

## Memorandum to the Public Health Council

**APPLICANT:** Cape Cod Healthcare, Inc

**At:** Cape Cod Hospital  
27 Park Street  
Hyannis, MA 02601

**PROJECT NUMBER:** Application # CCHC-22021416-HE  
Amendment # CCHC23122109-AM (Significant Change)

**Filing DATE:** February 23, 2024

### Introduction

This memorandum presents for review and action the Determination of Need (“DoN”) Program’s recommendation pertaining to a request by Cape Cod Healthcare, Inc (“Holder”), on behalf of Cape Cod Hospital (“Hospital”, “CCH”), located at 27 Park Street, Hyannis, MA 02601, for a Significant Change to the previously issued Determination of Need (“DoN”) Application # CCHC-22021416-HE. The Holder requests to add 32 licensed medical/surgical beds (“Proposed Change”) through a build out of all approved shell space (24,783 gross square feet) at the Hospital. The capital expenditure associated with the Proposed Change is \$14,666,613.

This request falls within the definition for a Significant Change<sup>1</sup> that includes “(5) Any build-out of shell space that was subject to a Notice of Determination of Need” and will be reviewed pursuant to 105 C.M.R. 100.635(A), as the Proposed Change falls within the scope of the original Notice of Determination of Need and is reasonable.

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<sup>1</sup> Significant Change means:

- (1) Any change, modification, or deletion of components within a previously issued Notice of Determination of Need that is not an Immaterial Change, as determined by the Commissioner;
  - (2) Any increase or decrease in the maximum Capital Expenditure over 10% of the inflation adjusted originally approved total expenditure. An increase shall be allowed only for contingencies that could not have been reasonably foreseen, that are not reasonably within the control of the Holder, as determined by the Commissioner, and for which the inflationary adjustment contained within 105 CMR 100.310(A)(9) is not appropriate;
  - (3) Any request for modification or deletion of any Standard or Other condition set forth within a Notice of Determination of Need that is determined to be material by the Department;
  - (4) Unless otherwise approved by the Department, any extension of the authorization period of an approved project as specified in a Notice of Determination of Need; or
  - (5) Any build-out of shell space that was subject to a Notice of Determination of Need.
- Any change to a project the Commissioner deems to be so significant that it alters the previously issued Notice of Determination of Need to a degree that it constitutes a new project will require the issuance of a new Notice of Determination of Need.

## **Background**

Cape Cod Healthcare includes two acute hospitals – Cape Cod Hospital and Falmouth Hospital with 197 and 71 beds respectively.<sup>2</sup> Cape Cod Hospital is a Community High Public Payer Hospital<sup>3</sup>, the largest provider of inpatient services on Cape Cod, and provides a complement of specialties including interventional cardiology and oncology services. The nearest hospitals to CCH are Falmouth Hospital (22 miles; ~45-minute drive) and Beth Israel Deaconess Plymouth Hospital (35 miles; ~40-minute drive) during non-peak hours. Gaining access to health services from more remote areas such as Provincetown poses challenges, as it is 47.5 miles (~1 hour drive), and Orleans is 21 miles (~30 minute drive) to the Hospital.

The Department approved DoN # CCHC-22021416-HE on July 13, 2022, for the construction of a new four-story facility on the Hospital's main campus to house the following: (1) a relocated and expanded medical oncology department; (2) a relocated radiation oncology department; (3) a relocated inpatient cardiac unit consisting of 32 beds; and (4) shell space for future projects. Construction for the new building began in 2023 and is on schedule for patients to be seen in the Medical Oncology and Radiation Oncology Departments in April 2025. The 3<sup>rd</sup> floor medical/surgical unit is on schedule to open for patient care in March 2026.

## **The Proposed Amendment**

The Holder asserts that additional medical/surgical beds are needed to provide its Patient Panel with timely access to care locally and therefore seeks to add 32 medical/surgical beds, all private rooms, to its license bringing the total licensed capacity at CCH to 229 beds by building out the entirety of previously approved shell space. The Holder asserts that building beds in existing shell space offers a permanent, cost-effective solution to address patient need and alleviate capacity constraints. The Holder asserts that these capacity constraints could not have been foreseen when the when the DoN was submitted in March 2022, therefore these beds were not requested at that time. However, the Holder provides three years of data herein of consistently high occupancy rates and increased ED boarding for Medical/Surgical patients that persist.

As described below, the Holder supports need for the added beds with the following:

- High Occupancy Rates Overall and Seasonal Surges
- Alternate Space Approval that is Time-Limited
- Emergency Room Admissions and ED Boarding
- Address Care Delivery Constraints of The Hospital's Aged Infrastructure
- Address Future Needs of The Growing Aging Population

### ***High Occupancy Rates Overall and Seasonal Surges***

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<sup>2</sup> It also includes the physician practice, Medical Affiliates of Cape Cod, homecare and hospice services (VNA), a skilled nursing and rehabilitation facility, an assisted living facility, six urgent care centers.

<sup>3</sup> <https://www.chiamass.gov/massachusetts-acute-hospital-profiles/>

The Holder reports that in FY2023, the Hospital's medical/surgical occupancy rate was 97%, with an average of 188 of the Hospital's 197 medical/surgical beds occupied. The Hospital attributes the high occupancy rate to the increased need in the community for the treatment of higher acuity conditions. The Holder's case mix index is higher than average (1.00) for its hospital cohort; in FY 21 and FY 22 it was 1.20 and 1.21 respectively.<sup>4</sup>

The Holder asserts that the accepted industry standard for inpatient utilization is 85% occupancy;<sup>i</sup> so that hospitals have capacity to admit patients in a timely manner and maintain operational efficiencies. Once occupancy exceeds 90%, it's more likely the hospital will not have enough beds or staff to place new patients.

The Holder further reports that seasonal population fluctuations create spikes in demand and place a strain on the hospital. At staff request, the Holder provided utilization data by month for FY 21-23. From that data staff amalgamated the data by season into Table 1, below.

Average length of stay (ALOS) over the three- year period ranged from 3.74 in the summer to 4.09 days in the winter. The average 3-year-overall occupancy rate was above the 85% industry standard, at 91%, as was the average occupancy rate for each season. Spring and winter had the two lowest three-year average occupancy rate 86%, and 88% respectively.

Reflecting the summer surge in population on Cape Cod, the 3-year hospital discharges average in the summer season (1,552) is 10.1% greater than the overall 3-year average (1,400). Accordingly, Patient Days, and Average Daily Census during the summer months are also significantly higher than the overall 3-year average and each of the other seasons.

In FY 2023, the Hospital had 100% and over occupancy rate for 4 months, November, February, July and August, and for all other months except for January and March, the occupancy rate exceeded 90%. 100% occupancy is possible through CCH's use of temporary inpatient space, a flexibility provided by the Department, as described below. Therefore, the Holder asserts, to meet the overall high demand as well as the seasonal spikes, CCH needs additional inpatient capacity to provide timely access to inpatient care for year-round residents and summer visitors.

**Table 1: Overall and Seasonal Utilization Data Monthly Averages for FY 2019 and 2021-23**

<b>FY 2021-23 Time Frame^</b>	<b>Med/Surg Discharges/ Month</b>	<b>Med/Surg Patient Days/Month</b>	<b>Med/Surg Average Length of Stay</b>	<b>Med/Surg Average Daily Census</b>	<b>Med/Surg Occupancy- Rate*</b>
<b>FY 2019</b>	1,300	5,390	4.15	177.00	90%

<sup>4</sup> <https://www.chiamass.gov/assets/docs/r/hospital-profiles/2020/cape-cod.pdf>

<b>3-year Average Overall FY 21-23</b>	1,400	5,466	3.92	180.23	91%
<b>Spring</b>	1,353	5,190	3.84	169.31	86%
<b>Summer</b>	1,552	5,801	3.74	191.30	97%
<b>Autumn</b>	1,420+	5,644	3.99	186.32	95%
<b>Winter</b>	1,285	5,234	4.09	174.00	88%
^ Inpatient and observation included in each category					
* Calculated off of Licensed Beds					
+ Includes Fall FY 24					

### ***Alternate Space Approval that is Time-Limited***

In an effort alleviate space constraints, CCH is currently using 14-19 inpatient beds beyond its licensed bed capacity<sup>5</sup> pursuant to the Department of Public Health's memo *Updated Process for Adding of Temporary Beds in Alternate Inpatient Care Space*<sup>6</sup> With the waiver, CCH has been able to avoid calling Code Help in FY2022 and FY2023.

The Holder provides the following explanation as to why using beds under the waiver presents challenges. First, the waiver, that is currently only extended through May 1, 2024, will end and a permanent solution is needed. Second these beds present a risk for infection to inpatients since most of the alternative space beds are not in private rooms and/or are not walled off. Third, the beds do not have access to a private bathroom. Fourth, since the beds are only used when the Hospital exceeds licensed capacity, the Hospital must rely on travelling staff at a much higher cost. The Holder asserts that the Proposed Change will allow CCH to add permanent staff and provide consistency for bed availability and quality patient care.

### ***Emergency Room Admissions and ED Boarding***

The Holder has provided three years (FY 21-23) of data illustrating the impact of an insufficient number of medical/surgical beds that it did not have at the time of the DoN submission. Because ED boarding and occupancy levels have been consistent for multiple years, the Holder does not expect utilization to decrease and accordingly, occupancy levels will remain as is or increase without the addition of new, permanent inpatient beds.

CCH's high occupancy rate creates operational challenges that impact care delivery, which has an impact on the ED from where 88% percent of CCH's medical/surgical admissions originate. Prior to FY2021, the ED had an average of 1,000 patients boarding for 12 or more hours in the ED waiting for a medical/surgical bed. Beginning in FY21, 1,490 patients boarded in the ED for

<sup>5</sup> Falmouth Hospital operates 12 temporary beds.

<sup>6</sup> Dated September 18, 2023- The updated memorandum extended the duration for use of temporary adult medical/surgical inpatient beds to May 1, 2024.

12 or more hours, a 49% increase over the previous average. This number rose to 2,403 in FY22. In FY2023, the average wait time from decision to admit to being assigned to a bed for ED medical boarders was 371 minutes (6.2 hours). In FY 23, of the medical surgical boarders, 1085 (60%) were waiting for an inpatient medical/surgical bed for an average of 18.6 hours per patient.<sup>7, 8</sup>

The Holder states that it is well-documented that ED boarding negatively impacts health outcomes.<sup>ii</sup> Emergency departments are staffed and designed to provide episodic care, as compared to the type of care and setting necessary for inpatients.<sup>iii</sup> This results in poor patient experiences and added stress for staff who must care for a mix of patients.

The presence of ED boarders negatively impacts all ED patients as a result of increased ED lengths of stays for all patients.<sup>iv</sup> Because boarding patients must wait in an ED treatment room until an inpatient bed becomes available, newly arriving patients' diagnosis and treatment is delayed until a treatment room becomes available.

Staff asked the Holder what levels of patient severity at CCH's ED. CCH uses the Emergency Severity Index ("ESI") to differentiate acuity levels. Table 2 shows that 21% of emergency patients at CCH are high acuity (ESI 1 and 2) and approximately 1% of CCH ED patients are low acuity (ESI 5) which suggests that the majority of Barnstable County residents are appropriately utilizing urgent care resources and not the ED; CCHC operates six urgent care centers in Barnstable County. The table also shows while the volume of total ED visits has increased ~5%, as have the visits that fall into the highest acuity cohorts, those in the lowest acuity cohort, ESI 5, have decreased by ~11%.

**Table 2: CCD ED Acuity Distribution and Change FY 22-23**

Acuity Distribution at CCH ED	FY22		FY23		FY 22- 23 Change
	#	%	#	%	%
<b>High (ESI 1 and 2)</b>	16,238	21%	17,159	21%	5.7%
<b>Moderate (ESI 3 and 4)</b>	59,534	77%	62,489	77%	5.0%
<b>Low (ESI 5)</b>	862	1%	769	1%	-10.8%
<b>TOTAL<sup>9</sup></b>	76,634	100%	80,417	100%	4.9%

The Holder asserts, in order to be able to move patients out of the ED, the Hospital requires 32 additional licensed inpatient beds. Table 3 below shows the Proposed Change would reduce the

<sup>7</sup> There were 1,818 boarded patients in the ED for a total of 46,336 hours; 733 (40%) boarded for an average of 38.8 hours per patient either for a skilled nursing facility, for a short-term rehabilitation placement, or for services to be put in place to allow patients to return home safely.

<sup>8</sup> The hospital changed its electronic medical records system in 2020 and as such prior years data are not available.

<sup>9</sup> Total volume includes patients who register in the ED but leave before being seen by a provider. This population is about 2% of ED volume annually.

Hospital's occupancy rate (from ~98% to ~85%) to manageable levels that are within industry's 85% range while allowing for minimal organic volume growth of ~1.0% annually.

**Table 3: Projected Utilization**

<b>Table 3: Projected Utilization</b>	<b>FY 23*</b>	<b>FY 27^</b>	<b>FY 28^</b>	<b>FY 29^</b>	<b>FY 30^</b>	<b>FY 31^</b>
<b>Discharges</b>	16,960	16,960	17,033	17,107	17,181	17,255
<b>Days</b>	70,078	70,778	71,121	71,467	71,814	72,163
<b>Average Length of Stay</b>	4.1	4.2	4.2	4.2	4.2	4.2
<b>Average Daily Census</b>	192.00	193.9	194.9	195.8	196.8	197.7
<b>Occupancy</b>	97.46%	84.68%	85.09%	85.50%	85.92%	86.33%

\*197 beds

^229 beds

### ***Address Care Delivery Constraints of The Hospital's Aged Infrastructure***

As with the Approved Project, the Proposed Change will further address care delivery constraints resulting from the Hospital's aged infrastructure since it will add inpatient capacity within a new building where the proposed medical/surgical unit is designed to meet and exceed the current FGI standards for inpatient care including required bed clearance, non-slip flooring, space for family visitation, including sleeping accommodations, handwashing sinks in addition to the toilet area sink, and in-room showers. Additional features that are not present in the alternate space beds include rooms that will conform to acoustic requirements to mitigate exterior noise, using sound absorption materials which have been shown to improve sleep, promote recovery and emotional well-being; and the patients will be able control their lighting, entertainment, and nurse call system from an easy to-use, centralized panel. The new unit will have dedicated clinical workstations built outside of adjoining rooms to limit cross-contamination. These design considerations will enable staff to provide more efficient, patient-centered care.

### ***Address Future Needs of The Growing Aging Population***

Age is closely tied to utilization and serves as a valuable indicator of future need. The 45-69 age cohort of the Cape Cod population grew 14.8% from 2010 to 2022 and comprises a greater percentage of the total population (42.2% in 2022 vs. 39% in 2010). Furthermore, the percentage of Cape Cod (*Barnstable County*) residents aged 70 years and older was 23.7% (up from 17% in 2010). In Massachusetts, the number of people aged 65 and over in 2020 is up 36.5% from 2010. <sup>10</sup>.

For CCH patients aged 65 and over comprised nearly 75% of all inpatient discharges in FY 2023

<sup>10</sup> <https://censusreporter.org/profiles/05000US25001-barnstable-county-ma/>

In 2035, 39.98% of Barnstable County,<sup>11</sup> and 22.4% of Massachusetts is projected to be aged 65-years or older.<sup>12</sup>

Accordingly, the Hospital asserts that its Patient Panel and its service area will require access to inpatient services in facilities that can meet demand and facilitate the efficient provision of high-quality care within the community.

### ***Analysis***

Given the Holder's high utilization, the advanced age of the Patient Panel, the population growth projections for Cape Cod, and the aging infrastructure, the Proposed Change will ensure continued access to quality inpatient care within the local community. As a result of increasing demand for inpatient care, the Hospital is consistently over capacity and year around must rely on beds available through a temporary alternate care space waiver that does not meet the FGI standards for permanent beds and will expire. As a high public paying hospital, 74.4% of payments are from MassHealth, Medicare and other public payers;<sup>13</sup> traveling for this population poses additional challenges. The Proposed Change will provide inpatient capacity to address current needs and future demand for inpatient care by the Patient Panel that should eliminate the need to travel greater distances to receive care due to capacity constraints.

As a result of information provided by the Holder and additional analysis, staff finds that the Holder has demonstrated need for the additional 32 beds.

### **Impact on Costs to the Holder's existing Patient Panel**

The Proposed Change will increase the Approved Project's Maximum Capital Expenditure by \$14,666,613 for a total MCE of \$151,715,245. The Holder projects that the Proposed Change will increase the CCH's annual operating expense by approximately \$8,900,000.

If approved, the 32 beds will be built at the same time and on the same footprint as the cardiology unit on the approved floor below which will generate significant cost savings according to the Holder. Through the use of permanent staff and through the consolidation of resources, in contrast to the Alternate care beds in use now, efficiencies and cost savings will be realized.

The Holder states the additional beds at the Hospital will alleviate the costs associated with ED boarding and will improve access to care for geographically isolated patients who rely on the Hospital for emergent and inpatient care. The Holder asserts the additional beds will not result

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<sup>11</sup> <https://donahue.umass.edu/business-groups/economic-public-policy-research/massachusetts-population-estimates-program/population-projections>

<sup>12</sup> <https://donahue.umass.edu/business-groups/economic-public-policy-research/massachusetts-population-estimates-program/population-projections>

<sup>13</sup> <https://www.chiamass.gov/massachusetts-acute-hospital-profiles/>

in any change to price for CCH's existing patient panel and it does not anticipate any cost implications to its Patient Panel as a result of the Proposed Change.

### **Impact on Community Health Initiative**

The CHI funds for this Amendment will be combined with the original project's CHI contribution to address DPH health priorities, such as housing. The Holder needs to have additional touchpoints with CHI staff to provide updates on the local CHI planning and community engagement processes, and to provide an allocation timeline for the distribution of CHI funds.

### ***CHI Analysis***

As a result of information provided by the Holder and additional analysis, staff finds that with the conditions outlined below, and the ongoing communication on items for improvement outlined above, the Holder will have demonstrated that the amended Project has met Factor 6.

### ***Findings, Recommendations, and Conditions of Approval***

Staff reviewed the 2022 Staff Report and Decision Letter for Application # CCHC-22021416-HE to confirm that the request falls within the scope of that Approval.

Based upon the information submitted, and information in the record, the Department can find that the "the proposed change or modification falls within the scope of the Notice of Determination of Need as previously approved by the Department, and ... is reasonable"<sup>105</sup> C.M.R. 100.635(A)(3), which are the requirements for approval of an Amendment.

### **Conditions to the DoN**

1. Of the additional CHI contribution of \$733,330.65
  - a. \$177,832.68 will be directed to the CHI Statewide Initiative
  - b. \$533,498.05 will be dedicated to local approaches to the DoN Health Priorities
  - c. \$21,999.92 will be designated as the administrative fee.
2. To comply with the Holder's commitment to contribute to the CHI Statewide Initiative, the Holder must submit a check for \$177,832.68 to Health Resources in Action (the fiscal agent for the CHI Statewide Initiative) within 30 days from the date of the Notice of Approval.
  - a. Payments should be made out to:  
Health Resources in Action, Inc. (HRiA)  
2 Boylston Street, 4th Floor  
Boston, MA 02116  
Attn: MACHHAF c/o Bora Toro  
DoN project #: CCHC-22021416-HE



- b. Please send a PDF image of the check or confirmation of payment to [DONCHI@Mass.gov](mailto:DONCHI@Mass.gov) and [dongrants@hria.org](mailto:dongrants@hria.org)

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<sup>i</sup> Ravaghi et al., *Models and methods for determining the optimal number of beds in hospitals and regions: a systematic scoping review*, 20 BMC HEALTH SERVICES RESEARCH 186 (2020), available at <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-020-5023-z>.

<sup>ii</sup> Laam LA, Wary et al. "Quantifying the impact of patient boarding on emergency department length of stay: All admitted patients are negatively affected by boarding." *Journal of the American College of Emergency Physicians* (2021). Available at: <https://pubmed.ncbi.nlm.nih.gov/33718931/>

<sup>iii</sup> Laam LA, Wary et al. "Quantifying the impact of patient boarding on emergency department length of stay: All admitted patients are negatively affected by boarding." *Journal of the American College of Emergency Physicians* (2021). Available at: <https://pubmed.ncbi.nlm.nih.gov/33718931/>

<sup>iv</sup> Laam LA, Wary et al. "Quantifying the impact of patient boarding on emergency department length of stay: All admitted patients are negatively affected by boarding." *Journal of the American College of Emergency Physicians* (2021). Available at: <https://pubmed.ncbi.nlm.nih.gov/33718931/>