

Cambridge Public Health Commission, d/b/a Cambridge Health Alliance  
DoN #CHA-18090915-RE  
Applicant Responses to Applicant Questions #2  
November 26, 2018

**1. How old is the existing CT scanner?**

RESPONSE: The existing scanner is 6.5 years old.

**2. What is the operating capacity (%) of the existing CT scanner?**

RESPONSE: The existing CT scanner is staffed on a 24/7 basis. Capacity for outpatients is limited to 16-18 per day. Outpatients are scheduled during the day when there are two technicians on duty. The system is available to the emergency department and inpatient services on a 24/7 basis.

**a. Will the second scanner be faster and more efficient to operate?**

RESPONSE: The second scanner will be a dual energy scanner allowing CHA to perform procedures we are not currently able to perform such as cardiac exams and spectral imaging. We will also be able to perform quantitative tissue analysis and advanced functional imaging. The system will be faster with less radiation dose with improved image quality.

**3. How much scheduled downtime was there on the existing scanner in the past year?**

RESPONSE: Scheduled preventative maintenance on the existing scanner occurs every 6 weeks. The scanner is typically down for approximately 4 hours (1/2 day) for this type of maintenance. Thus, there was approximately 35 hours (4 1/2 days) of scheduled downtime for preventative maintenance on the existing scanner in the past year.

In addition, the existing CT scanner is unavailable for 10 to 30 hours per month while it is being used for interventional radiology cases

**4. How often is there unscheduled down-time on the CT scanner? (eg. One day per month?)**

RESPONSE: Over the course of the past twelve months, unscheduled down time on the existing CT scanner has ranged from 4 to 40 hours per month for unexpected service issues. CT downtime can last more than twenty-four hours in these circumstances. If parts are needed, they most often need to be ordered, and the most common service issue is replacement of the CT tube which is at least a 24 hour down time repair. Issues with equipment operation leading to down time are unpredictable, leading to unexpected

disruptions without a second machine to act as a back-up.

**5. Please describe in detail the types of competing demands on the existing CT scanner and provide evidence to demonstrate the impact on patient panel access to CT services.**

RESPONSE: There are multiple competing demands on the existing CT scanner at CHA's Cambridge Hospital campus, and having a single CT scanner there compromises access any time the unit is unavailable for general CT exams due to service issues or due to Interventional Radiology (IR) cases. When this single unit is not available, the ED needs to inform ambulances that CHA Cambridge cannot accept potential stroke patients. This results in these patients as well as others being taken to non CHA facilities. Since most of the patients using CHA services are CHA patients, this results in a break in the integration of care.

Any situation that causes the CT unit to be unavailable for more than 45 minutes results in impact on the ED. The ED directs stroke patients elsewhere. This redirect also results in non stroke patients being brought elsewhere. Any ED is significantly impacted when CT is not readily available. Sending our patients out of CHA affects the care integration. As our pool of patients in risk or shared risk programs grow, it is imperative that CHA has all care information. This is best done by providing the service internally whenever possible.

Most inpatients and ED patients wait until the system is available. This can delay discharges and care decisions. If the patient cannot wait, ordering providers consult with radiologists to determine if there an alternative exam that will appropriately replace the CT if the patient is not able to wait until the system is available.

CHA reschedules outpatients when the system is not available. This is a patient dissatisfier due to delays and inconvenience.

**a. How often do patients experience delays in accessing CT services?**

RESPONSE: Having only one CT unit results in either ED and inpatients being delayed or scheduled outpatients waiting past their appointment time. Both result in patient dissatisfaction. There are patient delays on a daily basis. At least 35% of our outpatients wait past their appointment time. ED patients are prioritized and "next" resulting in outpatient and inpatient delays. Inpatients are often delayed until the outpatient schedule is done. Although we "block" time on the schedule for ED and inpatient, the blocked time may not coincide with the ordered time. The blocked time is typically used to get back on schedule.

**b. How does the growth in CHA's interventional radiology practice impact patient panel access to CT services?**

RESPONSE: In connection with its efforts to appropriately keep community level care at

CHA, interventional radiology procedures at CHA have been gradually increasing over the past 18 months, and CHA expects interventional radiology procedures needing CT guidance to continue increasing. In particular, CHA is building a strong lung nodule program and estimates that at least 950 additional CTs annually will be needed over current usage. CHA identifies approximately 50 new nodule patients per month.

To meet the needs of its patient panel, CHA is hiring interventional radiologists with the goal of being able to offer its patients more types of minimally invasive procedures, leading to further demand for CT scans.

On the one hand the growth in CHA's interventional radiology practice will improve access of CHA's patient panel to integrated care that is linked with patients' primary and specialty care. On the other hand, without the addition of the second scanner, the growth in interventional radiology will reduce access for other services unless a second scanner is added.

**6. How will the proposed project operate more efficiently and effectively to improve patient panel access to CT services?**

RESPONSE: As a result of the improved efficiencies described below, CHA estimates that adding a second CT scanner will result in approximately 2,100 CT scans for CHA patients being redirected back to CHA, thereby increasing access and ensuring integrated care for CHA's patient panel. CT volume is increasing and CHA expects to see a steady growth. Most of our insured patient population has insurance products that are full or shared risk. CHA is focusing on integrated care which will result in redirecting out migration internally.

A second CT at CHA Cambridge will provide necessary back-up capacity so that inpatient and emergency department patients, including potential stroke patients, at CHA Cambridge requiring urgent access to CT services will reliably have timely on-site access to these services. Because the second CT scanner will be located within the existing radiology suite at CHA Cambridge, it will enable CHA entire imaging service at CHA Cambridge to operate more efficiently. CHA plans to operate the additional scanner using its existing staffing complement. The second scanner will allow for more predictable patient scheduling and thus allow for more efficient staffing patterns. The second scanner will also enable CHA to plan and schedule scanner downtime or react to unanticipated downtime without disrupting the operations of its emergency department or inpatient units at CHA Cambridge.

Adding a second CT scanner will thus improve access and the care experience for CHA's patient panel. A second CT will reduce the bumping of outpatient patients by urgent or emergent patients and will afford for more predictable, timely, and reliable scheduling of patients. Reducing delays and rescheduling will improve the care experience for patients and, crucially for so many of CHA's patients and their caregivers, mitigate the burdens of having to reschedule appointments and/ or take more time off from work than expected or may otherwise be necessary.

**7. Who is billed for the ambulance transport when a patient is transported off-campus for a CT scan?**

RESPONSE: CHA is billed for and absorbs the costs of such transport.