discharges. As shown below, the actual number of Durham County residents admitted to any acute care hospital declined from 2017 to 2022. See **Exhibit 8**. The continued bed need in the service area is not driven by Durham County residents but is driven by the growth in DUH's utilization including high acuity patients from Durham County and the region and the increasing ALOS of these patients. DUH's admissions are growing and its length of stay for tertiary and specialized patients is increasing – although notably DUH does not project that ALOS will continue to increase in the future – but this is not a need that UNC-RTP can serve whether it is 40 beds, 74 beds, or 112 beds.

Exhibit 8
Acute Care Patients Residing in Durham County by County of Acute Care Admission

	Data Year:						**CAGR%**
County of Service	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2017-2022**
Durham	20,513	20,873	21,023	20,324	20,374	19,617	-0.9%
Orange (UNC)	2,566	2,483	2,557	2,384	2,426	2,313	-2.1%
Wake	1,048	919	1,267	1,272	1,355	1,496	7.4%
Other	290	279	356	293	350	303	0.9%
Total	24,417	24,554	25,203	24,273	24,505	23,729	-0.6%
Annual % Change	3.4%	0.6%	2.6%	-3.7%	1.0%	-3.2%	

Source: Agency patient origin reports.

Even Durham County residents served in Orange County, presumably at UNC facilities, are not increasing. This again is the "need" that UNC-RTP claims it will meet. When its current utilization of Durham County patients is declining, UNC has no basis for claiming the aggressive growth in

Durham County patients that it would need to justify its project now. Notably, UNC-RTP does not claim that any of its projected volume would reflect a shift in Durham County patients from other UNC facilities. When reviewing patient admissions and not patient days, UNC-RTP's growth projections do not hold.

UNC-RTP's projections also assume continuing increases in ALOS built into its patient day projections. The ALOS increases that are driving the patient day growth may not continue at the same rate, especially for another decade continuously and at a putative "small community hospital". Further, the ALOS includes high acuity patients that UNC-RTP will not serve. When the growth rates are applied over more than 12 years (2023 to 2035), the potential for over statement is extreme. See application Section Q, Form C assumptions, page 9. Even if recent growth rates in ALOS slow just a little, when compounded over 12 years the difference is magnified as shown in **Exhibit 9**. For example, a 0.5% error in the CAGR for medical patient days over 12 years results in a cumulative 5.4% overstatement in the projection. A 1% error in the CAGR for medical patient days over 12 years results in a 11.4% overstatement in projected patient days. A 1.5% error in the CAGR for medical patient days over 12 years results in a 17.8% cumulative overstatement in projections. The projection of growth rates used by UNC-RTP over 12 years is simply unreasonable.

Exhibit 9
Impact of Variance IN CAGR % of 12 Years on Medical Days

Variance in CAGR %	UNC CAGR +Variance	2023 Patient Days	2035 Patient Days	% Impact of Variance on Total Projection
UNC-RTP	3.1%	68,505	98,529	
-0.5%	2.6%	68,505	93,216	-5.4%
-1.0%	2.1%	68,505	87,909	-11.4%
-1.5%	1.6%	68,505	82,879	-17.8%

Source: Section Q, Form C Assumptions, Table 2-5

Another test of the growth rates is the recent Draft 2025 SMFP Acute Care Bed Need Calculation adopted preliminarily by the Acute Care Committee of the SHCC on May 7, 2024. This calculation uses a growth rate of 2.85% to project patient day growth from 2023 to 2027, a four-year period. By contrast, UNC-RTP uses a total (medical, surgical, OB) growth rate of 3.2% from 2023 through 2035, **a twelve-year period**. Using a higher growth rate for an extended period of time is very aggressive and is not supported by UNC-RTP's application. The growth rates and ALOS used are not tied to UNC's experience but are instead based on Durham County residents who primarily use DUHS related hospitals.

Market Share

UNC-RTP's projected market share in Durham County is flawed in two major ways. First, it is unreasonable to believe that UNC-RTP will capture new incremental market share of Durham County that meets or exceeds its current market share of Durham County patients who seek care in its facilities, including facilities in Chapel Hill and Hillsborough that may be more proximate to patients in much of Durham County. Adding existing and projected incremental market share together demonstrates that UNC-RTP projects to capture between 23.5% and 31.6% total market share of eligible Durham County utilization. See **Exhibit 10**. It is unrealistic to project that a smaller, new community hospital will capture more market share than its major tertiary affiliates, which are closer to some Durham patients than the proposed facility, by the third year of operation. The Applicant's assumption that no existing market share from its tertiary affiliates will shift to the new hospital is also not reasonable. UNC-RTP does not document or project any active physician recruitment that would support the incremental market share derived from its Assumptions to Form C, page 12.

Exhibit 10

UNC Health Sytem Total Projected Market Share

	UNC System CY 2022	UNC-RTP	Total UNC Market Capture
Medicine	9.9%	13.6%	23.5%
Surgery	12.6%	13.0%	25.6%
Obstetrics	15.2%	16.4%	31.6%

Sources: 2024 CON Section Q, Assumptions to Form C, page 12

Second, the significant increases in market share that UNC-RTP projects with each subsequent application are unreasonable and unsupported. Much like other aspects of the application, UNC-RTP seems to believe that "if you build it, they will come." UNC-RTP's projected year 3 market share of medical services is now 7.3.% higher than it was in its 2021 application. UNC-RTP's projected year 3 market share of OB services is now 4.7% higher than it was in 2021. Surgery services are projected to capture 3.9% higher market share than in 2021. Without ever serving a single patient and simply by stating they will offer higher acuity services, UNC-RTP projects a significantly higher market share across all service lines as shown in **Exhibit 11**. These Durham County market shares are higher than the market shares captured by UNC Medical Center and Rex Hospital, which are major tertiary medical centers currently serving Durham County.

Exhibit 11
Comparison of UNC-RTP Projected Year 3 Market Share Capture

	2021 CON	2022 CON	2024 CON	Increase from 2021 to
Medicine	6.3%	9.3%	13.6%	7.3%
Surgery	9.1%	13.3%	13.0%	3.9%
Obstetrics	11.7%	17.2%	16.4%	4.7%

Sources: 2024 CON Section Q, Assumptions to Form C, page 12
2022 CON Bates page 141
2021 CON Bates page 145

UNC-RTP's market share assumptions are not reasonable and not supported by sufficient documentation.

Step 2: UNC-RTP In-migration is Flawed.

UNC-RTP also projects that almost 30% of its patients will come from outside of Durham County. This is a large percentage of patients, particularly when the counties of origin are not specifically stated and quantified in Section (C) of the application form (p.86). These patients are not quantifiable by County, either in total or percentage, as Durham County was the only county that was individually identified and quantified by UNC-RTP. No analysis was performed to justify what patients from outside of Durham County might find the UNC-RTP location to be more convenient/accessible than other hospitals including UNC Medical Center. See application Form C Assumptions pages 13-16.

UNC-RTP instead bases its projected "in-migration" on an analysis of the three existing Durham County hospitals, which is meaningless. Even when narrowed by the consideration of just contiguous counties, this analysis is unsupported. While it tries to distinguish its scope of services in asserting a need for a "community hospital" in Durham, -RTP simultaneously fails to recognize why patients might travel to the other hospitals in Durham County and the size, breadth, depth of their service offerings. UNC-RTP factored into its analysis:

- Duke University Hospital, a Level I trauma center, academic medical center, tertiary/quaternary care provider with a regional and national reputation. DUH operates over 1,000 beds.
- Duke Regional Hospital, a 316-bed hospital with an almost 50-year-history of providing a broad range of services currently including cardiac catheterization, vascular surgery, neurosurgery, and cancer treatment. DRH also operates inpatient rehabilitation and psychiatric beds.
- North Carolina Specialty Hospital is a unique, physician-owned hospital focused on specialty surgery with a very low inpatient census.

The in-migration for these large hospitals with extensive and specialty service offerings do not provide a valid basis for projecting the in-migration percentage for a new community hospital proposed by UNC-RTP. Despite its affiliation with numerous smaller community hospitals with similar service offerings, UNC-RTP did not consider these or any other comparable hospitals to

support its projected in-migration. This is especially notable given UNC-RTP's justification for its project as a facility that is a smaller community hospital materially different in scope than the existing facilities in Durham County.

In-migration from Contiguous and Other Counties

UNC-RTP did not provide any information on how many patients might come from any other specific county other than Durham. The Applicant does not provide any projected utilization from Caswell and Warren Counties, which are part of the acute care bed need determination for which they are applying. In addition, its definition of its projected in-migration is conflicting throughout the application. The 2024 Application page 86 states, "'Other' includes Caswell, Chatham, Granville, Person, Wake, and Warren Counties, as well as other counties in North Carolina and other states." However, its analysis on Form C Assumptions page 14 states that its in-migration is calculated based on a percentage of 2022 patients treated in Durham County hospitals originating from:

- Only those counties contiguous to Durham, not including Orange;
- Caswell and Warren Counties; and
- One-half of the in-migrating acute care days from Wake County.

Granville, Person, and Chatham Counties are the contiguous counties included in whole for UNC-RTP's definition of in-migration. The idea that these three counties will contribute a significant percentage of patients to UNC-RTP is not realistic. UNC-RTP is proposed to be located very close to the Durham-Wake County line at the southern end of Durham County. Patients from Granville, Person, and Chatham, along with Caswell and Warren (also included in the Applicant's definition of in-migration) would have to drive through other counties with existing closer facilities to access services in RTP. Moreover, these counties only comprise 11.9% of patients served in Durham County and include patients traveling to DUH for tertiary, trauma, and highly specialized services. See **Exhibit 12**. These patients will not realistically comprise the almost 30% in-migration projected by UNC-RTP.

Exhibit 12

Patients Served in Durham County - 2022

County of Residence	Patients	% of Total
Granville	3,114	5.6%
Person	2,470	4.4%
Chatham	391	0.7%
Caswell	261	0.5%
Warren	415	0.7%
All Other	49,295	88.1%
Total	55,946	100.0%

Total from Contiguous Counties Where UNC Does not Already Operate a Major Tertiary Medical Center	**11.9%**

Source: Agency 2023 Patient Origin files.

It should be noted that Caswell and Warren are included in "Other" in-migration without any quantification. Given that they are part of the SMFP identified service area for this project, they must be included and quantified.

Once these counties are quantified, the only remaining county included in the Applicant's in-migration is Wake. It is completely unclear and unquantified what patient population from Wake County UNC-RTP chose to subdivide in half. See CON application, Section Q, Assumption to Form C page 15. If these are patients who reside in Wake County choosing to travel to Durham County historically, these are patients choosing DUHS and are unlikely to choose UNC-RTP. If they seek care from a UNC provider, UNC is a major provider of acute care services in Wake County operating 468 beds at UNC Rex Hospital and UNC Holly Springs. **The patients UNC-RTP projects to serve from Wake County are completely unknown and unquantified. It is not realistic that Wake County patients can make up the quantity between the 11.9% shown above for all other counties and the 29.8% of patients projected by UNC-RTP.**

Not only did UNC-RTP use an in-migration rate unsupported by appropriate analysis, but UNC-RTP also does not provide sufficient information to know where these patients will come from. Almost 30% of total patients are unidentified in terms of county of residence. This leaves the Agency guessing where these 30% patients will come from, which is inconsistent with the original UNC-RTP 2021 project and with numerous other new hospital projects reviewed by the Agency.

Exhibit 13 below compares in-migration for new hospitals and other projects and identifies their respective proposed service areas. UNC-RTP continues to try to characterize its project as a small community hospital to differentiate itself from DRH. Most other hospitals, such as Greensboro Medical Center, Atrium Health Steele Creek, and Atrium Health Union West, typically use an in-migration of 10% or less. It is simply unreasonable for UNC-RTP to leave 30% of its patient origin as unidentified in-migration.

Exhibit 13
Comparison of Inmigration for Recent New Hospital Applicants

Service Area Definition for New Hospitals and Other Projects

Project ID	Name	Beds	Home County	Service Area	% In-migration (Other)
J-12509-24	**UNC Hospitals-RTP**	**112**	**Durham**	**Durham**	**30.0%**
G-12330-23	Greensboro Medical Center	36	Guilford	Guilford, Forsyth, Rockingham, and Stokes	5.0%
F-12084-21	Atrium Health Steele Creek	26	Mecklenburg	York (SC), Mecklenburg, and Gaston	2.9%
F-11618-18	Atrium Health Union West	40	Union	Union, Anson, Mecklenburg, Chesterfield SC, Lancaster, SC, and York, SC	4.0%
F-12255-22	Atrium Health Harrisburg	24	Cabarrus	Cabarrus, Mecklenburg, Rowan, Stanly, and Iredell	7.4%

Simply changing this one assumption alone would cause UNC-RTP to fail to meet the Acute Care Performance Standards as discussed below.

Step 3: UNC-RTP Projected ALOS and Discharges are Unreasonable

Instead of starting with admissions or discharges and applying an ALOS, UNC-RTP projects patient days and then backs into admissions. To back into admissions, UNC-RTP uses an ALOS it claims is appropriate to the expanded acuity base of patients that it will now serve because they have "changed the scope" of the project. This new ALOS is 5.78 days, 18% longer than its prior projects in 2021 and 2022 as shown in **Exhibit 14**. This increase is not a function of the Level II neonatal beds, which are not included in the acute care ALOS.

Exhibit 14
Changes ALOS Between UNC-RTP Applications

	UNC-RTP 2021	UNC-RTP 2022	UNC-RTP 2024
Projected Admissions	2,238	3,858	5,172
Projected Days	10,749	18,869	29,903
ALOS	4.80	4.89	5.78

Sources: CON application, Section Q, form C.1b.
2022 UNC-RTP CON page 136
2021 UNC-RTP CON page 129

The claim of the longer ALOS is due to the new definition of appropriate DRGs, which now includes 83% of total Durham County discharges even though there are numerous services that the hospital will not offer. As discussed above, this again represents a much different "need" than that for which UNC-RTP was originally approved in its 2021 project. Even though UNC-RTP will only serve a small market share or subset of these patients, it still projects that its ALOS will match the average for the entire base of patients without further acuity adjustment. The only two new services proposed in the 2024 application are interventional radiology and inpatient dialysis. UNC-

RTP does not quantify how many interventional radiology procedures would be done on inpatients, so there is no way to validate if this service would have any impact on ALOS. Likewise, the 647 inpatient dialysis patients UNC-RTP projects to serve does not provide any discussion of inpatient dialysis increasing days or ALOS.

UNC-RTP did no reality testing to see if a hospital with 112 beds would have an ALOS that would match the average of its expanded scope of services including high acuity patients. UNC operates numerous small to mid-size community hospitals throughout North Carolina. UNC could have looked at any of these examples for a reasonable ALOS but instead it took an average of all (83% of Durham County) patients that it "could" serve, not those that it would routinely serve.

Exhibit 15 presents the ALOS for the similarly sized UNC affiliates hospitals that UNC-RTP could have looked to for a reasonable ALOS. All but one hospital, UNC Caldwell Memorial, have much lower ALOS. UNC Caldwell Memorial has a very small OB program that may be closing. It reported just 11 OB days in FY2023. Similarly, UNC Lenior only had an OB census of 2 for FY2023. Typically, OB patients have a lower ALOS that would bring down the average. The average across these hospitals without UNC Caldwell and UNC Lenior is just 4.35 days, approximately 25% lower.

Exhibit 15
ALOS for all UNC Affiliated Acute Care Hospitals

Hospitals	Discharges	Total Acute Care Days	ALOS
UNC-RTP	**5,172**	**29,903**	**5.78**
UNC Pardee Hospital	6,083	24,618	**4.05**
UNC Lenior Memorial Hospital	5,311	25,949	4.89
UNC Caldwell Memorial Hospital	3,546	22,752	6.42
UNC Health Johnston - Smithfield	Same License Wide	31,719	
UNC Health Johnston - Clayton	Same License Wide	11,400	
UNC Health Johnston (Cumulative)	**9,489**	**43,119**	**4.54**
UNC Rockingham Hospital	2,112	9,266	4.39
Average w/o Caldwell and Lenior			**4.35**

Source: 2023 LRAs, UNC tertiary medical center, and critical access hospital affiliates are not included.

UNC-RTP uses UNC Health Johnston utilization as the basis for other utilization projections such as GI Endoscopy Procedures. See CON application, Section, Assumptions to Form C page 34. If UNC-RTP used the lower ALOS of UNC Health Johnston of 4.54. It would not meet its utilization projection.

Reality Test of UNC-RTP Inpatient Acute Care Projections

As a final reality test to UNC-RTP's inpatient acute care patient day projections, it is important to consider that UNC-RTP offers two community hospitals in markets much like Durham County. In Orange County, UNC operates UNC Medical Center as a major tertiary medical center and UNC-Hillsborough as a long-established community hospital campus with 80 beds. In Wake County,

UNC operates Rex Hospital as a major tertiary medical Center and UNC Holly Springs as a small community hospital with 50 beds. These two counties along with Durham make up the Triangle market - again demonstrating the relevance of UNC Hillsborough and UNC Holly Springs operations as a comparison to UNC-RTP as shown in **Exhibit 16**.

UNC Holly Spring has been open for approximately two and a half years. In its first 11 months of operation reported on the 2023 LRA, UNC operated with an annualized ADC of 13.42. By comparison, UNC-RTP projects a first year ADC of 74.43, over 5 times greater than the experience of Holly Spring. According to its 2024 LRA, its first full year of operation (months 11 – 23) resulted in an ADC of 20. By comparison, UNC-RTP projects a second year ADC of 78, almost 4 times greater than the experience of Holly Spring. UNC Hillsborough is a long-established community hospital with ICU beds, 6 operating rooms, and 2 procedure rooms. In FY 2023, UNC Hillsborough reported an average daily census of 54.8. By comparison, UNC-RTP projects a third year ADC of 81.93. These comparisons of UNC-affiliated community hospitals to the proposed project further demonstrate the unrealistic projections presented by UNC-RTP in this second change of scope application.

Exhibit 16
Comparison of UNC-RTP to UNC Hillsborough and UNC Holly Springs

	Beds	Days	ADC	Occupancy
Year 1 Comparison				
UNC-RTP (Year 1)	114	27,166	74.43	65.3%
UNC Rex Holly Springs*	50	4,898	13.42	26.8%
Year 2 Comparison				
UNC-RTP (Year 2)	114	28,499	78.08	68.5%
UNC Rex Holly Springs	50	7,333	20.09	40.2%
Year 3 Comparison				
UNC-RTP (Year 3)	114	29,903	81.93	71.9%
UNC Hillsborough**	85	20,014	54.83	64.5%

Sources: 2024 CON Section Q, Assumptions to Form C, page 15

2023 - 2024 LRAs, beds and days by campus

**Rex Hospital's 2022 LRA noted that Rex Holly Spring opened on 11/1/2021*

First year of operation 11/1/2021 to 9/30/2022 annualized.

***UNC does not break out any separate campus utilization data for UNC Hillborough on its 2024 LRA.*

ICU Projected Utilization

UNC-RTP's initial project (2021) and first change of scope in 2022 did not include ICU beds. Its current change of scope application now includes a full 20-bed ICU but fails to provide any narrative justification for this substantial change. In addition, UNC-RTP does not project utilization for the ICU beds anywhere in the application. It is impossible to determine or justify the need for these beds without any projected utilization.

The Applicant proposes far more ICU beds than any other similarly sized hospital. Of the 18 similarly sized hospitals reviewed, only Watauga Medical Center, the largest existing, long-established hospital had a similarly sized unit at 16 beds. See **Exhibit 17**. At similarly sized hospitals, ICU beds represented approximately ten percent of the total bed count. The 20 proposed ICU beds will compose approximately 18% of UNC-RTP's total beds.

Exhibit 17
ICU Beds as a Percentage of Total for Comparison Hospitals

Hospital	ICU Beds	Med/Surg Beds	OB Beds	Total Beds (No NICU)	ICU % of Beds
UNC-RTP	**20**	**72**	**20**	**112**	**17.9%**
Watauga Medical Center	16	64	11	113	**14.2%**
Novant Health Thomasville	13	68	20	101	**12.9%**
FirstHealth Moore Regional-Richmond	12	55	20	99	**12.1%**
Vidant Roanoke-Chowan Hospital	10	56	16	86	**11.6%**
Cape Fear Valley Betsy Johnson	14	112	0	126	**11.1%**
Annie Penn Hospital	12	98	0	110	**10.9%**
Caldwell UNC Health Care	12	88	10	110	**10.9%**
Lake Norman Regional	12	75	9	115	**10.4%**
Atrium Health Lincoln	10	77	10	97	**10.3%**
Atrium Health Stanley	10	72	15	97	**10.3%**
Northern Regional Hospital	10	65	13	100	**10.0%**
Haywood Regional Medical Center	12	95	6	120	**10.0%**
Vidant Edgecombe Hospital	8	45	32	94	**8.5%**
UNC Rockingham Hospital	9	87	12	108	**8.3%**
Davis Regional Medical Center	8	86	8	102	**7.8%**
Sampson Regional	8	87	12	116	**6.9%**
Wilkes Medical Center	8	95	17	120	**6.7%**
Central Carolina Hospital	8	101	17	126	**6.3%**
Total/Average Communty Hospitals	**11**	**79**	**13**	**108**	**9.9%**

Source: 2023 LRAs

On page 49 of its application UNC-RTP states, "Of note, UNC Hospitals-RTP's ICU will be co-located on the same floor as its surgical services, ensuring appropriate access for the most acute patients requiring both surgery ad intensive care." It is logical to associate surgery with intensive care and to co-locate the two services. However, the number of ICU beds compared to the number of operating rooms proposed in this project lacks logic. UNC has increased from "0" ICU beds in 2021 and 2022 to 20 ICU beds in 2024 but still has only 2 ORs. Given that surgical patients typically generate a significant number of ICU days, UNC-RTP's sizeable number of ICU beds is unsupported.

Moreover, there is a disconnect between ICU beds and surgical services. UNC-RTP proposes to add 20 ICU beds as part of this application but reduces its 2022 inpatient surgical utilization from 1,459 cases to 1,105 inpatient surgical cases in the 2024 application as shown in **Exhibit 18**. In 2022, UNC-RTP projected 1,459 inpatient surgical cases and no ICU days. Now in 2024, UNC-RTP projects only 1,105 inpatient surgical cases and an unidentified number of ICU days to support 20 ICU beds.

Exhibit 18
UNC-RTP Comparison of Surgical Cases Between Applications and ICU Beds

	2021	2022	2024
Year 3 Inpatient Surgical Cases	764	1,459	1,105
Year 3 Outpatient Surgical Cases	1,161	689	1,376
Total Surgeries	1,925	2,148	2,481
Percentage of Inpatient Cases to Total Cases	39.7%	67.9%	44.5%
ICU Beds	-	-	20
ICU Patient Days	NA	NA	?

Sources: 2024 Application Form C.3b page 3, 2022 Application Bates Page 133, 2021 Application Bates Page 139

UNC-RTP's Form C (pages 5-20), which presents a utilization methodology for acute care beds, does not break out ICU beds as a separate bed category as it does with Medicine, Surgery, and OB. As a result, it is impossible to assess the projected utilization for the proposed ICU beds. UNC-RTP's only claim to support the need for ICU beds is that ICU services will be needed as the hospital adds beds. See Application page 71.

While it may be reasonable for a new hospital to add higher acuity patients and ICU beds "as it grows," UNC-RTP is not projecting such organic growth. It is modifying its original application to serve a higher acuity level from the time of implementation. It is proposing to start with this higher acuity level with no meaningful justification. The Applicant uses UNC-Hillsborough as an example of a community provider growing into a higher acuity provider over time (Application page 72). However, this is not what UNC-RTP is proposing to do. Through the proposed application, UNC-RTP projects to serve a higher acuity level upon implementation on day one of operation. Moreover, UNC-RTP omits any data about UNC-Hillsborough's ALOS, ICU census, or other comparable information that it has available to provide any support for its assumptions.[4]

As it does in multiple places throughout its application, the Applicant tries to characterize itself alternately as a small, growing community provider and as a moderately sized hospital with higher acuity services whenever one or the other is most beneficial. In this case, it does both of these at the same time.

OB Projected Utilization

UNC-RTP proposed just 8 OB beds in 2021, increased this unit to 12 OB beds in its 2022 application, and now proposes 20 total OB beds in its application under review. The Applicant has provided no data to justify this increase. UNC-RTP's data shows that OB patient days for Durham County residents have been declining 1.7% annually. Even when narrowed to "appropriate" patients, the OB patient days have been declining by 1% annually. See application page 69 and Section Q, Form C assumptions pages 7-8.

Despite the declining trend in OB patient days, UNC-RTP did not utilize the trend in its projection. Instead, it held OB days constant from CY2025 to CY2035. Further, UNC-RTP did not undertake

[4] Please note that UNC has not broken out the Hillsborough campus on the 2023 or 2024 LRAs and therefore, there is no recent public data to even evaluate the statements made about UNC Hillsborough.

any analysis of Durham County birth trends, nor did they project how many mothers or deliveries they would serve. As shown below, Durham County births are declining. From 2016-2021, total live births declined 2.3%, or a negative CAGR of 0.5 for this time. See **Exhibit 19**. The calculation of OB days alone does not provide enough information to assess its feasibility or reasonableness. The projected number of deliveries is also a vital piece of data in this assessment.

Exhibit 19
Durham County Live Births Trend - 2016-2021

	2016	2017	2018	2019	2020	2021	2016-2021 % Change	2016-2021 CAGR
Total Live Births	4,346	4,182	4,151	4,158	4,012	4,245	-2.3%	-0.5%

Source: North Carolina Vital Statistics, Volume 1

In addition, the Applicant did not consider other providers of OB services in Durham County. Based on 2024 LRAs, obstetric beds at DUH and DRH at operating at 65.7% and 47.9% occupancy of licensed beds, respectively. As a result, existing hospitals are now operating with ample capacity to meet future growth. DRH has did not even operate all of its licensed OB beds in FY 2023. There are more than sufficient OB beds in Durham County and UNC-RTP's additional 20 beds are not needed.

Though the number of projected deliveries is unclear, it is obvious that UNC-RTP's OB unit will be highly underutilized at 20 beds. The Applicant projects just 2,549 OB patient days in PY3, resulting in an ADC of 6.98. At this level of utilization, UNC-RTP's proposed 20 OB beds would operate at just 34.9% occupancy. See application, Section Q, Form C assumptions page 17. Using its 2022 proposed size of 12 beds still results in only a 58% occupancy level at PY3. Clearly, there is no justification for 20 obstetric beds.

Surgical Services

While UNC-RTP does not change its number of ORs and procedure rooms, it significantly changes its utilization projections from its previous applications for this project. UNC-RTP starts by using total Durham County surgery cases as a basis for projecting the ratio of inpatient to outpatient surgical cases. This starting point is flawed by the high acuity of DUH's surgical cases, which account for 50.4 percent of total Durham resident surgical cases in FY 2022. DUH has 59 ORs and inpatient case times 2.58 times higher than the Group 4 case times projected for UNC-RTP. Outpatient case times are 2 times higher, more than double the Group 4 case times projected for UNC-RTP.

UNC-RTP's varying assumptions from application to application again raises questions of the reasonability and validity of its surgical case volume as shown in **Exhibit 20**. Inpatient and outpatient surgical cases vary wildly between the applications filed for UNC-RTP, as do procedure room utilization. Most unusually, UNC-RTP's 2024 projected utilization is lower than projected in 2022 even as every other service is projected to grow. It is hard to find any of the projections reasonable with such dramatic variations in utilization for the "same" project.

Exhibit 20
Comparison of Surgical Projections By Application

	2021 CON	2022 CON	2024 CON	% Change 2021-2024	% Change 2022-2024
Surgical Cases in ORs					
Inpatient Surgery Cases	764	1,459	1,105	44.6%	-24.3%
Outpatient Surgery Cases	1,161	689	1,376	18.5%	99.7%
Total w/o C Section	1,925	2,148	2,481	28.9%	15.5%
Procedure Room Cases					
Outpatient (See notes)		1,528	468		-69.4%
Procedure Room Cases	549	2,576	1,723	213.8%	-33.1%
Total Cases with Proc Rooms	2,474	4,724	4,204	69.9%	-11.0%

2021 Application Form C.b2 and C.b4, Form C Assumptions Bates pages 155-158

Note: 2021 assumes procedure room cases are inpatient and outpatient

2022 Application, Forms C.b3 and C.b4, Form C Assumption Bates pages 155-161

Note: 2022 application assumes 1,528 outpatient cases will shift to address OR capacity constraints.

2024 Application Forms C.b3 and C.b4, Form C Assumption pages 27-32.

Note: 2024 application assumes 428 outpatient cases will shift to address OR capacity constraints.

Level II Neonatal Beds

UNC-RTP does not justify a need for Level II neonatal beds and fails to provide reasonable utilization projections for these beds. While there is no need determination or methodology in the SMFP for Level II neonatal beds, an applicant is still required to document the need and reasonably project utilization for such beds as they are licensed as acute care beds, a regulated new institutional health service requiring a certificate of need, and part of the increased project scope and presumably part of the increased project cost. UNC-RTP fails to do either one.

Except for a brief description of Level II neonatal services on pages 50 and 51 of the application, the Applicant provides no additional information regarding the need for the four Level II neonatal beds included in this project. There is no description of why the service area needs another Level II provider, specifically UNC-RTP.

UNC-RTP's projection methodology (Form C pages 22-25) is not based upon reasonable data or assumptions as outlined below.

- First, the Applicant identifies four DRGs to be treated at UNC-RTP Level II neonatal care beds (791-794). The HIDI data used does not break the DRGs down by level of care and the applicant falsely assumes that 100 percent of infants with DRGs 791, 792, and 793 can be served by Level II care. Many babies with these DRGs require higher levels of care. Because UNC-RTP assumes that all infants with these DRGs are appropriate for level II care, its applicable acute care days in Table 3-4 (Form C page 23) is overstated.

- The Applicant then uses these applicable acute care days to determine a ratio of Potential Neonatal Care days to Total Obstetric Acute Care Days. This resulting ratio is overstated for two reasons:

- The applicable acute care days are overstated as described above.
- Neonates requiring higher levels of care often stay in the hospital longer than obstetric patients (mothers) and the neonatal ALOS can vary widely. Even if this ratio was a reliable mechanism for projecting neonatal days, it relies on a reasonable projection of OB days, which UNC-RTP does not provide. See previous analysis related to OB services which explains why the OB days utilized are not reasonable.

- In addition, HIDI data does not allow for consideration of patients who step down from a higher level (III or IV) to level II. As a Level II (only) provider, UNC-RTP will not have patients who step down. These patients will be transferred to another provider before or after delivery.

As will be shown, separating DRGs and estimating the percentage served for each DRG is not reasonable or accurate using the Applicant's methodology. In addition, comparing the Applicant's 51% ratio to other similar Level II providers highlights UNC-RTPs over-projection of potential neonatal care days that can be treated in a Level II care unit. See **Exhibit 21**.

Exhibit 21
Analysis of Level II Neonatal ONLY Providers - Ratio of Level II Days to OB Days

Hospital ID	Hospital Name	**Level II Neonatal Beds**	**Level II Neonatal Days**	**OB Beds**	**OB Days**	**Ratio of Level II to OB Days**
H0052	High Point Regional Health	6	449	27	5,233	8.6%
H0222	Carteret General Hospital	3	241	5	2,165	11.1%
H0225	Atrium Health Lincoln	4	20	**10**	**1,040**	1.9%
H0243	Central Carolina Hospital	1	12	**17**	**914**	1.3%
H0151	UNC Health Johnston	3	160	21	3,589	4.5%
H0282	Novant Health Huntersville Medical Center	4	1,717	24	4,410	38.9%
H0270	Novant Health Matthews Medical Center	8	2,006	34	6,487	30.9%
H0040	Novant Health Rowan Medical Center	5	114	19	2,315	4.9%
H0273	The Outer Banks Hospital	1	3	2	606	0.5%
H0077	Watauga Medical Center	4	68	**11**	**1,243**	5.5%
H0210	Wilson Medical Center	3	170	11	1,638	10.4%
H0267-A	Maria Parham Health	3	16	16	815	2.0%
Total All Level II ONLY Providers			**4,976**		**30,455**	**16.3%**

Source: 2023 LRA database
Providers with incomplete reporting of OB or Level II days excluded.

Exhibit 22 calculates the ratio of Level neonatal II bed days to OB bed days for all North Carolina community hospital providers that offer only Level II neonatal care (nothing higher). The average for these providers is 16.3%. The highest ratio of these providers is 38.9%. All are far lower than the 51% projected by UNC-RTP.

In 2021, UNC-RTP characterized its proposed project as a small, community hospital – something different than was currently offered in Durham County. Specifically, it stated that *"Duke Regional Hospital is a full-service, tertiary-level care hospital and DUH is an academic medical center that provides quaternary-level care to patients from a broad service area. As such, Durham County*

lacks a hospital that is designed and operated to serve the local community and that also has the ability to expand and add services as patient needs grow and evolve (Bates page 104)." With the addition of Level II neonatal care and a projection that it can serve 97% of births implying high-risk deliveries but without reasonably supported assumptions, UNC-RTP now unnecessarily duplicates existing DRH capacity for such services.

Emergency Department Need

As noted above, UNC-RTP does not identify a population in need of ED services. Instead, the Applicant works backward to derive the need for more ED bays based on the inflated projected acute care admissions. UNC-RTP fails to consider any trend in actual ED visit volume or the utilization of the existing EDs in Durham County. As shown in **Exhibit 22**, 2023 ED visit volume for Durham County providers is lower than some previous years. Notably, volume at DRH has remained lower than pre-COVID years, while DUH is increasing slightly. DUH is a major regional Level I trauma center. Any growth in demand at DUH for trauma and high-acuity ED services will not be met by UNC-RTP. UNC-RTP has not demonstrated the need for increased ED treatment bays in this change of scope application.

Exhibit 22

DUHS Emergency Department Visits

	SFY2016	**SFY2017**	**SFY2018**	**SFY2019**	**SFY2020**	**SFY2021**	**SFY2022**	**SFY2023**	CAGR %
DUH	74,914	76,763	75,735	77,551	71,650	66,681	72,620	76,293	0.3%
DRH	63,222	61,852	62,214	62,738	54,197	51,102	46,321	47,737	-3.9%
Total	138,136	138,615	137,949	140,289	125,847	117,783	118,941	124,030	-1.5%
Source: LRAs									

Comparisons to Similar Providers Demonstrate that UNC-RTP's Projection Methodologies Are Not Realistic

Despite UNC Health System operating numerous small community hospitals, UNC-RTP did not compare its utilization assumptions or service complement to its community hospital affiliates or other community hospitals across the state. These comparisons demonstrate the proposed project lacks reason regarding project plans and utilization assumptions.

DUHS undertook an analysis of other community hospitals in North Carolina ranging from 86 - 126 beds. This comparison of 18 hospitals shows that the scope of UNC-RTP is out of alignment and its projected utilization is unreasonable. The comparisons include ALOS, overall utilization, OB days, Neonatal Care Service and Days, and number of ORs.

Average Length of Stay

UNC-RTP's ALOS is not reasonable compared to other similar providers. UNC-RTP's projected ALOS exceeds 17 of 18 existing providers. On average, the ALOS for similarly sized hospitals was just 4.54 compared to UNC-RTP's ALOS of 5.78 for total acute care services, not including Level II neonatal beds. Only UNC Caldwell has a higher average length of stay at 6.42, which as noted above likely reflects that UNC Caldwell does not have a fully functioning OB program, reporting just 13 days in FY 2023. See **Exhibit 23**.

Exhibit 23
ALOS Comparison Among Similar Providers

Hospital	County	Total Beds (No NICU)	Admissions	Discharges	Total Acute Care Days	ALOS
UNC-RTP	**Durham**	**112**	**5,172**	**5,172**	**29,903**	**5.78**
UNC-RTP with Level II Neonatal Beds	**Durham**	**112**			**31,206**	
Davis Regional Medical Center	Iredell	102	638	644	3,707	5.76
Lake Norman Regional	Iredell	115	3,917	3,933	13,672	3.48
Novant Health Thomasville	Davidson	101	3,202	3,214	13,302	4.14
Annie Penn Hospital	Rockingham	110	3,281	3,270	13,727	4.20
UNC Rockingham Hospital	Rockingham	108	2,109	2,112	9,266	4.39
Northern Regional Hospital	Surry	100	3,873	3,858	17,878	4.63
Cape Fear Valley Betsy Johnson	Harnett	126	5,135	5,200	23,739	4.57
FirstHealth Moore Regional-Richmond	Richmond	99	2,313	2,499	7,181	2.87
Atrium Health Lincoln	Lincoln	97	4,906	4,940	22,236	4.50
Caldwell UNC Health Care	Caldwell	110	3,512	3,546	22,752	6.42
Central Carolina Hospital	Lee	126	3,143	3,146	14,006	4.45
Wilkes Medical Center	Wilkes	120	3,072	3,069	14,537	4.74
Atrium Health Stanley	Stanely	97	3,679	3,686	16,767	4.55
Haywood Regional Medical Center	Haywood	120	4,001	4,001	18,920	4.73
Sampson Regional	Sampson	116	2,474	2,476	9,360	3.78
Watauga Medical Center	Wautauga	113	3,765	3,784	19,397	5.13
Vidant Edgecombe Hospital	Edgecombe	94	2,601	2,611	12,170	4.66
Vidant Roanoke-Chowan Hospital	Hertford	86	2,754	2,765	14,214	5.14
Total/Average Community Hospitals		**108**	**58,375**	**58,754**	**266,831**	**4.54**

Source: 2023 LRAs

**UNC Hillsboro is approved for 123 beds.*

***Lake Norman Regional did not provide admissions for patient origin; they used patients or visits. Admission from the home county is based on the percentage of patients/visits used in the patient origin table. (Home County % * Total Admissions)*

Lake Norman Regional has 2 Level III NICU Beds and does not report days. Vidant Edgecombe Hospital has 10 Level III NICU Beds

Notes: # of ORs Exclude Dedicated C-Section ORs

^Have one Dedicated C-Section OR

+ Cape Fear Valley Betsy Johnson operates 5 level II neonatal beds and no dedicated OB beds. Deliveries and LDRs are reported.

Overall Utilization

UNC-RTP's overall utilization is not reasonable compared to other similar providers. By the third full year of operation, UNC-RTP projects to serve more Admissions and more Days of Care than any of the long-established hospitals in the comparison. Except for Atrium Health Lincoln, the Applicant exceeds the total admission of all other existing comparison hospitals by more than 1,000. It is unreasonable to expect that a newly established hospital of the size proposed by UNC-RTP would have utilization levels exceeding well established hospitals. See **Exhibit 24**.

Exhibit 24
Total Admissions and Days of Care Among Similar Providers

	Beds					Utilization	
Hospital	**ICU**	**Med/Surg**	**OB**	**Total Beds (No NICU)**	**Level II NICU Beds**	**Admissions**	**Total Acute Care Days**
UNC-RTP	**20**	**72**	**20**	**112**	**4**	**5,172**	**29,903**
UNC-RTP with Level II Neonatal Beds	**20**	**72**	**20**	**112**			**31,206**
Cape Fear Valley Betsy Johnson	14	112	0	126	5	5,135	23,739
Atrium Health Lincoln	10	77	10	97	4	4,906	22,236
Haywood Regional Medical Center	12	95	6	120	0	4,001	18,920
Lake Norman Regional	12	75	9	115	6	3,917	13,672
Northern Regional Hospital	10	65	13	100	0	3,873	17,878
Wautauga Medical Center	16	64	11	113	4	3,765	19,397
Atrium Health Stanley	10	72	15	97	0	3,679	16,767
Caldwell UNC Health Care	12	88	10	110	0	3,512	22,752
Annie Penn Hospital	12	98	0	110	0	3,281	13,727
Novant Health Thomasville	13	68	20	101	0	3,202	13,302
Central Carolina Hospital	8	101	17	126	1	3,143	14,006
Wilkes Medical Center	8	95	17	120	0	3,072	14,537
Vidant Roanoke-Chowan Hospital	10	56	16	86	0	2,754	14,214
Vidant Edgecombe Hospital	8	45	32	94	0	2,601	12,170
Sampson Regional	8	87	12	116	0	2,474	9,360
FirstHealth Moore Regional-Richmond	12	55	20	99	0	2,313	7,181
UNC Rockingham Hospital	9	87	12	108	0	2,109	9,266
Davis Regional Medical Center	8	86	8	102	0	638	3,707
Total/Average Community Hospitals	**11**	**79**	**13**	**108**	**20**	**3,243**	**14,824**

Source: 2023 LRAs

Projected OB Patient Days

Likewise, UNC-RTP's projected OB days of care are unreasonable. At 2,549 days, this exceeds all hospitals in the comparable sample group as shown in **Exhibit 25**. The next most utilized OB program by days of care, Lake Normal Regional, provided 816 fewer days of care than the Applicant projects and only operates 9 beds. With 32 and 20 beds, respectively, Vidant Health Edgecombe and Novant Health Thomasville, provided far less OB patient days. All comparable hospitals provided far fewer days of care than this. Once again, UNC-RTP's "if you build it, they will come" projections do not result in a realistic projection of OB patient days based on reasonable and supported assumptions.

Exhibit 25
OB Days of Care Among Similar Providers

Hospital*	OB Beds	Total Beds (No NICU)	OB Days
UNC-RTP	**20**	**112**	**2,549**
UNC-RTP with Level II Neonatal Beds	**20**	**112**	**2,549**
Lake Norman Regional	9	115	1,733
Novant Health Thomasville	20	101	1,631
Watauga Medical Center	11	113	1,243
Atrium Health Stanley	15	97	1,222
Atrium Health Lincoln	10	97	1,040
Vidant Edgecombe Hospital	32	94	1,011
Central Carolina Hospital	17	126	914
Sampson Regional	12	116	826
Vidant Roanoke-Chowan Hospital	16	86	821
UNC Rockingham Hospital	12	108	813
Davis Regional Medical Center	8	102	699
Wilkes Medical Center	17	120	684
Northern Regional Hospital	13	100	616
Haywood Regional Medical Center	6	120	17
Caldwell UNC Health Care	10	110	13
Total Average Community Hospitals	**13**	**108**	**738**

Source: 2023 LRAs
**Only hospitals with OB Beds were included. FirstHealth Moore Regional-Richmond excluded from analysis because it did not report OB days.*

Level II Neonatal Services

As shown in **Exhibit 26**, only five of the eighteen comparison hospitals operate a Level II Neonatal Care Unit. While UNC-RTP is not an outlier in terms of neonatal care offerings, it is not typical for a hospital of this size to provide the number of patients days projected for this small hospital and small unit are unreasonably high. This analysis shows that UNC-RTP's theoretical DRG-based projection methodology is simply unrealistic. There is no evidence that the population needs these beds other than the assertion that UNC-RTP want to provide a broader range of services.

Exhibit 26
Comparison of Neonatal Care Providers Among Similarly Sized Hospitals

Hospital	Level II Neonatal Beds	Level II NICU Days
UNC-RTP	**4**	**1,303**
Lake Norman Regional*	**6**	-
Cape Fear Valley Betsy Johnson	**5**	220
Atrium Health Lincoln	**4**	20
Central Carolina Hospital	**1**	12
Wautauga Medical Center	**4**	68

Source: 2023 LRAs

**Lake Norman Regional did not report Level II days in its 2023 LRA.*

Conclusion Regarding Criterion (3)

As described above in detail, UNC-RTP should be found non-conforming with Criterion (3) for the following reasons:

- UNC-RTP has not adequately identified the population to be served as almost 30% of its patient population is unidentified. Counties of origin for this patient population are not specifically identified and quantified. Further, the service needs and patient preference patterns for UNC-RTP are not documented or justified.
- The change of scope is simply based on UNC-RTPs desire to have a larger hospital to serve a larger base of patients. The Applicant has not demonstrated that there is a larger patient base that needs more beds and services that cannot be more appropriately served by existing providers.
- UNC-RTP's "need" relies on an "if you build it, they will come" theory that simply assumes if you have a larger hospital and more services that more patients will utilize the facility without need or purpose.
- UNC-RTP's projected acute care bed utilization is flawed based on layers of unsupported assumptions including the average acuity of patients, the compounding high growth rate, unreasonable in-migration assumptions, and a high ALOS. A comparison to similar providers demonstrates that all of these assumptions are overstated.
- The utilization of all other services is driven by acute care patient days. To the extent that the patient day projections are flawed, all other related projections are overstated including ICU beds and Level II neonatal patient days.
- Even based on its flawed projections, UNC-RTP has not justified its bed need. Utilization for its 20 ICU beds is not provided at all. The projections for its 20 OB beds demonstrate just 34.9% occupancy, which could be served in a unit half of that size.

The Agency should find UNC-RTP's change of scope to be non-conforming with Criterion (3).

Criterion (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.

The Applicant fails to demonstrate that its chosen alternative is the least costly or most effective. UNC-RTP identifies two alternatives to the proposed project. One is to locate the project at a different site. The other is to implement the hospital without some of the additional beds or services proposed in this application.

As described in detail related to Criterion (3), UNC-RTP fails to justify the need for additional beds and many of the services outlined above. In addition, these beds and services come with a significant cost. The total cost of the project with this "change of scope" is now **over $900 million**, which is completely unjustified as described in detail under Criterion (3). Please see Criteria (5) and (12) for a more detailed analysis of UNC-RTP's project cost.

Based on the data presented, the most effective alternative for UNC-RTP would be to simply build the original UNC-RTP 2021 project if its approval is upheld, or some other smaller number of beds. Once this facility is developed and operating, then beds and services can be added based on the actual demonstrated utilization and needs of the community for this new hospital.

As a result, the project should be found non-conforming with Criterion (4).

Criterion (5) Financial Feasibility

UNC-RTP fails to meet Criterion (5) based on numerous factors related to financial feasibility. These include errors in projected utilization, extraordinarily high capital costs tied to the project, and erroneous operating costs.

Projected Utilization/Financial Feasibility

As outlined above in response to Criterion (3), there are fatal flaws related to projected utilization in multiple service components of this application:

- UNC-RTP undertakes no significant analysis to demonstrate the need for additional med/surg beds. In addition, its projected ALOS is significantly higher than all other comparable existing providers.
- OB beds have jumped from 8 to 12 to 20 in its three applications despite demonstrating that OB patient days are declining 1% annually.
- Without justification, UNC-RTP adds 20 ICU beds to its proposed hospital. This is not only inconsistent with its two operating rooms but is also inconsistent with its original intent as a small, community hospital. Intensive care beds operate with different costs and revenues than lower levels of care. The omission of a quantitative demonstration of need only makes this addition more speculative with regard to financial feasibility.

With so many flaws in the utilization projections, there is simply no clear evidence that this project will be financially feasible based on the utilization projections contained in the application.

Capital Cost

UNC-RTP's total project cost with the 2024 change of scope now exceeds $900 million, which represents a 70% increase in cost from the 2022 UNC-RTP application. However, UNC-RTP's construction cost more than doubles with the addition of services and beds proposed in this application from approximately $323 million to $655 million with no explanation of the reason for the increased costs by line item as is required for a cost overrun or change in scope application. Additional beds and services will certainly increase the cost and size of a project, but as the second addition to the original hospital application, this increase in scope does not realistically constitute a change of this magnitude compared to the previously approved construction costs. See **Exhibit 27.** In relation to all other categories except consultant fees, the increase in construction cost is not balanced, as it accounts for 89% of the total increase in cost from the 2022 to the 2024 application.

Exhibit 27
Capital Cost Differences Between the Applicant's Three Projects

	Previously Approved Cost (2021)	Previously Approved Cost (2022)	New Total Capital Cost (2024)	Difference (2021-2024)	Percent Change (21-24)	Difference (2022-2024)	Percent Change (22-24)
Building Purchase Price	$ -	$ -	$ -	$ -	0.00%	$ -	0.00%
Purchase Price of Land	$ 35,000,000	$ 35,000,000	$ 35,000,000	$ -	0.00%	$ -	0.00%
Closing Costs	$ 184,000	$ 184,000	$ 184,000	$ -	0.00%	$ -	0.00%
Site Preparation	$ 26,868,714	$ 34,263,852	$ 34,035,833	$ 7,167,119	26.67%	$ (228,019)	-0.67%
Construction/Renovation Contract(s)	$ 126,448,482	$ 323,482,748	$ 655,576,015	$ 529,127,533	418.45%	$ 332,093,267	102.66%
Landscaping	$ 398,401	$ 701,091	$ 1,166,041	$ 767,640	192.68%	$ 464,950	66.32%
Architect/Engineering Fees	$ 14,846,480	$ 33,453,774	$ 42,602,560	$ 27,756,080	186.95%	$ 9,148,786	27.35%
Medical Equipment	$ 22,833,519	$ 49,716,249	$ 52,518,274	$ 29,684,755	130.01%	$ 2,802,025	5.64%
Non Medical Equipment	$ 8,924,482	$ 19,432,382	$ 26,064,772	$ 17,140,290	192.06%	$ 6,632,390	34.13%
Furniture	$ 3,880,484	$ 8,449,119	$ 11,142,208	$ 7,261,724	187.13%	$ 2,693,089	31.87%
Consultant Fees	$ 2,203,391	$ 2,513,192	$ 6,554,239	$ 4,350,848	197.46%	$ 4,041,047	160.79%
Financing Costs	$ -	$ -	$ -	$ -	0.00%	$ -	0.00%
Interest during Construction	$ -	$ -	$ -	$ -	0.00%	$ -	0.00%
Other	$ 10,320,216	$ 24,018,291	$ 37,711,816	$ 27,391,600	265.42%	$ 13,693,525	57.01%
Total Capital Cost	**$ 251,908,169**	**$ 531,214,698**	**$ 902,555,758**	**$ 650,647,589**	**258.29%**	**$ 371,341,060**	**69.90%**

Source: UNC-RTP Application Form F.1b 2021, 2022, 2024

The incremental cost of construction for the 2024 change of scope is $332,093,267, which is more than the total construction cost for the 2022 UNC-RTP application. Moreover, the total construction cost per bed from 2021 has increased more than 100% (more than doubled) between 2021 and 2024 as shown in **Exhibit 28.** Thus, the increased construction costs are not explained by the larger scope of the project. There is simply no explanation for the dramatic increase in total cost or construction costs provided.

Exhibit 28
Comparative Increase in Construction Cost per Bed Space

	UNC-RTP 2021	UNC-RTP 2022	UNC-RTP 2024
Acute Care Beds	40	74	112
LDRs	4	6	8
Observation Beds	10	20	16
ED Bays	12	20	28
Total Bed Spaces	**66**	**120**	**164**
Construction Costs	$ 126,448,482	$ 323,482,748	$ 655,576,015
Incremental Construction Cost		$ 197,034,266	$ 332,093,267
Cost per Bed Space	**$ 1,915,886**	**$ 2,695,690**	**$ 3,997,415**
Percent Increase from 2021		**40.7%**	**108.6%**

Source: Forms F.1a and F.1b.

UNC-RTP would be the costliest of all new hospitals approved over the last five years in terms of capital costs. UNC does not offer any explanation for the cost increases by categories.

It is impossible to know what part of the $371 million increase from the 2022 capital costs is the expense of new beds and services versus cost escalation. Likewise, it is impossible to know what part of the overall increase of $650 million from the 2021 application is new beds and services versus escalation. It simply is unclear how adding 38 acute care beds, 4 neonatal beds, and one interventional radiology room, plus a few pieces of imaging equipment can require a $371 million increase in costs. This is a cost per bed for 42 beds of $8.84 million per bed, with absolutely no supporting documentation as to the components that comprise this escalation over the 2022 change of scope application.

Financial Feasibility

UNC-RTP's own financial projections in Form F.2b Total Facility, which reflect a loss of $81,084 in the third year of operation, are based on unreasonable volume projections. UNC-RTP's change of scope should be found non-conforming with Criterion (5).

Criterion (6) Unnecessary Duplication

In its response to Criterion (6), the Applicant identifies the four new services proposed in this application and unsuccessfully tries to justify why each is not an unnecessary duplication of services in the service area. However, it misses the overall impact of the beds and services in this application coupled with the beds and services from the UNC-RTP 2022 application on the initial project proposed by UNC-RTP in 2021. The initial project was proposed by the Applicant to meet a need for a small community hospital in the Durham/Caswell service area. With the additions made in two separate change of scope applications, the proposed hospital no longer meets the description or intent of the original project.

> As also noted in both of its previous applications, UNC Hospitals believed – and continues to believe – that the greatest need is for basic community (non-tertiary) services, which are generally lower acuity, higher frequency services needed by a significant portion of the population. The table below demonstrates that the utilization of these "selected services" at

Source : UNC-RTP Application page 69

The Applicant uses circular logic to justify the added beds and services. See below.

> As detailed in Section C.8.a, above, as UNC Hospitals-RTP expands the capacity of its acute care services – and therefore expands the capacity of care it can provide to patients of Durham County and the surrounding areas – it believes that the inpatient and hospital-based outpatient services at the hospital should be expanded as appropriate in order to accommodate this expansion in inpatient bed capacity. As such, UNC Hospitals believes it is

Source : UNC RTP Application page 117

UNC-RTP attempts to justify its additional services with its additional beds, ignoring the small community hospital concept it proposed in its original application.

Further, UNC-RTP claims that because dialysis and Level II NICU will only be utilized by inpatients, it would only be provided to patients already seeking care at UNC-RTP. Clearly, if they did not include these services in prior applications, then they cannot assume they are being accessed by patients already seeking care at UNC-RTP.

With the changes in scope proposed in this application, UNC-RTP is no longer a unique small community hospital focused on serving low acuity services. Now the UNC-RTP project with its change of scope is directly duplicative of DRH's role as a community hospital. Moreover, as shown under Criterion (3) the vast majority of the needed beds in Durham County are for tertiary services to patients residing outside of Durham County and choosing DUH for its tertiary, quaternary, and specialty care. UNC-RTP will not meet this need but instead will directly and unnecessarily duplicate DRH's community hospital services for which there is no bed need.

Criterion (7) Staffing

While there are some specific, questionable staffing projections included in Form H, the bigger issue with staffing for this project is its overall size. In addition, Medical Staffing for the facility is not explained thoroughly or justified in the application to even lay a groundwork to serve the inflated utilization projections provided for all service areas throughout the application.

<u>Overall Staffing Size</u>
In UNC-RTP's current application under review, Year 1 staff totals 576.4 FTEs and grows to 687.3 in Year 3. In the Applicant's 2021 application, Year 1 staffing projections totaled 143.1 FTEs and grew to 302.2 in Year 3. This represented a ramp up of 119% over the first three years of operation. UNC-RTP 2024 now expects to have almost 575 FTEs recruited in year 1 and only ramp up 19 percent by year 3. In the 2021 application, the ramp up in FTEs aligned similarly with the ramp up in patient days. In 2024, the staffing only ramps up 19.24% while the patient days ramps up 46.2%. See **Exhibit 29**.

Exhibit 29
UNC-RTP Staffing Growth Patterns

	UNC-RTP 2021				UNC-RTP 2024			
	PY 1	**PY 2**	**PY 3**	**% Change Year 1 to 3**	**PY 1**	**PY 2**	**PY 3**	**% Change Year 1 to 3**
Total Acute Care Patient Days (w/NICU)	4,970	7,750	10,749	116.3%	21,340	25,325	31,206	46.2%
Total FTEs	143.1	217.1	302.2	111.2%	576.4	632.7	687.3	19.2%

Source: Application page C.1b and Form H.

The Applicant no longer allows for any significant ramp up in FTEs. It simply assumes that it will require high levels of staffing from day 1. The Applicant's Year 1 staffing projections are now more than 300% higher than Year 1 staffing projections for its 2021 application. No meaningful assumptions are provided in the application on page 119 or the assumptions to Form H only generic assertions that staffing will increase associated with increasing services.

UNC-RTP now proposes to recruit over 576 FTE new staff members, 4 times more FTEs than proposed in 2021, and yet UNC-RTP does not provide any additional information on how such recruitment will be accomplished. On page 118, UNC-RTP does not provide any information related to staff recruitment and simply asserts that no responses are provided. It is unreasonable for the Agency to find that UNC-RTP can recruit 576 FTEs without any information provided related to staff recruitment.

Medical Staffing

As discussed previously, UNC-RTP does not document how it will have sufficient medical staff to staff this facility. The Applicant appears to assume that all medical staff from UNC Medical Center and UNC Hospitals Hillsborough will practice at UNC-RTP.

> Hillsborough Campus data to determine these ratios. Please note that, as a new hospital developed under the provider number for UNC Hospitals, physicians who currently admit and treat patients at UNC Medical Center and UNC Hospitals Hillsborough Campus will also be members of the medical staff at UNC Hospitals-RTP. This will provide continuity of care among the UNC Hospitals campuses and strengthen the depth and breadth of services available at the new Durham County hospital. As a result, UNC Hospitals

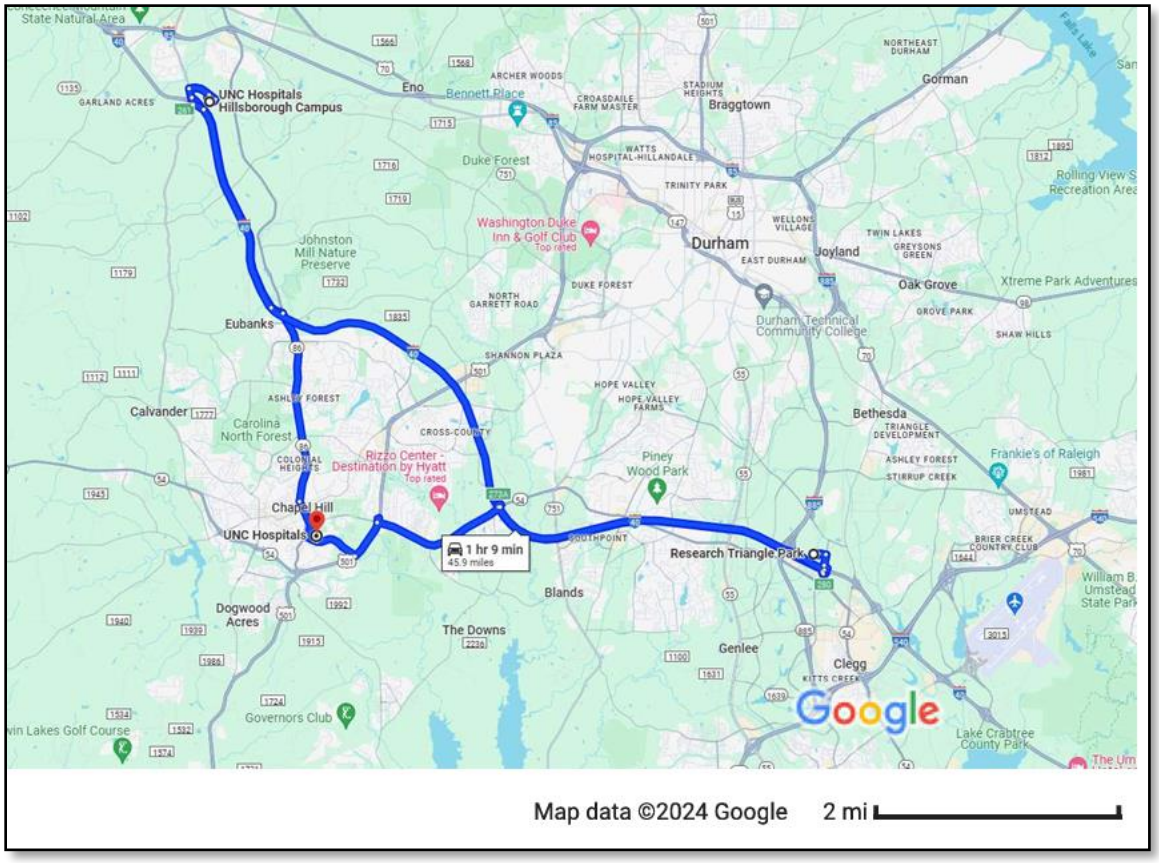
Source: UNC-RTP 2024 Application Form C Assumptions page 36

UNC-RTP does not document any specific current or projected growth in providers who would be available to support new services on this campus. It is inconsistent to assume that UNC-RTP will capture new market share (without shifting any patients from other facilities) without recruiting new physicians. More likely, the existing medical staff will shift patient volume depending on patient preference, which is inconsistent with UNC-RTP's market share assumptions. See Market Share discussion under Criterion (3).

Moreover, assuming UNC intends to rely on physicians already admitting to and utilizing the Chapel Hill and Hillsborough campuses, it seems that staffing a third hospital would be difficult to manage from a time and efficiency perspective. See **Exhibit 30**. A round trip drive without stops between the three facilities will take a little over an hour and is approximately 46 miles. There is

no direct indication from any medical staff member that they would cover three campuses or cover UNC-RTP directly.

Exhibit 30
UNC Hospitals Shared Medical Staffing Map



The physician letters of support provided in Exhibit I provide no information as to where each physician is currently practicing. The generic letters also do not include a commitment to provide staffing or coverage for the UNC-RTP location. A number of supporting physicians are based in Cary (Panther Creek) in Wake County. This is yet another location for physicians to cover. With no intent to recruit a specific number of new providers and relying on its existing providers to staff three hospitals, it is also unclear how UNC-RTP will support its new higher acuity service lines and its significant projected volumes across all services.

Based on the high staffing levels and lack of information about medical staff, UNC-RTP should be found non-conforming with Criterion (7).

Criterion (12) Cost and Methods of Construction

Despite the increased scope of the UNC-RTP 2024 project from 2022 and 2021, very little information is provided regarding the increased project costs. See discussion in Criterion (5) for details. Shown in Criterion (5) **Exhibits 27** and **28**, the Applicant proposes a 418% increase in

construction costs between 2021 and 2024. However, the cost increase does not simply represent a notable increase in the overall cost. On a per bed basis, the construction cost per bed has increased 108% from the 2021 project to the 2024 project, signaling that the construction cost has increased at a much higher rate than the number of beds from 2021 to 2024. UNC-RTP provides no explanation for this increase.

Each iteration of the project adds on to the base design used in the previous project. Given the streamlined design process, it is odd that the construction costs would increase so dramatically from project to project. Given that the project does not involve a wholesale redesign, it would be naturally assumed that the increases to the base design would create economies of scale. However, that is not the case.

UNC-RTP also fails to provide information about the zoning or site requirements for the project as now proposed. Questions about whether the proposed site can be rezoned for a hospital were identified in the findings regarding the 2021 UNC-RTP Application. UNC-RTP provides no update about whether the site is available and can be approved for hospital use; whether there have been any changes to the restrictions on the site that were identified in 2021; or whether the changed size and scope of the facility would need any additional site approval reflecting increased parking and traffic needs. To the best of DUHS's understanding, the proposed site is <u>not</u> permitted for hospital use as of the date of the filing of the application. References to potential "alternative" sites raise questions about UNC-RTP's stated need for this facility and additional beds based on its geographic analysis.

UNC-RTP should be found non-conforming with Criterion (12)

Criterion (13) Medically Underserved Population

UNC-RTP uses only Durham County residents' historical payor mix data from HIDI and UNC internal data as the basis for its payor source projections (See Application page 134). While Durham County residents are projected to compose 70% of the patient base for UNC-RTP, 30% of patients are projected to originate from outside of Durham County (Chatham, Person, Granville, Caswell, Wake, and Warren Counties), that include more rural areas with a notably different payor mix.

For services not broken out in the HIDI database, the Applicant uses its own internal data for Durham County residents out-migrating to UNC for care to determine payor mix. This includes charity care. The Applicant fails to consider that patients out-migrating to UNC facilities for care may have a different payor composition than the average for Durham County overall. The payor mix of these patients out-migrating to UNC is not relevant as they do not represent the patients they expect to serve, given UNC's representations that any resulting Durham market share is new, not a shift from existing facilities.

The reliance on Durham County to provide all data (particularly when Caswell and Warren are part of the planning area) and the use of internal data without considering its limitations, results in an unreliable projected payor mix. While UNC-RTP only considers the payor mix of patients from

Durham County for the 2024 application and the original 2021 application, it appears the payor mix projections for the hospital have changed dramatically as shown in **Exhibit 31**.

Exhibit 31

Total Hospital

	2021	2022	2024	21-'24 Change
Self-Pay	16.9%		10.5%	-6.4%
Charity Care	0.0%		0.0%	0.0%
Medicare	24.4%	No Payor	39.5%	15.1%
Medicaid	12.2%	Mix	15.0%	2.8%
Insurance	35.8%	Provided	30.8%	-5.0%
Other	10.7%		4.2%	-6.5%
Total	100.0%		100.0%	

Inpatient

	2021	2022	2024	21-'24 Change
Self-Pay	8.9%		8.2%	-0.7%
Charity Care	0.0%		0.0%	0.0%
Medicare	44.6%	No Payor	51.1%	6.5%
Medicaid	19.0%	Mix	16.6%	-2.4%
Insurance	25.3%	Provided	23.2%	-2.1%
Other	2.2%		0.9%	-1.3%
Total	100.0%		100.0%	

Ambulatory Surgery*

	2021	2022	2024	21-'24 Change
Self-Pay	2.1%		1.7%	-0.4%
Charity Care	0.0%		0.0%	0.0%
Medicare	34.7%	No Payor	32.7%	-2.0%
Medicaid	7.0%	Mix	7.9%	0.9%
Insurance	51.0%	Provided	49.2%	-1.8%
Other	5.2%		8.5%	3.3%
Total	100.0%		100.0%	

Emergency Department

	2021	2022	2024	21-'24 Change
Self-Pay	36.1%		27.4%	-8.7%
Charity Care	0.0%		0.0%	0.0%
Medicare	10.0%	No Payor	14.5%	4.5%
Medicaid	21.8%	Mix	22.2%	0.4%
Insurance	28.8%	Provided	30.0%	1.2%
Other	3.3%		5.9%	2.6%
Total	100.0%		100.0%	

Ambulatory Imaging

	2021	2022	2024	21-'24 Change
Self-Pay	9.4%		5.4%	-4.0%
Charity Care	0.0%		0.0%	0.0%
Medicare	28.2%	No Payor	39.1%	10.9%
Medicaid	6.8%	Mix	5.6%	-1.2%
Insurance	39.6%	Provided	40.1%	0.5%
Other	16.0%		9.8%	-6.2%
Total	100.0%		100.0%	

Source: CON Section L for all applications

It is unclear how the same hospital in the same location basing its payor mix on Durham County residents could project a 6.4% decline in self-pay patients and a 15.1% increase in Medicare patients overall. UNC-RTP does not explain why any change in scope of services would cause self-pay patients to drop from 16.9% to 10.5%. In fact, Self-Pay patient percentages are lower for every category of service. For the same emergency department in the exact same location, self-pay patients dropped by 8.7%.

For inpatient services, Medicare patient percentage has increased despite adding services such as Level II neonatal beds for which patients are not eligible for Medicare. Likewise, for ambulatory imaging, the Medicare patient percentage increases 10.9%.

UNC-RTP should be found non-conforming with Criterion (13).

Criterion (18a) The Project will not Offer Quality Care or Increase Access, based on Increased Competition

Quality Care

UNC-RTP fails to acknowledge that its affiliate UNC Medical Center in Chapel Hill, which is owned and operated by the applicant, was cited for multiple immediate jeopardy level deficiencies by CMS in July 2022 and no explanation is provided by UNC-RTP. See discussion of Criterion (20).

Increased Access to Care

While the original UNC-RTP 2021 project may have been proposed to provide an additional access point for acute care hospital services in the Durham/Caswell service area, the continued delays in implementing this new hospital through two "change of scope" applications will delay the service area's critically needed access to acute care beds until 2032, which is 9.75 years after the need calculation in the 2021 SMFP. The proposed change of scope project does not increase access to care.

Increase in Competition

UNC-RTP latest project iteration will not increase competition. It will not create a new hospital site location in Durham County. UNC-RTP presents this project as a change in scope" to a previously proposed project. Therefore, neither of the "change of scope" projects represent a new entrant to the service area nor a new facility location. A proposed new hospital can only be a "new entrant" once.

Criterion (20) Track Record of Providing Quality Care

Criterion (20) requires each applicant to demonstrate that it has a track record of quality of care and patient safety. DUH would simply note that UNC Medical Center was cited by CMS for multiple Immediate Jeopardy ("IJ") level deficiencies in July 2022 and threatened with the loss of Medicare funding. These deficiencies occurred before the 18-month lookback period applicable to

this project but during the relevant 18-month period for the UNC-RTP 2022 application. The 2022 applications were filed on April 18, 2022 and a decision issued on September 23, 2022, and these deficiencies have not been addressed in either the UNC-RTP 2022 or UNC-RTP 2024 applications. For informational purposes, please see **Attachment B** for specific information related to the IJ deficiencies found for UNC Medical Center.

CRITERIA AND STANDARDS FOR ACUTE CARE BEDS

UNC-RTP does not include its proposed Level II neonatal beds in its discussion and analysis of the performance standards for acute care beds. While there may not be any relevant methodology in the SMFP related to neonatal beds and the performance standards related to neonatal intensive care only apply to Level IV NICU services, the Level II beds proposed by UNC-RTP will be licensed acute care beds. The performance standards do not reference any need methodology in the SMFP, and thus, the acute care performance standards apply.

In addition, UNC-RTP's projected utilization is flawed in numerous ways and is completely unreasonable. Event just focusing on one flawed assumption shows that UNC-RTP does not meet the performance standards for hospitals with an ADC less than 100 of 66.7%.

> *(5) project an average occupancy rate of the existing, approved, and proposed acute care beds for the hospital system during the third full fiscal year of operation following completion of the project that equals or exceeds the target occupancy percentage of:*
>
> *(a) 66.7 percent if the ADC is less than 100;*
>
> *(b) 71.4 percent if the ADC is 100 to 200;*
>
> *(c) 75.2 percent if the ADC is 201 to 399; or*
>
> *(d) 78.0 percent if the ADC is greater than 400; and*

UNC-RTP's volume projections are unreasonable and unsupported. As discussed above, the in-migration assumption of almost 30% is unreasonable. If UNC-RTP continued to use the in-migration assumptions from its previous applications, the proposed project will not meet the performance standards as shown in **Exhibit 32** below. Even with the proposed Level II neonatal beds, UNC-RTP will not meet this standard.

Exhibit 32

	Without Level II Beds	With Level II Beds
Total Medical Days	13,226	13,226
Total Surgery Days	5,978	5,978
Total Obstetrics Days	1,789	1,789
Level II Days*		925
Total Durham County Days	20,993	21,918
2021 UNC-RTP In-migration	10.0%	10.0%
In-migration at 2021 %	2,333	2,435
Total Patient Days	23,326	24,353
ADC	63.9	66.7
Beds	112	116
Occupancy Rate	**57.1%**	**57.5%**
Performance Standard	**66.7%**	**66.7%**

**1,789 Level II neonatal days includes 29% inmigration based on ratio of OB days with in-migration. Level II days without in-migration is 71% lower*

Patient Days without inmigration from CON application, Section Q, Form C assumptions pages 13 and 24.

In-migration is just one of many assumptions for UNC-RTP's utilization projections that are overly aggressive and unsupported. The growth rates used to project patient days and the ALOS assumptions are additional examples discussed in detail in Criterion (3). If any one of these aggressive assumptions are found to be flawed or unreasonable, UNC-RTP will not meet the performance standards.

It is unrealistic to believe that UNC-RTP's projections can meet the performance standards if historical utilization of comparable facilities is considered. UNC-RTP projects a year 1 ADC of 58.47. This first year ADC is larger than the number of total beds proposed in all, but two new hospitals approved since 2019. In 2021, UNC-RTP projected a third-year ramp up to an ADC of 29.45. Now, with the addition of just a few service lines, UNC-RTP projects a third year ADC of 85.5, almost 3 times higher than the UNC-RTP 2021 application. See **Exhibit 33**. As noted above, UNC-RTP's projected acute care utilization far exceeds the track record of the two most proximate community hospitals operated by UNC Health System – UNC Hillsborough and Rex Holly Springs. It is simply unreasonable and unrealistic to find that UNC-RTP will meet the performance standards for a 112 (116) bed new hospital in the third year of operation.

Exhibit 33
Comparison of Projected ADC for Change of Scope

	UNC-RTP 2021			UNC-RTP 2022			UNC-RTP 2024		
	PY 1	**PY 2**	**PY 3**	**PY 1**	**PY 2**	**PY 3**	**PY 1**	**PY 2**	**PY 3**
Total Acute Care Patient Days (w/NICU)	4,970	7,750	10,749	11,847	16,455	18,869	21,340	25,325	31,206
ADC	13.62	21.23	29.45	32.46	45.08	51.70	58.47	69.38	85.50
Change from 2021				238%	212%	176%	429%	327%	290%
Change from 2022							180%	154%	165%

Source: Application page C.1b

COMPARATIVE REVIEW

Pursuant to GS 131E-183(a)(1) and the 2024 SMFP, no more than 38 acute care beds may be approved for the Durham/Caswell/Warren County service area in this review. Because the applications in the review collectively propose to develop 76 additional acute care beds in Durham County, all applicants cannot be approved for the total number of beds proposed. Therefore, after considering all review criteria, DUH conducted a comparative analysis of each proposal to demonstrate why DUH is the best applicant and should be approved.

Below is a brief description of each project included in the Acute Care Bed Comparative Analysis.

- Project ID J-12512-24/**Duke University Hospital ("DUH" or "DUH 2024")**/ Develop 38 additional acute care beds at DUH's existing hospital in Durham pursuant to the 2024 SMFP Need Determination.
- Project ID J-12509-24/**UNC Hospitals-RTP ("UNC-RTP" or "UNC-RTP 2024")**/Develop 38 additional acute care beds at UNC-RTP[5] approved hospital in Durham pursuant to the 2024 SMFP Need Determination.

In the following analysis, DUH describes the relative comparability of each competing applicant regarding the comparative criteria typically used by the CON section and further indicates which factors cannot be effectively compared in this review because of differences among the competing applicants.

Conformity with Review Criteria

Among the competing applicants, only the DUH application conforms with all applicable statutory and regulatory review criteria. UNC-RTP does not conform to statutory and regulatory review criteria (1), (3), (4), (5), (6), (7), (8), (12), (13), (18a), and (20).

[5] This project is a change in scope for the original UNC-RTP 2021 (Project ID J-12065-21) and UNC-RTP 20222 (Project ID J-12214-22). The details of these projects are discussed in detail at the beginning of these comments.

Therefore, DUH is the most effective alternative regarding the conformity with review criteria, and UNC-RTP is not approvable.

Scope of Services

Generally, the application proposing to provide the broadest scope of services is the most effective alternative regarding this comparative factor.

DUH is an existing acute care provider to include a Level I trauma center and a tertiary and quaternary care academic medical center providing a wide array of advanced medical services. UNC-RTP is a proposed community hospital that will offer a smaller range of services to patients of lower acuity.

DUH's high utilization generated the need for the additional acute care beds identified in the 2024 SMFP, making this comparative factor especially relevant to this review. The demand for acute care beds is being generated by the highly specialized services offered only at DUH and DUH's patient origin, and UNC-RTP does not propose to offer such services to that population.

Therefore, only DUH projects the range of high acuity services driving the SMFP need for acute care beds in the service area, making it the most effective alternative with respect to this comparative factor. UNC-RTP is the least effective alternative.

Geographic Accessibility

Neither UNC-RTP's change of scope nor DUH's proposed project will change the location of existing or proposed acute care hospitals in Durham County. UNC-RTP is specifically proposing a "change in scope" to a facility previously proposed, not a new facility. There will be no meaningful change in geographic access to hospital services. In addition, UNC-RTP's application represents added capacity without regard to need for services demonstrated in the proposed location. It is unclear where UNC-RTP's patients will come from, including how many patients they will serve from Caswell and Warren Counties, which are part of the acute care service area. It is notable that the UNC-RTP facility is located almost on the Durham-Wake border and is less accessible to patients from most of the service area. It cannot be determined that UNC-RTP's change of scope application will increase geographic access, especially if its additional beds and services are not needed.

Moreover, most of the acute care bed need for Durham County reflects the high acuity patients served by DUH, including over 71.5 percent of patients from outside of Durham County. UNC-RTP's project will not meet this high acuity need and will not increase geographic access for those needed services, as patients are traveling from throughout the state for DUH's tertiary and quaternary care. DUH's project will expand geographic access to a broad range of patients throughout the region and state.

DUH's project should be found to be the most accessible as it will serve the broadest patient origin and the most patients from Durham, Caswell, and Warren Counties.

Historical Utilization

Generally, the applicant with the higher historical utilization is considered the more effective alternative with regard to this comparative analysis factor. As mentioned previously, UNC-RTP 2021 (Project ID # J-12065-21) was approved in 2021, appealed, and is currently pending a decision by the Court of Appeals. Although the facility is not yet built, the application under review represents the second "change in scope" application filed for the hospital, meaning it is not a new entrant to the inventory. Thus, relative historical utilization is relevant and must be considered for this review.

Assuming UNC=RTP's approval to build a hospital is upheld, which it does in its application by framing this as a "change in scope," the table below presents the acute care utilization for DUH and UNC-RTP, excluding NICU services. As UNC-RTP is an "existing" facility, though it has not yet come online, its historical utilization would either be "0" or would assume the occupancy rate identified in the 2021 application. DUH's historical utilization of 82.4% occupancy is higher than that of UNC-RTP, even when using the 3rd full fiscal year occupancy rate, it previously projected.

Historical Acute Care Bed Utilization Comparison - Hospital*

Hospital/Applicant in Market	Beds	Patients Days	ADC	% Occupancy
Duke Regional Hospital	298	70,718	194	65.0%
Duke University Hospital	981	310,870	852	86.8%
Duke Health System	**1,279**	**381,588**	**1,045**	**81.7%**
UNC-RTP 2021 (3rd Full FY)	40	10,749	29	73.6%

Source: Draft 2025 SMFP and UNC RTP 2021 bates page 136

**Acute care beds not including NICU services*

There is no doubt that DUH and DUHS are highly utilized and in urgent need of additional bed capacity. At this point, no beds will come online at UNC-RTP until 2032, which is 8 years from now. This will not address the urgent bed need in Durham County.

DUH is the most effective alternative regarding historical utilization.

Competition/Access to a New or Alternative Provider

For the purposes of this application, both DUH and UNC-RTP should be considered existing acute care providers in the service area. While UNC-RTP has not yet been implemented, it has received Agency approval, is awaiting a final decision in the Court of Appeals, and it has submitted two change of scope applications in the last three years to build upon its initial approval. Therefore, neither change of scope project represents a new entrant to the service area. UNC-RTP does not get to be considered as a "new entrant" to the market three times.

As the region's quaternary care center, DUH has generated a bed need for the service area in three of the last four SMFPs. Its trauma and high acuity services have driven the acute care bed need in each of these occasions. UNC-RTP has applied for the beds each time, arguing in 2021 and 2022 that Durham County needed a small community hospital, and it was ultimately awarded the acute care beds identified in the 2021 and 2022 SMFPs.

With its 2024 change in scope application, UNC-RTP no longer resembles the community hospital it first proposed. It now includes a 20-bed ICU, 4 Level II NICU beds, and several new service lines. With its added capabilities, significant bed expansion, and its self-identified higher acuity patient base, it now resembles and duplicates Duke Regional Hospital and can no longer attempt to set itself apart as an alternative provider type.

In the past, the Agency has taken a somewhat limited approach to competition, often concluding that any new provider automatically creates beneficial competition and has ignored that the high and often specialized utilization of existing providers generated the need in the SMFP for a given review. This approach unfortunately ignores that the provider generating the need often offers more complex and diverse services to a broader range of patients than a new provider or expanding provider can offer. This approach results in the award of beds to smaller community hospitals that do not offer services needed to meet the demand generated by the existing provider's high and often specialized utilization under the pretense of "improving competition." In reality, it can result in a costly, unnecessary duplication of services without meeting the actual need. DUH encourages the Agency to consider the competition factor in combination with other equally important CON Statutory criteria, such as unnecessary duplication of services, limiting cost, and serving the needs of the service area population based on the scope of services provided. The SHCC specifically directs this balancing of criteria on page 3 of the 2024 SMFP. Moreover, during the May 2025 meeting of the Acute Care Committee of the State Health Coordinating Council, it was mentioned how tertiary facilities are holding patients due to insufficient bed capacity. This is reflective in the draft 2025 SMFP need due to the high bed needs in counties with tertiary providers.

It is important to note that competition can only be fairly measured when the competitors deliver similar services to a comparable population. In this review, UNC-RTP will not offer comparable services or treat comparable patients to those at DUH. There is no basis for concluding that UNC-RTP's project will create competition that would have any beneficial effect on cost, quality. In previous reviews, the agency has found that the introduction of a new provider or expansion of an

existing provider that controls fewer acute care beds will "generally" be the most effective alternative on the "assumption that increased patient choice would encourage all providers in the services area to improve quality or lower costs in order to compete for patients." This assumption is simply not justified in the context of this competitive review. For example, the article "Association Between Teaching Status and Mortality in US Hospitals," Burke et al, *JAMA.* 2017;317(20):2105-2113. doi:10.1001/jama.2017.5702 (https://jamanetwork.com/journals/jama/fullarticle/2627971), researchers confirmed that "Among hospitalizations for US Medicare beneficiaries, major teaching hospital status was associated with lower mortality rates for common conditions compared with nonteaching hospitals" (See **Attachment C**). Adding beds to UNC-RTP would have no beneficial effect on the quality of other providers in the service area. And because UNC-RTP will not meet the need for the specialized services that drove the need determination, it could have no effect on costs for such services.

UNC-RTP does not represent beneficial competition. DUH's project, on the other hand, is the least costly and will provide beds for patients of high acuity needing a broad range of specialized services. DUH also will positively impact competition by expanding access for needed services for patients across the state. For these reasons, to the extent the Agency uses "competition" as a comparative factor, the Agency should find that DUH will have the most positive impact on competition, making DUH the most effective alternative.

Access by Service Area Residents

On page 31, the 2024 SMFP defines the acute care bed service area as "*... the single or multicounty grouping shown in Figure 5.1.*" Figure 5.1, on page 36, shows the multicounty grouping of Durham/Caswell/Warren Counties as the acute bed service area. Thus, the service area for this review of acute care beds is Durham/Caswell/Warren Counties. Facilities may also serve residents of counties not included in the service area. Generally, the application projected to be the most accessible to Durham/Caswell/Warren Counties is the most effective alternative with regard to this comparative factor.

Patients from the Acute Care Planning Area - Inpatient Services (3rd Full FY)

	Duke University Hospital*		UNC-RTP^	
	Patients	**Percent**	**Patients**	**Percent**
Durham	11,129	94.9%	3,631	Unknown
Caswell	187	1.6%	included in Other	Unknown
Warren	414	3.5%	included in Other	Unknown
Total Planning Area	**11,730**	100.0%	**3,631**	Unknown
Other	28,672		1,541	
Total Patient Origin	40,402		5,172	

Source: Respective applications projected patient origin (Duke 2024 page 31-32 and UNC-RTP 2024 page 86)

**Adult inpatient services only. Excludes pediatric inpatient services.*

^*UNC-RTP does not provide Level II discharges so the total discharges is unavailable.*

The table above shows the patient origin for inpatient services from each facility's acute care planning area. It is essential the Agency look beyond a simple percentage when evaluating this factor and not ignore the services needed by the projected patients and whether the applicant can meet that need. A simplistic analysis can ignore differentiating qualities of the applicants and can, in fact, unfairly penalize a high acuity applicant that serves a substantial percentage of patients outside the planning area. The table shows that DUH projects to serve the most patients in the planning area counties, including the most patients in Durham County. In comparison, UNC-RTP serves only a small fraction of total patients projected by DUH. UNC-RTP does not quantify the patients it will serve in Caswell and Warren Counties, as all patients not originating from Durham County are grouped together in an "Other" category.

Given that UNC-RTP does not even quantify patients in Caswell and Warren Counties, which are a part of the planning area for the project, it is clear that DUH is the most effective alternative with regard to access by service area residents.

Access by Underserved Groups

"Underserved groups' is defined in G.S. 131E-183(a)(13) as follows:

> *"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 proposed services, particularly those need identified in the State Health Plan as serving priority."*

The applications in this review are compared below with respect to three underserved groups: charity care patients (i.e., medically indigent, or low-income persons), Medicare patients, and Medicaid patients. Access by each group is treated as a separate factor.

The Agency may use one or more of the following metrics to compare the applications:

- Total Charity Care, Medicare, or Medicaid patients
- Charity Care, Medicare, or Medicaid admission as a percentage of total patients
- Total Charity Care, Medicare, or Medicaid dollars
- Charity Care, Medicare, or Medicaid as percentage of Gross Revenue or Net Revenue
- Charity Care, Medicare, or Medicaid cases per patient

After analyzing the measures outlined above, it is clear that access cannot be meaningfully compared between the two Applicants, consistent with the Agency's determination in other similar reviews.

- Projected Charity Care - Based on each applicant's differing categorization of Charity Care, a direct comparison of their effectiveness in providing Charity Care is not feasible.

Therefore, one cannot make a valid comparison of Charity Care in this acute care bed batch review. This comparison should be determined to be inconclusive.

- Projected Medicare - Due to the differences in acuity levels of patients and the level of care (tertiary and quaternary care academic medical center vs. community hospital) at each facility, a comparison of average Medicare revenue per patient is inconclusive. In addition, DUH only provides projections for adult inpatient services, which are affected by the project. Finally, UNC-RTP does not provide admissions associated with Level II neonatal care. As a result, this comparison is inconclusive.
- Projected Medicaid - Due to the differences in acuity levels of patients and the level of care at each facility (tertiary and quaternary care academic medical center vs. community hospital), a comparison of average Medicaid revenue per patient is inconclusive. In addition, DUH only provides projections for adult inpatient services, which are affected by the project. Finally, UNC-RTP did not provide total discharges including level II neonatal care. Thus, an apples-to-apples comparison cannot be made. This factor should be found inconclusive.

Projected Average Net Revenue per Case and Projected Average Operating Expense per Case

The Agency often uses the above comparative metrics in assessing the most effective alternative. For many services, the applicant projecting the lowest average is found to be the most effective alternative, respectively, for each of these metrics. Due to the differences in acuity levels of patients and the level of care (tertiary and quaternary care academic medical center vs. community hospital) at each facility, comparisons of projected Net Revenue per patient and Projected Average Operating Expense per Case do not offer conclusive comparisons of the two applicants. In addition, DUH provided projections for adult inpatients which cannot be compared to the total hospital services projected by UNC-RTP. These comparative factors are inconclusive.

Summary

The following summary identifies that the DUH application should be found most effective based on the various comparative factors analyzed.

Comparative Factor	**DUH**	**UNC-RTP**
Conformity with Review Criteria	**Yes**	No
Scope of Services	**Most Effective**	Less Effective
Geographic Accessibility	**Most Effective**	Less Effective
Historical Utilization	**Most Effective**	Less Effective
Competition/Access to New/Alternate Provider	**Most Effective**	Less Effective
Access by Service Area Residents	**Most Effective**	Less Effective
Access by Underserved Groups		
Access by Charity Care Patients	Inconclusive	Inconclusive
Access by Medicare Patients	Inconclusive	Inconclusive
Access by Medicaid Patients	Inconclusive	Inconclusive
Projected Average Net Revenue per Case	Inconclusive	Inconclusive
Projected Average Operating Expense per Case	Inconclusive	Inconclusive
Total	**Most Effective**	Less Effective

CONCLUSION

G.S. 131E-183(a)(1) states that the need determination in the SMFP is the determinative limit on the number of acute care beds that the Healthcare Planning and Certificate can approve. Approval of all applications submitted during the review would result in an acute care bed excess of the need determination for the Durham/Caswell/Warren County service area. Only DUH's project can be approved as it is the only application that conforms to all project review criteria and applicable performance standards. However, DUH's project is still the most effective alternative to meet the need if all applicants were approvable, based on the summary above. As such, DUH's project should be approved.

Attachment A

Draft 2025 SMFP

Acute Care Bed Need Calculations

Table 5A: Acute Care Bed Need Projections
GRM, 2019-2023

A	B	C	D	E	F	G	H	I	J	K	L
Service Area	License Number	Facility Name	Licensed Acute Care Beds	Adjustments for CONs/ Previous Need	Inpatient Days of Care	Growth Rate Multiplier (GRM)	Projected Days of Care	2026 Projected Average Daily Census (ADC)	2026 Beds Adjusted for Target Occupancy	Projected 2026 Deficit or Surplus (surplus shows as a "-")	2026 Need Determination
Alamance	H0272	Alamance Regional Medical Center	170	0	44,873	1.0585	56,325	154	216	46	
Alamance Total			**170**	**0**							**46**
Alexander	H0274	Alexander Hospital (closed)*	25	-25		0.0000	0	0	0	0	
Alexander Total			**25**	**-25**							**0**
Alleghany		2024 Acute Care Bed Need Determination	0	3		1.0617	0	0	0	-3	
Alleghany	H0108	Alleghany Memorial Hospital	3	0	614	1.0617	780	2	3	0	
Alleghany Total			**3**	**3**							**0**
Anson	H0082	Atrium Health Anson	15	0	1,502	1.1633	2,750	8	11	-4	
Anson Total			**15**	**0**							**0**
Ashe	H0099	Ashe Memorial Hospital	76	0	3,221	-1.0740	3,221	9	13	-63	
Ashe Total			**76**	**0**							**0**
Avery	H0037	Charles A. Cannon, Jr. Memorial Hospital**/^^	13	0	1,134	-1.0917	1,134	3	5	-8	
Avery Total			**13**	**0**							**0**
Beaufort	H0188	Vidant Beaufort Hospital, A campus of Vidant Medical Center	120	0	14,653	1.0247	16,157	44	66	-54	
Beaufort Total			**120**	**0**							**0**
Bertie	H0268	Vidant Bertie Hospital	6	0	1,184	-1.0429	1,184	3	5	-1	
Bertie Total			**6**	**0**							**0**
Bladen	H0154	Cape Fear Valley-Bladen County Hospital**	48	0	3,507	1.0955	5,051	14	21	-27	
Bladen Total			**48**	**0**							**0**
Brunswick	H0150	J. Arthur Dosher Memorial Hospital	25	0	1,637	1.0351	1,879	5	8	-17	
Brunswick	H0250	Novant Health Brunswick Medical Center	74	0	15,836	1.0351	18,176	50	75	1	
Brunswick Total			**99**	**0**							**0**
Buncombe		2022 Acute Care Bed Need Determination	0	67		1.0452	0	0	0	-67	
Buncombe		2024 Acute Care Bed Need Determination	0	26		1.0452	0	0	0	-26	
Buncombe	H0036	Mission Hospital	682	0	216,157	1.0452	257,994	706	904	222	
Buncombe/Graham/Madison/Yancey Total			**682**	**93**							**129**
Burke	H0062	UNC Health Blue Ridge	289	0	26,449	1.0661	34,170	94	140	-149	
Burke Total			**289**	**0**							**0**
Cabarrus		2024 Acute Care Bed Need Determination	0	31		1.0758	0	0	0	-31	
Cabarrus	H0031	Atrium Health Cabarrus	427	63	142,879	1.0758	191,412	524	671	181	
Cabarrus		Atrium Health Harrisburg	0	24		1.0758	0	0	0	-24	
		Atrium Health	427	87	142,879		191,412	524	671	157	

Table 5A: Acute Care Bed Need Projections
GRM, 2019-2023

A	B	C	D	E	F	G	H	I	J	K	L
Service Area	License Number	Facility Name	Licensed Acute Care Beds	Adjustments for CONs/ Previous Need	Inpatient Days of Care	Growth Rate Multiplier (GRM)	Projected Days of Care	2026 Projected Average Daily Census (ADC)	2026 Beds Adjusted for Target Occupancy	Projected 2026 Deficit or Surplus (surplus shows as a "-")	2026 Need Determination
Cabarrus Total			**427**	**118**							**126**
Caldwell	H0061	Caldwell UNC Health Care	110	0	20,674	1.0272	23,016	63	95	-15	
Caldwell Total			**110**	**0**							**0**
Carteret	H0222	Carteret General Hospital	132	0	23,749	1.0152	25,225	69	104	-28	
Carteret Total			**132**	**0**							**0**
Catawba		2024 Need Determination	0	0		1.0379	0	0	0	0	
Catawba	H0223	Catawba Valley Medical Center**	180	0	36,425	1.0379	42,267	116	162	-18	
Catawba	H0053	Frye Regional Medical Center	203	0	36,216	1.0379	42,024	115	161	-42	
Catawba Total			**383**	**0**							**0**
Chatham	H0007	Chatham Hospital	25	0	3,259	1.1278	5,273	14	22	-3	
Chatham Total			**25**	**0**							**0**
Cherokee	H0239	Erlanger Murphy Medical Center	57	0	4,341	-1.0608	4,341	12	18	-39	
Cherokee/Clay Total			**57**	**0**							**0**
Chowan	H0063	Vidant Chowan Hospital	47	0	5,959	1.0419	7,024	19	29	-18	
Chowan Total			**47**	**0**							**0**
Cleveland	H0024	Atrium Health Cleveland	280	0	58,555	1.0835	80,703	221	294	14	
Cleveland Total			**280**	**0**							**0**
Columbus	H0045	Columbus Regional Healthcare System**	154	0	15,207	1.1389	25,583	70	105	-49	
Columbus Total			**154**	**0**							**0**
Craven	H0201	CarolinaEast Medical Center	307	0	63,669	-1.0032	63,669	174	244	-63	
Craven/Jones/Pamlico Total			**307**	**0**							**0**
Cumberland	H0213	Cape Fear Valley Medical Center	500	92	157,991	-1.0046	157,991	433	554	-38	
Cumberland Total			**500**	**92**							**0**
Dare	H0273	The Outer Banks Hospital	20	0	2,961	1.0748	3,951	11	16	-4	
Dare Total			**20**	**0**							**0**
Davidson	H0027	Lexington Medical Center	94	0	14,684	1.0258	16,258	45	67	-27	
Davidson	H0112	Novant Health Thomasville Medical Center	101	0	11,556	1.0258	12,795	35	53	-48	
Davidson Total			**195**	**0**							**0**
Davie	H0171	Davie Medical Center	50	0	4,490	1.0451	5,356	15	22	-28	
Davie Total			**50**	**0**							**0**
Duplin	H0166	Vidant Duplin Hospital	56	0	10,089	1.0056	10,317	28	42	-14	
Duplin Total			**56**	**0**							**0**
Durham		2021 Acute Care Bed Need Determination	0	40		1.0285	0	0	0	-40	

Table 5A: Acute Care Bed Need Projections
GRM, 2019-2023

A	B	C	D	E	F	G	H	I	J	K	L
Service Area	License Number	Facility Name	Licensed Acute Care Beds	Adjustments for CONs/ Previous Need	Inpatient Days of Care	Growth Rate Multiplier (GRM)	Projected Days of Care	2026 Projected Average Daily Census (ADC)	2026 Beds Adjusted for Target Occupancy	Projected 2026 Deficit or Surplus (surplus shows as a "-")	2026 Need Determination
Durham		2022 Acute Care Bed Need Determination	0	68		1.0285	0	0	0	-68	
Durham		2024 Acute Care Bed Need Determination	0	38		1.0285	0	0	0	-38	
Durham	H0233	Duke Regional Hospital	298	0	70,718	1.0285	79,117	217	288	-10	
Durham	H0015	Duke University Hospital***	981	0	310,870	1.0285	347,791	952	1,219	238	
		Duke University Health System	1,279	0	381,588		426,908	1,169	1,507	228	
Durham	H0075	North Carolina Specialty Hospital	18	6	1,148	1.0285	1,284	4	5	-19	
Durham/Caswell/Warren Total			**1,297**	**152**							**82**
Edgecombe	H0258	Vidant Edgecombe Hospital	91	0	11,163	-1.0450	11,163	31	46	-45	
Edgecombe Total			**91**	**0**							**0**
Forsyth	H0209	Novant Health Forsyth Medical Center	809	20	205,296	-1.0017	205,296	562	719	-110	
Forsyth	H0229	Novant Health Medical Park Hospital	22	0	1,505	-1.0017	1,505	4	6	-16	
		Novant Health	831	20	206,801		206,801	566	726	-125	
Forsyth	H0011	Atrium Health Wake Forest Baptist	722	52	216,194	-1.0017	216,194	592	758	-16	
Forsyth Total			**1,553**	**72**							**0**
Franklin	H0267-B	Maria Parham-Franklin	70	0		0.0000	0	0	0	-70	
Franklin Total			**70**	**0**							**0**
Gaston	H0105	CaroMont Regional Medical Center	397	26	112,617	1.0323	127,882	350	466	43	
Gaston		CaroMont Regional Medical Center - Belmont	0	78		1.0323	0	0	0	-78	
		CaroMont Health	397	104	112,617		127,882	350	466	-35	
Gaston Total			**397**	**104**							**0**
Granville	H0098	Granville Health System	62	0	5,966	1.0037	6,055	17	25	-37	
Granville Total			**62**	**0**							**0**
Guilford	H0052	Atrium Health Wake Forest Baptist - High Point Medical Center	301	0	56,218	-1.0077	56,218	154	215	-86	
Guilford	H0159	Cone Health	709	0	167,071	-1.0077	167,071	457	585	-124	
Guilford Total			**1,010**	**0**							**0**
Halifax	H0230	Vidant North Hospital	184	0	15,955	-1.0337	15,955	44	66	-118	
Halifax/Northampton Total			**184**	**0**							**0**
Harnett	H0224	Cape Fear Valley Betsy Johnson Hospital	126	0	21,131	1.1236	33,683	92	138	12	
Harnett Total			**126**	**0**							**0**
Haywood	H0025	Haywood Regional Medical Center**	120	0	20,748	1.0489	25,118	69	103	-17	
Haywood Total			**120**	**0**							**0**
Henderson	H0019	AdventHealth Hendersonville**	62	0	14,099	1.0223	15,397	42	63	1	

Table 5A: Acute Care Bed Need Projections
GRM, 2019-2023

A	B	C	D	E	F	G	H	I	J	K	L
Service Area	License Number	Facility Name	Licensed Acute Care Beds	Adjustments for CONs/ Previous Need	Inpatient Days of Care	Growth Rate Multiplier (GRM)	Projected Days of Care	2026 Projected Average Daily Census (ADC)	2026 Beds Adjusted for Target Occupancy	Projected 2026 Deficit or Surplus (surplus shows as a "-")	2026 Need Determination
Henderson	H0161	Margaret R. Pardee Memorial Hospital	201	0	23,809	1.0223	26,001	71	107	-94	
Henderson Total			**263**	**0**							**0**
Hertford	H0001	Vidant Roanoke-Chowan Hospital	86	0	12,128	-1.0129	12,128	33	50	-36	
Hertford/Gates Total			**86**	**0**							**0**
Hoke	H0288	Cape Fear Valley Hoke Hospital	41	0	5,230	1.0585	6,565	18	27	-14	
Hoke	H0287	FirstHealth Moore Regional Hospital - Hoke Campus**	8	28	1,585	1.0585	1,990	5	8	-28	
Hoke Total			**49**	**28**							**0**
Iredell	H0248	Davis Regional Medical Center**	102	0	0	-1.0205	0	0	0	-102	
Iredell	H0259	Lake Norman Regional Medical Center	115	0	14,113	-1.0205	14,113	39	58	-57	
		Community Health Systems	217	0	14,113		14,113	39	58	-159	
Iredell	H0164	Iredell Memorial Hospital	199	0	33,509	-1.0205	33,509	92	138	-61	
Iredell Total			**416**	**0**							**0**
Jackson	H0087	Harris Regional Hospital**	82	0	12,274	-1.0229	12,274	34	50	-32	
Jackson Total			**82**	**0**							**0**
Johnston		2024 Acute Care Bed Need Determination	0	24		1.0603	0	0	0	-24	
Johnston	H0151	UNC Health Johnston	176	0	43,190	1.0603	54,585	149	209	33	
Johnston Total			**176**	**24**							**9**
Lee	H0243	Central Carolina Hospital**	126	0	12,874	1.0045	13,107	36	54	-72	
Lee Total			**126**	**0**							**0**
Lenoir	H0043	UNC Lenoir Health Care	182	0	21,886	-1.0123	21,886	60	90	-92	
Lenoir Total			**182**	**0**							**0**
Lincoln	H0225	Atrium Health Lincoln	97	0	20,368	1.0114	21,314	58	88	-9	
Lincoln Total			**97**	**0**							**0**
Macon	H0034	Angel Medical Center	30	0	5,937	-1.0379	5,937	16	24	-6	
Macon	H0193	Highlands-Cashiers Hospital	24	0	1,120	-1.0379	1,120	3	5	-19	
Macon Total			**54**	**0**							**0**
Martin	H0078	Martin General Hospital**	49	0	3,775	-1.0301	3,775	10	16	-33	
Martin Total			**49**	**0**							**0**
McDowell	H0097	Mission Hospital McDowell	65	0	7,238	-1.0034	7,238	20	30	-35	
McDowell Total			**65**	**0**							**0**
Mecklenburg		2023 Acute Care Bed Need Determination	0	164		1.0444	0	0	0	-164	
Mecklenburg		2024 Acute Care Bed Need Determination	0	89		1.0444	0	0	0	-89	

Table 5A: Acute Care Bed Need Projections
GRM, 2019-2023

A	B	C	D	E	F	G	H	I	J	K	L
Service Area	License Number	Facility Name	Licensed Acute Care Beds	Adjustments for CONs/ Previous Need	Inpatient Days of Care	Growth Rate Multiplier (GRM)	Projected Days of Care	2026 Projected Average Daily Census (ADC)	2026 Beds Adjusted for Target Occupancy	Projected 2026 Deficit or Surplus (surplus shows as a "-")	2026 Need Determination
Mecklenburg		Atrium Health Lake Norman	0	30		1.0444	0	0	0	-30	
Mecklenburg	H0042	Atrium Health Pineville	268	30	98,775	1.0444	117,503	322	428	130	
Mecklenburg	H0255	Atrium Health University City	95	16	39,427	1.0444	46,903	128	180	69	
Mecklenburg	H0071	Carolinas Medical Center/Center for Mental Health	979	191	345,309	1.0444	410,781	1,125	1,440	270	
		Atrium Health	1,342	267	483,511		575,187	1,575	2,047	438	
Mecklenburg	H0292	Novant Health Ballantyne Medical Center	36	0	886	1.0444	1,054	3	4	-32	
Mecklenburg	H0282	Novant Health Huntersville Medical Center	135	12	31,293	1.0444	37,226	102	143	-4	
Mecklenburg	H0270	Novant Health Matthews Medical Center	146	20	39,903	1.0444	47,469	130	182	16	
Mecklenburg	H0290	Novant Health Mint Hill Medical Center	36	0	7,992	1.0444	9,507	26	39	3	
Mecklenburg	H0010	Novant Health Presbyterian Medical Center**	469	7	129,805	1.0444	154,417	423	541	65	
Mecklenburg		Novant Health Steele Creek Medical Center	0	32		1.0444	0	0	0	-32	
		Novant Health	822	71	209,879		249,673	684	909	16	
Mecklenburg Total			**2,164**	**591**							**201**
Mitchell	H0169	Blue Ridge Regional Hospital**	46	0	4,887	1.0388	5,691	16	23	-23	
Mitchell Total			**46**	**0**							**0**
Montgomery	H0003	FirstHealth Montgomery Memorial Hospital**	37	0	624	1.0595	786	2	3	-34	
Montgomery Total			**37**	**0**							**0**
Moore	H0100	FirstHealth Moore Regional Hospital and Pinehurst Treatment Cntr.	324	47	84,227	-1.0302	84,227	231	307	-64	
Moore Total			**324**	**47**							**0**
Nash	H0228	Nash General Hospital	250	0	48,312	1.0261	53,547	147	205	-45	
Nash Total			**250**	**0**							**0**
New Hanover	H0221	New Hanover Regional Medical Center	633	96	191,643	1.0180	205,851	564	721	-8	
New Hanover Total			**633**	**96**							**0**
Onslow	H0048	Onslow Memorial Hospital	144	0	29,127	1.0115	30,496	83	125	-19	
Onslow Total			**144**	**0**							**0**
Orange		2024 Acute Care Bed Need Determination	0	26		1.0093	0	0	0	-26	
Orange	H0157	University of North Carolina Hospitals	785	74	239,535	1.0093	248,528	680	871	12	
Orange Total			**785**	**100**							**0**
Pasquotank	H0054	Sentara Albemarle Medical Center	182	0	22,212	1.0448	26,471	72	109	-73	
Pasquotank/Camden/Currituck/Perquimans Total			**182**	**0**							**0**
Pender	H0115	Pender Memorial Hospital**	43	0	4,750	1.4478	20,872	57	86	43	

Table 5A: Acute Care Bed Need Projections
GRM, 2019-2023

A	B	C	D	E	F	G	H	I	J	K	L
Service Area	License Number	Facility Name	Licensed Acute Care Beds	Adjustments for CONs/ Previous Need	Inpatient Days of Care	Growth Rate Multiplier (GRM)	Projected Days of Care	2026 Projected Average Daily Census (ADC)	2026 Beds Adjusted for Target Occupancy	Projected 2026 Deficit or Surplus (surplus shows as a "-")	2026 Need Determination
Pender Total			**43**	**0**							**43**
Person	H0066	Person Memorial Hospital	38	0	2,631	-1.0652	2,631	7	11	-27	
Person Total			**38**	**0**							**0**
Pitt	H0104	ECU Health Medical Center**	776	85	218,237	-1.0111	218,237	598	765	-96	
Pitt/Greene/Hyde/Tyrrell Total			**776**	**85**							**0**
Polk	H0079	St. Luke's Hospital	25	0	2,412	-1.1168	2,412	7	10	-15	
Polk Total			**25**	**0**							**0**
Randolph	H0013	Randolph Hospital	145	0	18,233	1.0675	23,680	65	97	-48	
Randolph Total			**145**	**0**							**0**
Richmond	H0158	FirstHealth Moore Regional Hospital - Richmond**	99	0	6,509	-1.0772	6,509	18	27	-72	
Richmond Total			**99**	**0**							**0**
Robeson	H0064	Southeastern Regional Medical Center	285	0	37,953	-1.0538	37,953	104	145	-140	
Robeson Total			**285**	**0**							**0**
Rockingham	H0023	Annie Penn Hospital**	110	0	12,890	-1.0263	12,890	35	53	-57	
Rockingham	H0072	UNC Rockingham Hospital	108	0	6,827	-1.0263	6,827	19	28	-80	
Rockingham Total			**218**	**0**							**0**
Rowan	H0040	Novant Health Rowan Medical Center	198	0	38,963	1.0356	44,813	123	172	-26	
Rowan Total			**198**	**0**							**0**
Rutherford	H0039	Rutherford Regional Medical Center	129	0	10,177	-1.0413	10,177	28	42	-87	
Rutherford Total			**129**	**0**							**0**
Sampson	H0067	Sampson Regional Medical Center	116	0	8,176	-1.0160	8,176	22	34	-82	
Sampson Total			**116**	**0**							**0**
Scotland		2024 Acute Care Bed Need Determination	0	26		1.0662	0	0	0	-26	
Scotland	H0107	Scotland Memorial Hospital	92	0	23,870	1.0662	30,852	84	127	35	
Scotland Total			**92**	**26**							**9**
Stanly	H0008	Atrium Health Stanly	97	0	15,092	1.0634	19,299	53	79	-18	
Stanly Total			**97**	**0**							**0**
Stokes	H0165	LifeBrite Community Hospital of Stokes**	53	0	1,549	1.2672	3,995	11	16	-37	
Stokes Total			**53**	**0**							**0**
Surry	H0049	Hugh Chatham Memorial Hospital	81	0	9,968	1.0039	10,124	28	42	-39	
Surry	H0184	Northern Regional Hospital*	100	-17	15,305	1.0039	15,544	43	64	-19	
Surry Total			**181**	**-17**							**0**

Table 5A: Acute Care Bed Need Projections
GRM, 2019-2023

A	B	C	D	E	F	G	H	I	J	K	L
Service Area	License Number	Facility Name	Licensed Acute Care Beds	Adjustments for CONs/ Previous Need	Inpatient Days of Care	Growth Rate Multiplier (GRM)	Projected Days of Care	2026 Projected Average Daily Census (ADC)	2026 Beds Adjusted for Target Occupancy	Projected 2026 Deficit or Surplus (surplus shows as a "-")	2026 Need Determination
Swain	H0069	Swain Community Hospital	48	0	120	-1.2932	120	0	0	-48	
Swain Total			**48**	**0**							**0**
Transylvania	H0111	Transylvania Regional Hospital	42	0	5,709	1.0132	6,017	16	25	-17	
Transylvania Total			**42**	**0**							**0**
Union		2023 Acute Care Bed Need Determination	0	21		1.1445	0	0	0	-21	
Union		2024 Acute Care Bed Need Determination	0	46		1.1445	0	0	0	-46	
Union	H0050	Atrium Health Union	178	0	61,017	1.1445	104,700	287	381	203	
Union Total			**178**	**67**							**136**
Vance	H0267-A	Maria Parham Health**	88	0	21,878	1.0711	28,798	79	118	30	
Vance/Warren Total			**88**	**0**							**30**
Wake		2023 Acute Care Bed Need Determination	0	44		1.0501	0	0	0	-44	
Wake		2024 Acute Care Bed Need Determination	0	70		1.0501	0	0	0	-70	
Wake		Duke Green Level Hospital	0	40		1.0501	0	0	0	-40	
Wake	H0238	Duke Raleigh Hospital	186	-22	54,096	1.0501	65,786	180	252	88	
		Duke University Health System	186	18	54,096		65,786	180	252	48	
Wake	H0199	WakeMed	610	-22	178,594	1.0501	217,187	595	761	173	
Wake	H0276	WakeMed Cary Hospital	200	0	61,515	1.0501	74,808	205	272	72	
Wake		WakeMed Garner Hospital	0	31		1.0501	0	0	0	-31	
		WakeMed Health & Hospitals	810	9	240,109		291,995	799	1,034	215	
Wake	H0065	UNC Health Rex	468	18	141,785	1.0501	172,424	472	604	118	
Wake Total			**1,464**	**159**							**267**
Washington	H0006	Washington Regional Medical Center^^^	25	-13	0	-1.2500	0	0	0	-12	
Washington Total			**25**	**-13**							**0**
Watauga	H0077	Watauga Medical Center	113	0	18,261	1.0535	22,496	62	92	-21	
Watauga Total			**113**	**0**							**0**
Wayne	H0257	Wayne UNC Health Care	251	0	47,804	1.0196	51,662	141	198	-53	
Wayne Total			**251**	**0**							**0**
Wilkes	H0153	Wilkes Medical Center	120	0	16,352	1.0923	23,279	64	96	-24	
Wilkes Total			**120**	**0**							**0**
Wilson	H0210	Wilson Medical Center	267	0	24,271	1.0026	24,522	67	101	-166	
Wilson Total			**267**	**0**							**0**
Yadkin	H0155	Yadkin Valley Community Hospital (closed)^	22	0		0.0000	0	0	0	-22	
Yadkin Total			**22**	**0**							**0**

Table 5A: Acute Care Bed Need Projections
GRM, 2019-2023

A	B	C	D	E	F	G	H	I	J	K	L
Service Area	License Number	Facility Name	Licensed Acute Care Beds	Adjustments for CONs/ Previous Need	Inpatient Days of Care	Growth Rate Multiplier (GRM)	Projected Days of Care	2026 Projected Average Daily Census (ADC)	2026 Beds Adjusted for Target Occupancy	Projected 2026 Deficit or Surplus (surplus shows as a "-")	2026 Need Determination
		Grand Total All Hospitals	**20,522**	**1,802**	**4,772,107**		**5,408,541**				**1,078**

* Acute care beds in the "Adjustments for CONs/Previous Need" column are to be converted to inpatient psychiatric beds. This conversion is exempt from certificate of need review, pursuant to G.S. § 131E-184(c).

** HIDI acute inpatient days of care data and the Division of Health Service Regulation Hospital License Renewal Application days of care data have a greater than ± 5% discrepancy between the two data sources.

*** Duke University Hospital is licensed for 14 Level IV neonatal beds under Policy AC-3. The 14 beds are not counted when determining acute care bed need.

^ Yadkin Valley Community Hospital has received a CON exemption to reopen no later than January 18, 2025.

^^ Charles A. Cannon, Jr. Memorial Hospital received a grant from the Dorothea Dix Hospital Property Fund to convert 27 acute care beds to adult psychiatric beds. This project is exempt from certificate of need review. Seventeen acute care beds have been converted to adult psychiatric beds, and these beds are accounted for in Table 5A.

^^^ Washington Regional Medical Center was unable to report their 2023 acute bed days of care to HIDI. Therefore, the need methodology calculation uses the days of care reported on the facility's 2024 LRA.

Note: The decimal part of a number resulting from a calculation is not displayed, but it is used in subsequent calculations. Therefore, calculated totals may not be identical to displayed totals.

Attachment B

Information Related to the IJ Deficiencies for UNC Medical Center

Department of Health & Human Services
Centers for Medicare & Medicaid Services
61 Forsyth Street, SW, Suite 4T20
Atlanta, Georgia 30303-8909

CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES

Ref: University of North Carolina Hospital CCN: 34-0061

IMPORTANT NOTICE – PLEASE READ CAREFULLY
SENT VIA INTERNET EMAIL TO
Elizabeth.runyon@unchealth.unc.edu
(Receipt of this notice is presumed to be June 30, 2022 – date notice e-mailed)

June 30, 2022

Janet Hadar, President
University of North Carolina Hospital
101 Manning Drive
Chapel Hill, NC 27514

Dear Ms. Hadar:

Institutions accredited as hospitals by the Joint Commission (JC) are deemed to meet all of the Medicare Conditions of Participation for hospitals, with the exception of utilization review. Section 1864 of the Social Security Act authorizes the Secretary of Health and Human Services to conduct surveys of accredited hospitals participating in the Medicare program if there are "substantial allegations" indicating serious deficiencies that could potentially affect the health and safety of patients.

[redacted]

facility does not meet the following Conditions of Participation:

42 CFR 482.12	Governing Body
42 CFR 482.13	Patient's Rights
42 CFR 482.21	Quality Assessment and Performance Improvement
42 CFR 482.42	Infection Control

When a hospital is found to be out of compliance with one or more Conditions of Participation, and immediate or serious threat to patient health and safety exists, a determination must be made that the facility no longer meets the requirements for participation as a provider of services in the Medicare program. If the hospital is found to have significant deficiencies and therefore fails to comply with the Conditions of Participation, we are required to keep the hospital under State Agency monitoring until there is full compliance with all of the Medicare Conditions of Participation. Such a determination has been made in the case of University of North Carolina

CCN	Facility_Name	Provider_Subty	Street_Address	City	State	ZIP	Region	Event_ID	Survey_Date	Deficiency_Tag	Deficiency_Description	Deficiency_Text
340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ12	7/21/2022	A0043	GOVERNING BODY	33790 Based on review of hospital policies and procedures, medical records review, facility document review, video surveillance review and staff interviews the hospital's governing body failed to have systems in place to ensure effective supervision and oversight of nursing services for safe care. The findings included: 1. The hospital failed to supervise and evaluate care by failing to implement post fall procedures for 2 of 4 patients reviewed who fell in the facility. (Patients #2, #5) ~cross refer to 482.23 Nursing Services Standard 0395
340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ12	7/21/2022	A0385	NURSING SERVICES	33790 Based on review of hospital policies and procedures, medical record reviews, facility document and video surveillance reviews, and staff interviews, the hospital failed to have an effective nursing service providing oversight of day to day operations for safe nursing care by failing to ensure implementation of post fall procedures for 2 of 4 post fall patients reviewed (Patients #2, #5). The findings include: Hospital nursing staff failed to supervise and evaluate care by failing to implement post fall procedures for 2 of 4 patients reviewed who fell in the facility. (Patients #2, #5) ~cross refer to 482.23(b)(3) Nursing Standard: Tag A0395
340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ12	7/21/2022	A0395	RN SUPERVISION OF NURSING CARE	40194 43644 Based on facility policy review, medical record review, facility falls log review, video footage review, and staff interview, the facility staff failed to follow the facility policy for post fall procedures in 2 of 4 patients with a fall reviewed (Patient #2, #5). The findings include: Review of the facility policy, Fall Prevention, effective 06/11/2022, revealed, " ... B. Post-Fall Procedure for Inpatient Units and Emergency Services ... 1. Immediately after discovery of a patient fall ... a. Assess the patient and provide immediate supportive action. b. Notify the Covering Medical Provider. c. Gather the care team at the patient's bedside, including the patient and family as appropriate. d. Conduct a Post Fall Huddle. e. Ensure that the patient's emergency contact is notified of the fall. 2. Required post-fall documentation by location of fall. - Falls that occur on the nursing unit: Document the fall in the electronic medical record, using the "Post Fall Assessment" flowsheet. The entire column should be completed ... 3. 24-hour post fall assessment ... The primary RN caring for the patient 24 hours post-fall should assess the patient and document findings using the "Post Fall 24-hr Assessment" field in the "Post Fall Assessment" flowsheet in the electronic medical record. This field must be completed within 24 hours of the fall ..." 1. Open medical record review of Patient #5 revealed an 86-year-old female who presented to the emergency department (ED) on 06/24/2022 at 2125 with a chief complaint of fall. Review of the ED Provider Note dated 06/25/2022 at 0250 revealed, " ...past medical history of dementia, bipolar, recurrent falls, hypertension, atrial fibrillation who presents ED today for evaluation after a fall at (named facility). Patient reports that she pushed herself out of bed in an effort to kill her self. She denies any pain at this time ..." Record review revealed Patient #5 was medically cleared and moved to the Psychiatric ED on 06/25/2022 at 1128. Review of Nursing Notes dated 07/16/2022 at 2150 by RN#3 revealed, "Pt (patient) experienced a witnessed, unassisted fall in hallway just outside of room. Pt was attempting to stand from seated position but instead slid down from seat if (sic) chair to floor. Episode was witnessed by this RN. Pt then assisted back onto feet and ambulated with rolling walker and contact guard from this RN and a second RN into bed. Pt assessed for injury with no

340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ11	6/17/2022	A0043	GOVERNING BODY

33790

Based on review of hospital policies and procedures, observations, facility documents, medical record reviews and staff and physician interviews, the hospital's governing body failed to provide oversight and have systems in place to ensure the protection and promotion of patient's rights to provide a safe environment in the Emergency Department, failed to have an effective Quality Assessment and Performance Improvement program for analyzing adverse events, implementing improvement actions and monitoring actions for success, and failed to have an effective Infection Control program for oversight of infection prevention and control processes.

The findings included:

1. The hospital failed to promote and protect a patient's rights by failing to provide a safe environment for an Emergency Department patient.

~cross refer to 482.13 Patient Rights' Standard: 0144

2. The hospital staff failed to have an effective Quality Assessment and Performance Improvement program for patient safety.

~cross refer to 482.21 QAPI Standard: 0286

3. The hospital staff failed to provide an effective Infection Control program by failing to provide oversight of infection prevention and control processes.

~cross refer to 482.42 Infection Control Standard: 0750

~cross refer to 482.42 Infection Control Standard: 0792

340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ11	6/17/2022	A0115	PATIENT RIGHTS

33790

Based on policy and procedure review, medical record review, and staff and physician interviews, the hospital failed to promote and protect a patient's rights by failing to provide a safe environment to Emergency Department patients.

The findings included:

1. The hospital failed to provide care in a safe environment by failing to communicate, escalate and resolve issues while a patient was in the ED.

~cross refer to 482.13 Patient Rights' Standard: Tag 0144

2. The hospital staff failed to provide the discharge Important Message from Medicare.

~cross refer to 482.13 Patient Rights' Standard: Tag 0117

3. The hospital staff failed to notify a patient's family of the use of a chemical restraint to manage the patient's behaviors.

~cross refer to 482.13 Patient Rights' Standard: Tag 0131

4. The hospital staff failed to obtain a new order for a restraint, failed to assess a patient in restraints, and failed to document discontinuation of a restraint.

~cross refer to 482.13 Patient Rights' Standard: Tag 0167

340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ11	6/17/2022	A0117	PATIENT RIGHTS: NOTICE OF RIGHTS	33790 Based on policy review, medical record review and staff interviews, hospital staff failed to provide the discharge Important Message from Medicare in 2 of 3 Medicare inpatient records reviewed. (Pts #4, #8) The findings include: Review of a policy titled "Important Message from Medicare" (IMFM), effective 03/2019, revealed "...The purpose of this policy is to ensure the Important Message from Medicare is provided to all Medicare beneficiaries as required by the final rule made by CMS (Centers for Medicare and Medicaid Services)....Procedure....3. No more than two calendar days prior to discharge - but not less than 4 hours prior to discharge, Care Management prints a copy of the IMFM with the patient's electronic signature and gives the copy to the patient. ..." Policy review did not reveal the documentation to be placed in the medical record. Medical record review on 06/07-08/2022 revealed Patient #8, an 88 year-old, was admitted to the hospital's Campus B on 03/20/2022 with encephalopathy (damage or disease that affects the brain), a urinary tract infection, and MSSA (Methicillin-susceptible Staphylococcus Aureus) bacteremia (bacteria in the blood). Medical record review revealed on 03/26/2022 Patient #8 was discharged to a long-term care facility. Record review failed to reveal evidence Patient #8, or a patient representative was presented with the Important Message from Medicare prior to discharge from the facility. Interview with Utilization Manager #41, for both hospital campuses, on 06/09/2022 at 1040, revealed the IMFM discharge process was for the Utilization Management nurse to give the document to the patient or to the appropriate representative/family if the patient was unable to understand. Interview revealed the nurse should sign that the IMFM was given, but in this case, nothing was signed. The Manager stated Campus B leadership had also backtracked with staff and there was no evidence the IMFM was given prior to discharge. Interview revealed policy was not followed.
340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ11	6/17/2022	A0131	PATIENT RIGHTS: INFORMED CONSENT	40677 40677 Based on review of policy, medical record reviews and staff interview, the facility staff failed to notify a patient's family of the use of Haldol to manage the patient's behaviors in 1 of 2 chemical restraints records reviewed (Patient #3). The findings include: Review on 06/07/2022 of the facility policy titled "Restraint and Seclusion Use" effective January 2021 revealed "...A. Definitions 1. Restraint A restraint is:...2) a drug or medication when it is used as a restriction to manage the patient's behavior or restrict the patient's freedom of movement and is not a standard treatment...for the patient's condition...IV. Procedure B. Patient/Family Education When practical, efforts should be made to discuss the issue of restraint...with the patient and the family at the time of its use..." Review on 06/07/2022 of a closed medical record revealed Patient #3 was a 74-year-old male admitted to the hospital on 06/03/2021 for management of a pericardial effusion (excess fluid in sac around the heart). Medical record review revealed Patient #3 had a history of atrial fibrillation (irregular heartbeat that causes low blood flow), colon adenocarcinoma (colon cancer) and chronic pericardial effusion. Review of a physician's "Medicine Transfer Note" signed by MD #31 on 06/04/2021 at 1709 revealed "...Assessment/Plan...AMS (altered mental status)/Anxiety From patient and wife report, seems to be waxing and waning. Seems to happen more often at night and when wife is not around to orient..." Review of a progress note signed by Registered Nurse #29 on 06/05/2021 at 0149 revealed "Around 2230, pt woke up and started pulling off his EKG (electrocardiogram) leads, BP (blood pressure) cuff, SPO2 (oxygen saturation), NGT (nasogastric tube) and condom cath. Pt now confused, agitated and impulsive. Provider notified and ordered Haldol (antipsychotic medication). Pt slept for about 20 mins then woke up and kept trying to pull off EKG leads and get out of bed. Provider notified and ordered a larger dose of Haldol. Pt slept for about 45-60 mins, then woke up again agitated and confused and wanted to go outside. Staff remains with pt at bedside and re-orients pt, but pt remains confused and agitated..." Medical record review failed to reveal evidence Patient #3's wife was notified or consented to the use of Haldol to manage Patient #3's behaviors. Medical record review revealed Patient #3 expired 06/07/2021 at 0445. An interview was requested with Registered Nurse #29 who was not available for interview.

340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ11	6/17/2022	A0144	PATIENT RIGHTS: CARE IN SAFE SETTING

40194

Based on medical record review, EMS run report review, root-cause analysis, staff meeting review, morbidity and mortality review, internal document review, staff and physician interviews, the hospital staff failed to maintain a safe environment for patients in the Emergency Department (ED) by failing to communicate, escalate and resolve issues while a patient was in the ED for 1 of 2 post-discharge suicides on hospital property (Patient #11).

The findings include:

Review of the medical record revealed Patient #11 was a 29-year-old male who presented to the emergency department (ED) via air ambulance on 04/21/2022 at 1331 following a motor vehicle crash (MVC). Patient #11 was the unrestrained driver who had a frontal collision with a tree at high speed, positive LOC (loss of consciousness), and airbag deployment. Patient #11 had a history of ADHD (attention-deficit/hyperactivity disorder-chronic condition including attention difficulty, hyperactivity, and impulsiveness). Patient #11's chief complaint was back and abdominal pain. Review revealed at 1331 Patient #11 had a GCS (Glasgow coma scale-scoring system used to describe the level of consciousness, 15 is considered normal) of 14 due to confusion. Review revealed at 1333 Patient #11's "Columbia Suicide Severity Rating Scale-Initial" (suicidal and homicidal scale intended to help establish a person's immediate risk of suicide) was "unable to assess." Review of MD (medical doctor) #17 progress note dated 04/21/2022 at 1531 revealed "Received signout from previous resident (named). Briefly, this is a 29 y.o. male who presented as a yellow trauma after MVC versus tree. Patient with no obvious trauma and CT (cat scan) unremarkable. At time of signout CT head is pending. Patient disposition pending trauma recommendations. Patient with concussive symptoms so we will plan for referral to (named) concussion clinic if discharged. 5:18 PM: I spoke with trauma surgery. Patient has been cleared from their perspective. 6:30 PM: I went to reassess patient and he is lucid. He knows his name, date, and place. He remembers that he was in a car accident. He is responding to questions appropriately. He is requesting food and water as he is hungry and thirsty. Given nature of injury and initial confusion, will refer patient to (named) concussion clinic for follow-up. Provided him with concussion precautions. Patient did state to me that he has been hearing voices for the last 2 days but attributes this to his ADHD medication. I asked him if he had any thoughts of harming self, killing himself, or harming anyone else. Patient denies SI (suicidal ideation) or HI (homicidal ideation). Asked him if he has a psychiatrist or therapist and he said that he does not at this time. However, he does have a PCP (primary care provider). instructed him that he should discuss this with his PCP and will likely need psychiatry referral as an outpatient. Patient states that his family lives in (named state) and he has no one to pick him up right now. Will consult case management to assist with a ride ...Strict return precautions reviewed."

340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ11	6/17/2022	A0167	PATIENT RIGHTS: RESTRAINT OR SECLUSION

40677

Based on facility policy, medical record review and staff interview, the facility staff failed to obtain a new order for a restraint, failed to assess a patient in restraints, and failed to document discontinuation of a restraint for 1 of 1 violent restraint record reviewed (Patient #26).

The findings include:

Review of the facility policy titled "Restraint and Seclusion Use" effective 09/2021 revealed "...D. Practice...Any time you add or reduce any restraint, you must obtain a new order...If the nurse decides not to reapply the restraint for a particular limb after care provision, while maintaining the other restraints, a new order must be obtained reflecting the reduction in restraints...2. Restraints for Patients with Violent Behavior o. The restrained patient will be monitored by a Qualified Staff Member for at least the following six parameters of care at intervals not to exceed two hours and the results will be documented on the Violent Restraint flow sheet in the patient's medical record: response to restraint (e.g., level of distress and agitation, mental status, cognitive functioning); circulation and skin integrity; need for nutrition and fluids; toileting; repositioning; and range of motion exercises to restrained extremities...E. Documentation The RN will document...5. the time of restraint discontinuation, including observations leading to this intervention, the patient's response to discontinuation..."

Review on 06/09/2022 of a closed medical record revealed Patient #26 was a 35-year-old female that presented to the hospital's emergency department on 04/22/2022 at 0102 with a complaint of left knee pain. Medical record review revealed Patient #26 had a history of Schizophrenia (mental health disorder causes abnormal interpretation of reality). Medical record review revealed during triage Patient #26 endorsed passive suicide ideation (thoughts of suicide). Medical record review revealed on 04/22/2022 at 1030, the facility staff placed Patient #26's left and right wrists and left and right ankles in "4 Point Synthetic/Velcro Restraints." Medical record review revealed at 1046 an emergency room physician ordered 4-point violent restraints continuous times four hours due to Patient #26's imminent risk of harm to self or others.

Medical record review revealed at 1127 Registered Nurse #28 released Patient #26's right wrist and left ankle from the restraints. Medical record review failed to reveal evidence of a new order for the limbs (left wrist and right ankle) remaining in restraints.

340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ11	6/17/2022	A0263	QAPI

33790

Based on reviews of policies and procedures, medical records, root cause analyses, other hospital documents and staff and physician interviews the hospital failed to maintain an effective on-going Quality Assessment and Performance Improvement program for patient safety.

The findings include:

The hospital failed to provide timely Root Cause Analyses (RCAs) which included implementation of actions and follow-up monitoring for 2 of 3 RCAs reviewed (Pts #11, 12)

~cross refer to 482.21 QAPI Standard: Tag 0286

340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ11	6/17/2022	A0286	PATIENT SAFETY

40194

Based on policy and procedure review, medical record reviews, root cause analysis review and staff interviews hospital staff failed to implement and monitor measures identified from adverse events for two of three root cause analyses reviewed (#11, 12)

The findings included:

Review of the "Sentinel Events" policy, effective 01/2022, revealed " ...(Hospital Name) is committed to designing processes that protect patients and staff from systems failures and human error ....3. A sentinel event is also one of the following ....Suicide of any individual receiving care, treatment or services in a staffed around-the-clock care setting or within 72 hours of discharge ....Any elopement of a patient from a staffed around-the-clock care setting (including the ED) leading to death, permanent harm, or severe temporary harm ...,A root cause analysis will be completed and follow-up action plans will be developed within 45 days of the occurrence. ..." Review did not reveal the policy specified timing of action plan implementation.

1. Review of the medical record revealed Patient #11 was a 29-year-old male who presented to the emergency department (ED) via air ambulance on 04/21/2022 at 1331 following a motor vehicle crash (MVC). Patient #11 was the unrestrained driver who had a frontal collision with a tree at high speed, positive LOC (loss of consciousness), and airbag deployment. Patient #11 had a history of ADHD (attention-deficit/hyperactivity disorder-chronic condition including attention difficulty, hyperactivity, and impulsiveness). Review revealed at 1331 Patient #11 had a GCS (Glasgow coma scale-scoring system used to describe the level of consciousness, 15 is considered normal) of 14 due to confusion. ....5:18 PM: I spoke with trauma surgery. Patient has been cleared from their perspective. 6:30 PM: I went to reassess patient and he is lucid. He knows his name, date, and place. He remembers that he was in a car accident. He is responding to questions appropriately ...Patient did state to me that he has been hearing voices for the last 2 days but attributes this to his ADHD medication. I asked him if he had any thoughts of harming self, killing himself, or harming anyone else. Patient denies SI (suicidal ideation) or HI (homicidal ideation). Asked him if he has a psychiatrist or therapist and he said that he does not at this time. However, he does have a PCP (primary care provider). instructed him that he should discuss this with his PCP and will likely need psychiatry referral as an outpatient. Patient states that his family lives in (named state) and he has no one to pick him up right now. Will consult case management to assist with a ride ...Strict return precautions reviewed." Review of the "Columbia Suicide Severity Rating Scale-Initial" at 1818 revealed Patient #11 denied SI or HI

340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ11	6/17/2022	A0395	RN SUPERVISION OF NURSING CARE	40194 Based on policy and procedure review, medical record review, and staff interviews, the nursing staff failed to supervise and evaluate patient care by failing to ensure patient reassessments were completed per hospital policy for 2 of 4 ED (emergency department) elopement patients (Patient #12 & Patient #30) Findings included: Review of the policy and procedure titled "Triage in the Emergency Department" effective 11/2020 revealed " ...III. Policy Triage is the process of collecting pertinent information about patients who are seeking emergency care and initiating a decision-making procedure using a triage acuity designation system. Triage is considered to be a type of nursing assessment and may occur in any area of the Emergency Department ...D. Reassessment of patients 1. In the case where a treatment bed is not immediately available, patients waiting on a treatment bed will be reassessed every 2 hours, regardless of the patient's ESI level (emergency severity index-five level ED triage algorithm that provides clinically relevant stratification of patients into five groups from 1 [most urgent] to 5 [least urgent] on the basis of acuity and resource needs). More frequent reassessments may be performed based on nursing judgement. 2. Reassessments will include a full set of vital signs and a reassessment of the patient's ESI level ..." 1. Review of the medical record revealed Patient #12 was an 85-year-old male who presented to the emergency department (ED) via ambulance on 04/12/2022 at 1508 following a fall at his residence. Review revealed Patient #12's triage started at 1509 by CN (charge nurse) #34. At 1509 Patient #12's acuity level was a ESI 3. Review of the ED timeline revealed Patient #12's allergies, home medications, and medical history were documented as reviewed by CN #34 at 1509. Review revealed CN #34 performed a "ED Falls Assessment" on Patient #12 at 1509 in which he was determined to be a falls risk. Further review of the "ED Falls Assessment" at 1509 revealed "Falls precautions taken: Fall arm band applied; Placed near nursing station." Review of the ED triage note entered by CN #34 on 04/12/2022 at 1510 revealed "Pt (patient) had witnessed fall. Pt denies LOC (loss of consciousness) and is not on thinners (blood thinners)." Review of the ED triage note entered by RN #35 (triage nurse) on 04/12/2022 at 1515 revealed "Pt presents to ED via EMS (emergency medical services) with unwitnessed fall at SNF (skilled nursing facility). Pt c/o (complains of) pain to R (right) side of forehead that has small laceration. Denies any other injuries. Denies LOC. Not on blood thinners." Review revealed RN #35 performed "Focused Assessment" at 1515 of Patient #12's "Airway, Breathing, Circulation, and Disability" all of which were "Within Defined Limits." At 1516 Patient #12's vital signs were as follows BP (blood pressure)-151/64, HR (heart
340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ11	6/17/2022	A0747	INFECTION PREVENTION CONTROL ABX STEWARDSHIP	33790 Based on policy and procedure reviews, observations, hospital document reviews, and staff and physician interviews the hospital failed to provide an effective infection prevention and control program for oversight of infection prevention and control processes. The findings include: 1. The hospital failed to ensure processes to mitigate the spread of COVID-19 by eliminating separate waiting areas and social distancing in the Emergency Department waiting rooms without securing Infection Control and Hospital Leadership approval and failed to prevent the risk for infection by hospital staff failing to wear personal protective equipment to cover facial hair in the operating room and central sterile processing areas. ~cross refer to 482.42 IC Standard: Tag 0750 2. The hospital failed to track and verify COVID-19 vaccination status of all persons in the hospital identified as Healthcare Personnel. ~cross refer to 482.42 IC Standard: Tag 0792

340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ11	6/17/2022	A0750	INFECTION CONTROL SURVEILLANCE, PREVENTION

40299

Based on review of policy and procedures, Centers for Disease Control and Prevention (CDC) documents provided by the hospital, observation, and staff interviews, the hospital failed to have a process in place to separate COVID-19 positive and COVID-19 symptomatic patients from patients without COVID-19 in the hospital emergency department (ED) waiting rooms for 2 of 2 ED waiting rooms and failed to prevent the risk for infection by hospital staff with facial hair failing to wear personal protective equipment (PPE) to cover the facial hair in the operating room and central sterile processing areas for 3 of 4 staff with facial hair observed.

The findings include:

A. Review of the COVID 19 Workflow - Isolation Precautions for COVID Positive and COVID PUI (patient under investigation) Patients revised 02/2022 revealed the policy did not reveal specific guidelines related to patients in the ED waiting rooms.

Review of the Centers for Disease Control and Prevention (CDC) document titled "COVID-19 Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic dated 02/02/2022 revealed "... Source control and physical distancing (when physical distancing is feasible and will not interfere with provision of care) are recommended for everyone in a healthcare setting. This is particularly important for individuals, regardless of their vaccination status, who live or work in counties with substantial to high community transmission or who have: ... Have suspected or confirmed SARS-COV-2 infection or other respiratory infection (e.g., those with runny nose, cough, sneeze); ... Encourage Physical Distancing; In situations when patients are not up to date with all recommended COVID-19 vaccine doses could be in the same space (e.g., waiting rooms, cafeterias, dialysis treatment room), arrange seating so that patients can sit at least 6 feet apart, especially in counties with substantial or high transmission."

Review of the CDC COVID Data Tracker (not dated) provided on 06/10/2022 revealed an image of the state of North Carolina divided by counties. Review revealed the image was of the Community Transmission levels for all the counties in North Carolina and all counties were colored red. The key under the image identified red as high community transmission level.

340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	E0HJ11	6/17/2022	A0792	COVID-19 Vaccination of Facility Staff

40299

Based on review of policy and procedures, COVID vaccination percentage for employees, review of COVID Leadership Team minutes, vendor /supplier letter, and staff interview, the hospital failed to have a process in place to verify all healthcare personnel are fully vaccinated for COVID-19 or have an exemption in place for 4 hospital staff members and unknown number of vendors.

The findings include:

A. Review of the hospital policy COVID-19 Immunization of Healthcare Personnel last revised 03/2022 revealed "... Due to the growing spread of coronavirus/COVID-19 in North Carolina, and to ensure we are providing a safe environment for patients, and healthcare personnel, (Health System Name) requires employees, medical staff, students, volunteers, research monitors, and contract workers and vendors who are required to comply with (Health System Name) immunizations policy (collectively, "healthcare personnel" or "HCP") are vaccinated against COVID-19, subject to a small number of exemptions. III. Policy A. COVID-19 Vaccination required A. All HCP must be vaccinated against COVID-19 unless an exemption has been granted pursuant to this policy. This policy applies to all HCP, regardless of whether the employee works remotely or on site at a (Health System Name) facility mention above..."

Review of the COVID-19 Vaccine Compliance Summary (not dated) provided to this surveyor on 06/15/2022 revealed 99.78 % (Health System Name) Employees were compliant with vaccination or having an exemption in place. Review revealed 2.57% (Health System Name) Employees had exemptions and 6 Non-Compliant Employees (no percentage provided).

Review of the (Health System Name) COVID Leadership Team dated 08/19/2021 revealed "Vendor Vaccine Policy:...(Health System Name) won't verify each vendor's compliance, but will reserve right to request/audit records ..."

Review of the Vendor/Supplier letter dated 09/07/2021 revealed "... Please arrange to have your employees and other agents who may or will visit (Health System Name) facilities certify compliance through RepTrax ... Please do not submit vaccination records or exemption request to (Health System Name). Prior to entering (Health System Name) facilities, vendor employees and/or agents will be asked to confirm that they have received a complete COVID-19 vaccine or that they have an approved exemption on file with their employer ..."

340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	Z28I11	6/16/2022	A2400	COMPLIANCE WITH 489.24	40194 Based on policy and procedure review, medical record review, staff and physician interviews the hospital failed to ensure a timely medical screening examination (MSE) was provided within the capability of the hospital's Dedicated Emergency Department (DED) including ancillary services routinely available to the emergency department to determine whether or not an emergency medical condition existed for 2 of 3 DED elopement patients (Patient #22 and Patient #32). The findings include: The hospital failed to ensure a timely medical screening examination (MSE) was provided within the capability of the hospital's Dedicated Emergency Department (DED) including ancillary services routinely available to the emergency department to determine whether or not an emergency medical condition existed for 2 of 2 DED elopement patients (Patient #22 and Patient #32). ~cross refer to 489.24(a), Medical Screening Exam - Tag A2406.
340061	UNC HOSPITALS	Short Term	101 MANNING DRIVE	CHAPEL HILL	NC	27514	04	Z28I11	6/16/2022	A2406	MEDICAL SCREENING EXAM	40194 Based on policy and procedure review, medical record review, and staff and physician interviews the hospital failed to ensure a timely medical screening examination (MSE) was provided within the capability of the hospital's Dedicated Emergency Department (DED) including ancillary services routinely available to the emergency department to determine whether or not an emergency medical condition existed for 2 of 3 elopement patients (Patient #22 and Patient #32). The findings include: Review of the policy and procedure titled "Treatment of Patients with Emergency Medical Conditions (EMTALA)" Effective 04/2019 revealed " ...C. Medical Screening Examination 1. All individuals who are considered to have 'come to (Named Hospital) emergency department' for examination or treatment ...shall be given an appropriate medical screening examination by a qualified medical personnel to determine if an emergency medical condition exists ...Triaging a patient does not constitute a medical screening examination ..." Review of the medical record revealed Patient #22 was an 85-year-old male who presented to the emergency department (ED) via ambulance on 04/12/2022 at 1508 following a fall at his residence. Review revealed Patient #22's triage started at 1509 by CN (charge nurse) #34. Review of the ED triage note entered by CN #34 on 04/12/2022 at 1510 revealed "Pt (patient) had witnessed fall. Pt denies LOC (loss of consciousness) and is not on thinners (blood thinners)." Review of the ED triage note entered by Registered Nurse (RN) #35 (triage nurse) on 04/12/2022 at 1515 revealed "Pt presents to ED via EMS (emergency medical services) with unwitnessed fall at SNF (skilled nursing facility). Pt c/o (complains of) pain to R (right) side of forehead that has small laceration. Denies any other injuries. Denies LOC. Not on blood thinners." Review revealed RN #35 performed "Focused Assessment" at 1515 of Patient #22's "Airway, Breathing, Circulation, and Disability" all of which were "Within Defined Limits." At 1516 Patient #22's vital signs were as follows BP (blood pressure)-151/64, HR (heart rate)-59, Resp (respirations)-18, Sp02 (oxygen saturation)- 95% room air, and T (temperature)-98.2. At 1519 orders were placed by MD (medical doctor) #36 for "Imaging-CT (cat scan) Head Wo (without) Contrast; CT Cervical Spine Wo Contrast." At 1624 MD #37 reviewed Patient #22's History. Review of the ED timeline revealed on 04/12/2022 at 2140 (6 hours and 32 minutes after arrival to the ED) Patient #22's ED disposition was set to "LWBS (left without being seen) after triage." Review failed to reveal an MSE was initiated during Patient #22's time waiting in the ED lobby. Review revealed Patient #22 was transported back to Hospital A DED on 04/13/2022 at 0854 and admitted at 1750.

Attachment C

Association Between Teaching Status and Mortality in US Hospitals Article

JAMA | Original Investigation

Association Between Teaching Status and Mortality in US Hospitals

Laura G. Burke, MD, MPH; Austin B. Frakt, PhD; Dhruv Khullar, MD, MPP; E. John Orav, PhD; Ashish K. Jha, MD, MPH

IMPORTANCE Few studies have analyzed contemporary data on outcomes at US teaching hospitals vs nonteaching hospitals.

OBJECTIVE To examine risk-adjusted outcomes for patients admitted to teaching vs nonteaching hospitals across a broad range of medical and surgical conditions.

DESIGN, SETTING, AND PARTICIPANTS Use of national Medicare data to compare mortality rates in US teaching and nonteaching hospitals for all hospitalizations and for common medical and surgical conditions among Medicare beneficiaries 65 years and older.

EXPOSURES Hospital teaching status: major teaching hospitals (members of the Council of Teaching Hospitals), minor teaching hospitals (other hospitals with medical school affiliation), and nonteaching hospitals (remaining hospitals).

MAIN OUTCOMES AND MEASURES Primary outcome was 30-day mortality rate for all hospitalizations and for 15 common medical and 6 surgical conditions. Secondary outcomes included 30-day mortality stratified by hospital size and 7-day mortality and 90-day mortality for all hospitalizations as well as for individual medical and surgical conditions.

RESULTS The sample consisted of 21 451 824 total hospitalizations at 4483 hospitals, of which 250 (5.6%) were major teaching, 894 (19.9%) were minor teaching, and 3339 (74.3%) were nonteaching hospitals. Unadjusted 30-day mortality was 8.1% at major teaching hospitals, 9.2% at minor teaching hospitals, and 9.6% at nonteaching hospitals, with a 1.5% (95% CI, 1.3%-1.7%; $P < .001$) mortality difference between major teaching hospitals and nonteaching hospitals. After adjusting for patient and hospital characteristics, the same pattern persisted (8.3% mortality at major teaching vs 9.2% at minor teaching and 9.5% at nonteaching), but the difference in mortality between major and nonteaching hospitals was smaller (1.2% [95% CI, 1.0%-1.4%]; $P < .001$). After stratifying by hospital size, 187 large (≥400 beds) major teaching hospitals had lower adjusted overall 30-day mortality relative to 76 large nonteaching hospitals (8.1% vs 9.4%; 1.2% difference [95% CI, 0.9%-1.5%]; $P < .001$). This same pattern of lower overall 30-day mortality at teaching hospitals was observed for medium-sized (100-399 beds) hospitals (8.6% vs 9.3% and 9.4%; 0.8% difference between 61 major and 1207 nonteaching hospitals [95% CI, 0.4%-1.3%]; $P = .003$). Among small (≤99 beds) hospitals, 187 minor teaching hospitals had lower overall 30-day mortality relative to 2056 nonteaching hospitals (9.5% vs 9.9%; 0.4% difference [95% CI, 0.1%-0.7%]; $P = .01$).

CONCLUSIONS AND RELEVANCE Among hospitalizations for US Medicare beneficiaries, major teaching hospital status was associated with lower mortality rates for common conditions compared with nonteaching hospitals. Further study is needed to understand the reasons for these differences.

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Supplemental content

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Promoting value is a central US health policy goal, and to this end, payers and policy makers are increasingly promoting efforts that steer patients away from higher-cost clinicians and hospitals.[1] Academic medical centers (AMCs) are often considered more expensive than community hospitals[2,3] and some insurers have excluded AMCs from their networks in an attempt to control costs,[4] assuming that quality is comparable.

Because evaluating the value of medical care requires consideration of quality as well as cost, understanding whether teaching hospitals provide better care is critical. The seminal studies[5-7] on this topic are 18 to 25 years old, and it is unclear whether those findings persist in the contemporary health care environment. Health care delivery has changed substantially from 2000 to 2017, driven by efforts such as quality improvement initiatives,[8] digitization of the medical record,[9] and changes in resident duty hour requirements.[10,11] Identifying how patient outcomes differ between teaching and nonteaching hospitals in the current era is essential to understanding the value of health care provided at US teaching institutions.

In this study, contemporary national Medicare data were used to answer 3 key questions. First, to what degree do overall outcomes differ in teaching hospitals compared with nonteaching hospitals? Second, are the benefits of receiving care at a teaching hospital, if any, focused on a small number of conditions or are they present more broadly across multiple types of conditions and procedures? Third, are differences present even among large hospitals, where high volume could potentially mitigate any advantage of being a teaching institution?

Key Points

Question Is there a difference in mortality rates at US teaching hospitals compared with other hospitals?

Findings In an observational study of approximately 21 million hospitalizations of Medicare beneficiaries, adjusted 30-day mortality rates were significantly lower at 250 major teaching hospitals compared with 894 minor teaching and 3339 nonteaching hospitals overall (8.3% vs 9.2% and 9.5%) as well as for several individual common medical and surgical conditions.

Meaning Major teaching hospital status was associated with lower mortality rates for common conditions.

Methods

This study was approved by the Office of Human Research Administration at the Harvard T.H. Chan School of Public Health. Informed consent was not obtained, as the data were obtained from previously collected, deidentified administrative data.

Data Source

Hospitalizations were identified from the 100% Medicare inpatient file for years 2012 through 2014. Beneficiary characteristics and death date were obtained from the Medicare Beneficiary Summary file. Medicaid eligibility was determined using the State Buy-In Coverage Count variable. Any beneficiary with at least 1 month of state buy-in (Medicare premium paid by the state) was considered Medicaid eligible. Information on hospital characteristics was obtained from the American Hospital Association (AHA) annual survey and Medicare Impact File. Admissions to non-acute care hospitals, federal hospitals, and those outside of the 50 states and the District of Columbia were excluded. Additionally, admissions to hospitals without corresponding data in the AHA annual survey (2.2% of total) were excluded, as it was not possible to determine the primary predictor of interest, teaching status, for these admissions.

Hospitals

The primary exposure variable of interest was hospital teaching status. Consistent with other research,[12-14] all hospitals were placed into 1 of 3 categories based on their response to the AHA survey: major teaching hospitals (those that are members of the Council of Teaching Hospitals [COTH]), minor teaching hospitals (non-COTH members that had a medical school affiliation reported to the American Medical Association), and nonteaching hospitals (all other institutions). For each hospital, data were obtained on its teaching status, size, geographic region, ownership (for-profit, private nonprofit, or public), rural vs urban location, and presence or absence of a medical and cardiac intensive care unit.

Patients

The study sample included beneficiaries who were 65 years or older and enrolled in the traditional fee-for-service program continuously for the entire year. For each hospitalization, the patient's age, sex, race, Medicaid eligibility, and chronic conditions were obtained. Beneficiary race/ethnicity in the Medicare data were self-reported based on fixed categories.[15] Beneficiary race/ethnicity was included to determine if differences in outcomes between teaching and nonteaching hospitals were associated with potential differences in racial and ethnic composition of their patients. Data for chronic conditions were obtained using software from the Centers for Medicare & Medicaid Services that allows for the creating of Hierarchical Condition Categories based on conditions coded in inpatient claims for that calendar year.

Outcomes

The primary outcome was death at 30 days from the admission date. Thirty-day mortality rates were calculated initially for all eligible hospitalizations and then for hospitalizations for individual medical and surgical conditions. The 15 most common medical causes of hospitalizations (using diagnosis related groups) were chosen, as well as 6 common costly surgical procedures across a variety of surgical specialties that have been previously used in studies of surgical quality.[16,17] For secondary outcomes, 7- and 90-day mortality rates were also calculated for all hospitalizations and for the individual medical and surgical conditions.

Statistical Analyses

After identifying hospitalizations among eligible beneficiaries in 2012-2014, patient and hospital characteristics were examined for each admission by hospital teaching status. Hospitalizations that ended in transfer were attributed to the original

hospital. To illustrate the timing of mortality after hospital admission by teaching status, 3 Kaplan-Meier survival curves (for major teaching, minor teaching, and nonteaching hospitals) were constructed, with censoring of patients still alive at 90 days. Unadjusted overall mortality rates were calculated by specifying a linear regression model (eMethods in the Supplement) with each hospital's overall 30-day mortality rate as the outcome and teaching status as the primary predictor. To account for regionally mediated differences in care, all models included state fixed effects, allowing for the effective comparison of teaching and nonteaching hospitals within the same state. Patient clustering within hospitals was accounted for using generalized estimating equations. To account for differences in patient severity, the model adjusted for principal discharge diagnosis related group weight and the following patient characteristics: age, sex, Medicaid eligibility, and Centers for Medicare & Medicaid Services Hierarchical Condition Categories. The Hierarchical Condition Categories model is used by the Centers for Medicare & Medicaid Services to publicly report hospital performance and for pay-for-performance programs. The final model also incorporated hospital volume, urban vs rural location, and profit status. This model was developed to assess the independent association with teaching status and the degree to which outcomes varied between teaching and nonteaching hospitals when other factors such as size and ownership were held constant.

Unadjusted and 2 adjusted models were also constructed with 30-day mortality rate as the outcome and teaching status as the exposure variable for each of the selected 15 medical conditions and 6 surgical procedures as well as the composite mortality for these selected conditions.

To examine if differences in mortality by teaching status persisted across hospitals of different sizes, the analysis was repeated stratifying by small (≤99 beds), medium (100-399 beds), and large (≥400 beds) hospital size. Given that there were only 2 small major teaching hospitals and 1 was a specialty cancer center, the analysis of small hospitals was limited to minor and nonteaching institutions. Linear regression was performed with 30-day mortality as the outcome and teaching status as the exposure variable with state fixed effects, as well as the patient and hospital characteristics described above.

$P < .05$ (2-sided) was considered statistically significant for the analyses of overall hospitalizations as well as the medical and surgical composite. A Bonferroni correction was applied to adjust the significance threshold to $P < .002$ (2-sided) for the analyses of the 21 individual medical and surgical conditions. Analyses were conducted using SAS version 9.4 (SAS Institute Inc).

Sensitivity Analyses

Evaluation of 7- and 90-Day Mortality

To examine differences in early and longer-term mortality by teaching status, the previously described models were constructed with 7- and 90-day mortality as the outcomes.

Exclusion of Transfer Patients

Outcomes of transferred patients were assigned to the original hospital in the primary analysis, consistent with public reporting of mortality rates as well as other studies using mortality as a quality indicator.[18,19] However, there is some evidence that transferred patients may have higher mortality relative to patients who are not transferred.[20,21] Given that teaching hospitals tend to receive a greater number of transfer patients,[14,22] attributing patients to the original hospital could bias the results against the hospitals in which these more complex episodes tend to originate. Thus, the analysis was repeated after completely excluding transfers.

Method of Adjusting for Comorbidities

To determine if the results were sensitive to the method of classifying patient comorbidities, the main models were repeated using Elixhauser conditions instead of Hierarchical Condition Categories.

Teaching Intensity as a Continuous Variable

To further evaluate the relationship between teaching intensity and outcomes, teaching intensity was examined as a continuous variable using intern/resident to bed ratio. Linear regression models were specified with 7-, 30-, and 90-day mortality as the outcomes, intern/resident to bed ratio as the predictor, and patient age, sex, Elixhauser conditions, Medicaid eligibility, and the same hospital characteristics described above as covariates.

Results

Hospital and Patient Characteristics

The analytic sample consisted of 21 451 824 total hospitalizations at 4483 hospitals (**Table 1**; eTable 1 in the Supplement); 482 799 hospitalizations (2.2%) were excluded because of missing data in the AHA annual survey. Of the 4483 hospitals, 250 (5.6%) were major teaching hospitals and accounted for 16.7% of the admissions in the sample, 894 (19.9%) were minor teaching hospitals and accounted for 33.6% of admissions, and 3339 (74.5%) were nonteaching hospitals and accounted for 49.7% of admissions (Table 1). Patient characteristics for hospitalizations among major teaching, minor teaching, and nonteaching hospitals are presented in Table 1, as are key characteristics of the hospitals within each group.

Mortality and Overall 30-Day Mortality

In the unadjusted analyses of overall 30-day mortality, the mortality rates for major teaching, minor teaching, and nonteaching hospitals were 8.1%, 9.2%, and 9.6%, respectively, with major teaching hospitals having a 1.5% lower mortality (95% CI, 1.3% to 1.7%; $P < .001$) relative to nonteaching hospitals. This pattern persisted after adjusting for patient characteristics (8.0% mortality at major vs 9.1% at minor and 9.7% at nonteaching; 1.7% difference [95% CI, 1.5% to 1.9%] between major teaching and nonteaching hospitals; $P < .001$) (**Table 2**). After accounting for hospital characteristics, major teaching hospitals had lower mortality rates relative to nonteaching hospitals, although the difference was smaller (1.2% difference [95% CI, 1.0% to 1.4%]; $P < .001$). Kaplan-Meier survival curves, presented in the **Figure**, show the trajectory of mortality at major teaching, minor teaching, and nonteaching hospitals.

Table 1. Comparison of Patient and Hospital Characteristics for Hospitalizations by Teaching Status[a]

Characteristic	Major Teaching	Minor Teaching	Nonteaching	Difference (95% CI)[b]
Hospitalizations, No. (%)	3 592 378 (16.7)	7 205 576 (33.6)	10 653 870 (49.7)	
Patient Characteristics, % of Hospitalizations				
Age, mean (SD), y	77.7 (8.4)	78.7 (8.4)	79.1 (8.4)	1.27 (1.26 to 1.28)
Women	54.9	57.2	57.9	3.05 (3.0 to 3.1)
Race/ethnicity				
White	79.5	85.2	87.4	7.93 (7.9 to 8.0)
Black	15.0	9.7	7.9	−7.14 (−7.2 to −7.1)
Hispanic	1.8	1.7	1.8	0.001 (−0.01 to 0.02)
Other	2.3	2.2	2.1	−0.25 (−0.3 to −0.2)
Medicaid eligible	19.3	18.7	22.1	2.78 (2.7 to 2.8)
Comorbidity[c]				
Cancer	5.4	4.2	3.8	1.6 (1.58 to 1.63)
Diabetes	36.6	37.1	37.4	0.81 (0.8 to 0.9)
Renal failure	38.5	38.4	38.0	−0.5 (−0.6 to −0.4)
Liver disease	3.1	2.3	2.2	−0.84 (−0.9 to −0.8)
Mental illness	4.6	4.4	4.3	−0.23 (−0.3 to −0.2)
Hospital Characteristics, No. (%) of Hospitals				
No. of hospitals	250	894	3339	
Size				
Small (≤99 beds)	2 (0.8)	187 (20.9)	2056 (61.6)	60.8 (54.9 to 66.7)
Medium (100-399 beds)	61 (24.4)	522 (58.4)	1207 (36.1)	11.8 (5.6 to 17.9)
Large (≥400 beds)	187 (74.8)	185 (20.7)	76 (2.3)	−72.5 (−75.7 to −69.4)
Region				
Northeast	79 (31.6)	155 (17.3)	319 (9.6)	−22.1 (−26.2 to −17.9)
West	64 (25.6)	323 (36.1)	970 (29.1)	6.7 (1.6 to 11.7)
Midwest	73 (29.2)	265 (29.6)	1373 (41.1)	3.5 (−2.4 to 9.3)
South	34 (13.6)	151 (16.9)	677 (20.3)	11.9 (5.7 to 18.1)
Profit status				
For-profit	9 (3.6)	114 (12.8)	640 (19.2)	15.6 (10.8 to 20.4)
Nonprofit	186 (74.4)	670 (74.9)	1839 (55.1)	−19.3 (−25.5 to −13.1)
Government, nonfederal	55 (22.0)	110 (12.3)	860 (25.8)	3.8 (−1.6 to 9.1)
With medical ICU	237 (94.8)	701 (78.4)	1864 (55.8)	−39.0 (−45.0 to −32.9)
With cardiac ICU	220 (88.0)	414 (46.3)	613 (18.4)	−69.6 (−74.9 to −64.4)

[a] Major teaching hospitals were members of Council of Teaching Hospitals (COTH). Minor teaching hospitals had a medical school but no COTH affiliation. Nonteaching hospitals had neither COTH membership nor medical school affiliation.

[b] Difference between mean value for major teaching subtracted from the mean value for nonteaching.

[c] Comorbidities derived from Hierarchical Condition Categories. Cancer refers to HCC10 (breast, colorectal, prostate, and other cancers and tumors).

Thirty-Day Mortality for Common Medical Admissions

Unadjusted overall 30-day mortality was 11.1% at major teaching hospitals and 11.8% at minor teaching and nonteaching hospitals (0.7% difference [95% CI, 0.4% to 0.9%] between major and nonteaching hospitals; $P < .001$), and this pattern persisted after adjusting for patient and hospital characteristics (Table 2). Major teaching hospitals had lower mortality than nonteaching hospitals for 11 of the 15 individual medical conditions examined (**Table 3**).

Thirty-Day Mortality for Surgical Conditions

For the 6 surgical procedures, unadjusted mortality rates for major teaching, minor teaching, and nonteaching hospitals were 3.0%, 3.7%, and 4.3%, respectively, with a 1.2% difference (95% CI, 1.0% to 1.4%) between major and nonteaching hospitals ($P < .001$). This finding of lower mortality at major teaching hospitals compared with nonteaching hospitals persisted after adjusting for patient and hospital characteristics (Table 2). Major teaching hospitals had lower adjusted mortality rates than nonteaching hospitals for 2 of the 6 major procedures examined (Table 3), with lower mortality for open abdominal aortic aneurysm (AAA) repair (12.2% vs 16.9%; 4.7% difference [98.8% CI, 1.1% to 8.3%]; $P < .001$) and colectomy (7.0% vs 7.8%; 0.8% difference [98.8% CI, 0.2% to 1.5%]; $P < .001$).

Thirty-Day Mortality Stratified by Hospital Size

In the analysis stratified by hospital size, there were significant differences by teaching status across each of the size groups (**Table 4**). Among large hospitals, the overall 30-day mortality rate was 8.1% for 187 major teaching hospitals, 8.9% for 185 minor teaching hospitals, and 9.4% for 76 nonteaching hospitals, with a 1.2% difference (95% CI, 0.9% to 1.5%) between major and nonteaching hospitals ($P < .001$). There was a similar pattern for overall medical 30-day mortality (11.0% vs 11.6% vs 12.0%; 1.0% difference between major and nonteaching hospitals [95% CI, 0.6% to 1.4%]; $P < .001$) and surgical

Table 2. Comparison of Thirty-Day Mortality for Medical and Surgical Conditions, 2012-2014[a]

	30-d Mortality, %				
	Major Teaching	Minor Teaching	Nonteaching	% Difference (95% CI)[b]	*P* Value
All Hospitalizations					
No. of hospitalizations	3 592 378	7 205 576	10 653 870		
Unadjusted mortality[c]	8.1	9.2	9.6	1.5 (1.3-1.7)	<.001
Adjusted for patient characteristics[d]	8.0	9.1	9.7	1.7 (1.5-1.9)	<.001
Adjusted for patient and hospital characteristics[d,e]	8.3	9.2	9.5	1.2 (1.0-1.4)	<.001
Medical Conditions[f]					
No. of hospitalizations	1 481 514	3 503 774	5 634 912		
Unadjusted mortality[c]	11.1	11.8	11.8	0.7 (0.4-0.9)	<.001
Adjusted for patient characteristics[d]	10.7	11.4	12.1	1.4 (1.2-1.7)	<.001
Adjusted for patient and hospital characteristics[d,e]	11.0	11.6	11.9	0.9 (0.6-1.1)	<.001
Surgical Procedures[g]					
No. of hospitalizations	165 823	331 972	411 429		
Unadjusted mortality[c]	3.0	3.7	4.3	1.2 (1.0-1.4)	<.001
Adjusted for patient characteristics[d]	3.0	3.8	4.2	1.2 (1.0-1.4)	<.001
Adjusted for patient and hospital characteristics[d,e]	3.3	3.8	4.0	0.7 (0.9-0.5)	<.001

[a] Thirty-day mortality rate for hospitalizations among Medicare beneficiaries 65 years and older to acute care hospitals in 2012-2014.

[b] Difference in mortality rates by teaching status (mortality for major teaching hospitals subtracted from that of nonteaching hospitals).

[c] Model included state fixed effects and adjusted for correlation of patients at the hospital level.

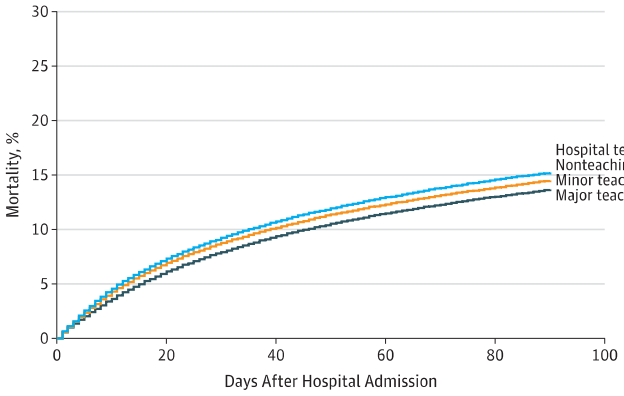
[d] The model further included principal discharge diagnosis related group weight and the following patient characteristics: age, sex, Medicaid eligibility, and Hiearchical Condition Categories.

[e] Hospital characteristics included in the model were profit status, rural/urban location, and volume of hospitalizations.

[f] Medical conditions refers to the aggregated mortality for the 15 most common principal discharge diagnosis related group in the sample as specified in Table 3.

[g] Surgical procedures refers to 6 common, complex procedures (open abdominal aortic aneurysm repair, colectomy, pulmonary lobectomy, coronary artery bypass graft surgry, endovascular abdominal aortic aneurysm repair, and hip replacement).

Figure. Mortality After Hospital Admission Among Major Teaching, Minor Teaching, and Nonteaching Hospitals



No. at risk[a]

Major teaching	71 847	67 585	65 208	63 645	62 539
Minor teaching	143 350	133 743	128 919	125 825	123 592
Nonteaching	212 410	197 342	189 860	185 090	181 594

[a] All hospitalizations to acute care hospitals in 2012-2014 among continuously enrolled traditional Medicare beneficiaries 65 years and older. Major teaching hospitals were defined as those with membership in the Council of Teaching Hospitals (COTH). Minor teaching hospitals had medical school affiliation but no COTH membership. Nonteaching hospitals had neither COTH membership nor medical school affiliation.

30-day mortality (3.2% vs 3.6% vs 3.8%; 0.7% difference between large major and large nonteaching hospitals [95% CI, 0.4% to 0.9%]; $P < .001$). Among medium-sized hospitals, 61 major teaching institutions had lower mortality than 1207 nonteaching hospitals for overall 30-day mortality (8.6% vs 9.4%; 0.8% difference [95% CI, 0.4% to 1.3%]; $P = .003$) and for 30-day surgical mortality (3.6% at major teaching hospitals vs 4.2% at nonteaching hospitals; 0.6% difference [95% CI, 0.2% to 0.9%]; $P = .01$), but there were no differences by teaching status for medical conditions in this size category (Table 4). Among small hospitals, 187 minor teaching hospitals had lower 30-day mortality overall compared with 2056 nonteaching hospitals (9.5% vs 9.9%; 0.4% difference [95% CI, 0.1% to 0.7%]; $P = .01$) and for medical conditions (11.3% vs 11.8%; 0.5% difference [95% CI, 0.1% to 0.9%]; $P = .01$). There was no statistically significant difference in mortality for surgical procedures between small minor teaching hospitals and small nonteaching hospitals.

Table 3. Comparison of 30-Day Mortality for Top 15 Diagnosis Related Groups (DRGs) and 6 Common Surgical Procedures by Teaching Status Adjusting for Patient and Hospital Characteristics, 2012-2014[a]

Condition	No. of Hospitalizations	30-d Mortality, %			% Difference (99.85% CI)[b]	*P* Value[c]
		Major Teaching	Minor Teaching	Nonteaching		
Medical Conditions						
No. of hospitalizations in category		1 481 514	3 503 774	5 634 912		
Respiratory disease	259 970	25.4	27.5	28.4	3.1 (1.7 to 4.4)	<.001
Renal failure	636 095	11.0	12.8	13.6	2.5 (1.9 to 3.1)	<.001
Pneumonia	1 047 303	10.5	11.2	12.0	1.6 (0.9 to 2.2)	<.001
Metabolic disorder	419 988	8.7	9.7	10.2	1.5 (0.9 to 2.0)	<.001
Congestive heart failure	1 280 915	10.5	11.2	11.6	1.2 (0.7 to 1.6)	<.001
Urinary tract infection	672 281	5.3	6.0	6.3	1.0 (0.6 to 1.4)	<.001
Gastrointestinal bleeding	589 180	6.3	7.0	7.2	0.9 (0.5 to 1.3)	<.001
Acute myocardial infarction	517 889	13.2	13.8	14.0	0.9 (0.4 to 1.5)	<.001
Esophageal/gastric disease	758 911	3.8	4.3	4.6	0.9 (0.6 to 1.2)	<.001
Chronic obstructive pulmonary disease	817 127	4.9	5.3	5.7	0.7 (0.3 to 1.1)	<.001
Hip fracture	474 010	7.6	7.9	8.0	0.4 (−0.1 to 0.9)	.03
Arrhythmia	948 513	4.3	4.6	4.7	0.4 (0.1 to 0.6)	<.001
Chest pain	224 894	1.2	1.3	1.4	0.2 (−0.04 to 0.5)	.01
Sepsis	1 348 898	25.5	25.9	25.6	0.1 (−0.9 to 1.1)	.24
Stroke	624 226	18.5	18.5	18.3	−0.2 (−1.0 to −0.6)	.60
Surgical Procedures						
No. of hospitalizations in category		165 823	331 972	411 429		
AAA repair						
Open	7220	12.2	14.9	16.9	4.7 (1.1 to 8.3)	<.001
Endovascular	50 985	2.8	3.3	3.1	0.3 (−0.5 to 1.0)	.09
Colectomy	196 511	7.0	7.3	7.8	0.8 (0.2 to 1.5)	<.001
Pulmonary lobectomy	37 965	2.3	2.8	3.0	0.7 (−0.1 to 1.4)	.03
CABG surgery	127 333	2.5	3.0	3.1	0.5 (−0.1 to 1.2)	.02
Hip replacement	489 210	2.5	2.6	2.7	0.2 (−0.05 to 0.4)	.06

Abbreviations: AAA, abdominal aortic aneurysm; CABG, coronary artery bypass graft.

[a] The model included state fixed effects, principal discharge diagnosis related group weight, patient age, sex, Medicaid eligibility, Hierarchical Condition Categories, hospital profit status, urban/rural location and volume of hospital admissions.

[b] Difference between mortality at nonteaching and major teaching hospitals.

[c] *P* < .002 considered statistically significant.

Sensitivity Analyses

Seven-Day Mortality by Teaching Status

Adjusted 7-day mortality was 3.3% at major teaching hospitals (3.3%), 3.6% at minor teaching hospitals, and 3.6% at nonteaching hospitals, with major teaching hospitals having 0.3% (95% CI, 0.2% to 0.5%; *P* < .001) lower mortality relative to nonteaching hospitals for all hospitalizations (eTable 2 in the Supplement), for the selected 15 medical conditions in aggregate as well as the selected surgical procedures in aggregate (eTable 3 in the Supplement). This pattern of lower mortality at teaching hospitals was observed for 7 of 15 medical conditions and for open AAA repair (eTable 3 in the Supplement). Adjusted 7-day mortality for open AAA repair was lower at major teaching hospitals compared with nonteaching hospitals (7.9% vs 11.6%; 3.7% difference [98.8% CI, 0.6% to 6.8%]; *P* = .002).

Ninety-Day Mortality by Teaching Status

Ninety-day mortality was l3.8% for all hospitalizations at major teaching hospitals, 15.0% at minor teaching hospitals, and 15.5% at nonteaching hospitals. Mortality was lower at major teaching hospitals relative to nonteaching hospitals for hospitalizations overall (1.6% difference [95% CI, 1.3% to 1.9%]; *P* < .001) as well as for the 15 selected medical conditions in aggregate and the 6 selected surgical procedures in aggregate (eTable 4 in the Supplement). This pattern was observed for 13 of 15 medical conditions, with no differences by teaching status for stroke or sepsis (eTable 5 in the Supplement).

Other Sensitivity Analyses

When these analyses were repeated excluding the 454 296 hospitalizations that ended in transfer, major teaching hospitals had lower adjusted mortality relative to nonteaching hospitals at 7, 30, and 90 days for all hospitalizations, for the composite mortality for the 15 selected medical conditions, and for the composite mortality for the 6 surgical procedures (eTable 6 in the Supplement). Using the Elixhauser risk-adjustment approach also demonstrated lower mortality for major teaching hospitals at 7, 30 and 90 days (eTable 7 in the Supplement). In addition, on examining teaching status as a continuous variable (using the intern/resident to bed ratio), every increase of 0.1 in intern/resident to bed ratio was associated with a 0.23%

Table 4. Relationship Between Adjusted 30-Day Mortality and Hospital Teaching Status Stratified by Hospital Size[a]

	Total No. of Hospitalizations	No. of Hospitalizations (30-d Mortality, %)			% Difference (95% CI)[b]	*P* Value
		Major Teaching	Minor Teaching	Nonteaching		
Large hospitals (≥400 beds)						
Overall	7 105 341	3 122 215 (8.1)	2 869 375 (8.9)	1 113 751 (9.4)	1.2 (0.9 to 1.5)	<.001
Medical conditions[c]	3 171 715	1 276 866 (11.0)	1 348 310 (11.6)	546 539 (12.0)	1.0 (0.6 to 1.4)	<.001
Surgical procedures[d]	334 814	144 976 (3.2)	140 154 (3.6)	49 684 (3.8)	0.7 (0.4 to 0.9)	<.001
Medium hospitals (100-399 beds)						
Overall	11 802 681	461 010 (8.6)	4 083 475 (9.3)	7 258 196 (9.4)	0.8 (0.4 to 1.3)	.003
Medical conditions[c]	5 986 284	201 184 (11.3)	2 015 603 (11.8)	3 769 497 (11.8)	0.5 (0.04 to 1.0)	.11
Surgical procedures[d]	496 611	20 614 (3.6)	182 446 (4.0)	293 551 (4.2)	0.6 (0.2 to 0.9)	.01
Small hospitals (≤99 beds)						
Overall	2 543 802		261 879 (9.5)	2 281 923 (9.9)	0.4 (0.1 to 0.7)	.01
Medical conditions[c]	1 462 201		143 325 (11.3)	1 318 876 (11.8)	0.5 (0.1 to 0.9)	.01
Surgical procedures[d]	77 799		9605 (3.5)	68 194 (3.8)	0.3 (−0.1 to 0.7)	.17

[a] The model included principal discharge diagnosis state fixed effects, diagnosis related group weight, patient age, sex, Medicaid eligibility, Hierarchical Condition Categories, hospital profit status, rural/urban local location, and volume of admissions within each size strata.

[b] For large and medium hospitals, difference between mortality at nonteaching and major teaching hospitals. For small hospitals, difference between mortality at nonteaching and minor teaching hospitals.

[c] Aggregated mortality for the 15 common principal discharge Diagnosis Related Groups as specified in Table 3.

[d] Includes 6 common, complex procedures (open abdominal aortic aneurysm repair, colectomy, pulmonary lobectomy, coronary artery bypass graft surgery, endovascular abdominal aortic aneurysm repair, and hip replacement).

decrease in overall 30-day mortality (95% CI, −0.27% to −0.19%; $P < .001$) and a 0.31% decrease in overall 90-day mortality (95% CI, −0.37% to −0.26%; $P < .001$) (eTable 8 in the Supplement). Increasing intern/resident to bed ratio was associated with lower mortality for composite medical and surgical mortality as well as most individual medical conditions at 7, 30, and 90 days. This relationship was observed for most surgical conditions at 30 and 90 days but only for open AAA repair at 7 days (eTable 8 in the Supplement).

Discussion

In this analysis of 21.4 million Medicare discharges during 2012-2014, admission to a major teaching hospital was associated with lower overall 30-day mortality compared with admissions to nonteaching hospital. These differences were observed overall and across a majority of conditions examined and persisted after adjustment for hospital characteristics, including volume. Lower mortality rates among teaching hospitals were present at both 7 days and 90 days and after excluding transfers, using an alternative adjustment model, and measuring teaching intensity as a continuous variable.

It is not clear why teaching status was associated with lower mortality. This difference in outcomes by teaching status may be related to greater experience treating particular conditions, but accounting for hospital volume did not substantially explain the differences. Teaching hospitals also tend to be early adopters of certain technologies,[23] which could yield better outcomes for conditions that are more technologically intensive or require specialized knowledge. However, these results suggest better outcomes for a broad range of conditions, including pneumonia and heart failure, for which advanced technologies are helpful for only a minority of patients. A recent study found that teaching intensity was associated with higher performance on process measures for several conditions, suggesting that superior processes may explain the lower average mortality found at teaching hospitals in the present study.[23] Further understanding of the mechanisms behind this association is important to determine whether these outcomes may be replicated at community hospitals.

These findings may be relevant to the recent changes in the broader health care delivery system. Narrow insurance networks have become more commonplace, and some have excluded teaching hospitals[4] out of concern that they may be high cost. Some policy makers have also tried to steer patients with common conditions away from teaching institutions, citing higher costs without better outcomes.[24] Additionally, all 3 of the national pay-for-performance programs established by the Affordable Care Act (the Value-Based Purchasing Program, Hospital Readmissions Reduction Program, and the Hospital Acquired Conditions Reduction Program) disproportionately penalize teaching hospitals.[25,26] However, the findings of this study suggest that teaching hospitals have better outcomes, calling into question whether the national approach to measuring and rewarding on performance is working effectively.

Several studies in the 1990s and early 2000s found better outcomes at AMCs.[6,7,27] More recent studies on outcomes at AMCs have focused primarily on a small number of conditions[28,29] and often on in-hospital mortality (not accounting for the postdischarge care that can affect patient outcomes).[29-31] Three recent studies that examined 30-day mortality, focusing on acute myocardial infarction, congestive heart failure, and pneumonia,[14,32,33] found lower mortality among teaching institutions. One also found that hospital volume mediated some, but not all, of the benefit of teaching status

for these 3 conditions.[32] However, given the substantial policy attention to these 3 conditions in recent years,[34,35] performance on these conditions may reflect targeted efforts. The present study extends this recent work by examining a broad range of clinical conditions and finds better outcomes at teaching hospitals as compared with nonteaching hospitals.

For 2 medical conditions, sepsis and stroke, outcomes were no better at teaching hospitals compared with nonteaching hospitals. Several studies have found recent changes in coding for sepsis such that patients with pneumonia and systemic signs of infection are far more likely to be coded as having sepsis with respiratory infection than they would have been a decade ago.[36] Whether this occurs more systematically at nonteaching hospitals or for generally healthier patients is unclear, but differential changes in coding could explain why this study did not find lower mortality at academic centers. Some studies have suggested that teaching hospitals tend to code less aggressively and thus may be falsely penalized when administrative data are used for risk-adjusted quality metrics.[37] Undercoding by teaching hospitals would tend to bias against finding lower mortality for AMCs. There is some evidence that teaching hospitals may be disproportionately misclassified as poor performers on stroke mortality using traditional adjustment models that do not adjust for stroke severity,[38,39] although additional research is needed to further evaluate the degree to which types of stroke differ among teaching and nonteaching hospitals.

This study has several limitations. First, this study examined mortality rates for the Medicare fee-for-service population, and thus it was not possible to determine whether these findings are generalizable to nonelderly populations. Second, this study examined only mortality as an indicator of the quality of hospital care. It is not clear if other measures important to patients, such as functional status, differ significantly between teaching and nonteaching hospitals. Third, this study did not account for the patient preferences in end-of-life care. Lower mortality could, in theory, reflect underuse of palliative care for appropriate patients at teaching hospitals. The evidence regarding this idea is mixed, with teaching hospitals both providing more aggressive end-of-life cancer care but also referring to hospice at greater rates.[40] However, even if differences in end-of-life care explained some of the short-term findings, the association would be expected to dissipate by 90 days, which was not the case in this study. Another potential limitation is that the measure of Medicaid eligibility, state buy-in coverage count, may undercount the number of Medicaid-eligible Medicare beneficiaries in some states. Additionally, because of the observational design, the differences in outcomes could represent unmeasured confounding. However, teaching hospitals appear to have higher mean case mix indices compared with nonteaching hospitals, which would bias outcomes data against a finding of lower mortality at teaching hospitals.[23]

Conclusions

Among hospitalizations for US Medicare beneficiaries, major teaching hospital status was associated with lower mortality rates for common conditions compared with nonteaching hospitals. Further research is needed to understand the reasons for these differences.

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Concept and design: Burke, Khullar, Orav, Jha.
Acquisition, analysis, or interpretation of data: Burke, Frakt, Orav, Jha.
Drafting of the manuscript: Burke.
Critical revision of the manuscript for important intellectual content: All authors.
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