Questions for PHS Brigham and Women's Capital Expansion and Required Equipment Project

DON # PHS-17111513-HE

Factor 1 & 2

2. The last date on which the Department received BWH's Emergency Department data was in March 2014. Please provide the DoN program with the subsequent data using the most current definitions.

Please find below BWH's Emergency Department data as requested for the period April 2014 through December 2017. Please note that for the last column, "# of Patients with Visit More than 12 Hours with Behavioral Health Diagnosis", the counts include behavioral health patients that were placed in ED Observation status. Other metrics do not include ED Observation length of stay.

Facid	Hospital	Month	Year	Total Visits	Median LOS for Admitted Patients (Minutes)	Median LOS for Discharged Patients (Minutes)	# of Patients with Visit More than 12 Hours	# of Patients with Visit More than 12 Hours with Behavioral Health Diagnosis
	BWH	April	2014	4,990	346	215	171	39
	BWH	May	2014	5,237	311	195	101	50
	BWH	June	2014	5,086	344	202	145	29
	BWH	July	2014	5,260	347	210	156	40
	BWH	August	2014	5,279	334	216	162	50
	BWH	September	2014	5,218	353	219	221	56
	BWH	October	2014	5,061	383	218	250	46
	BWH	November	2014	4,741	360	212	218	45
	BWH	December	2014	4,867	356	215	248	43
	BWH	January	2015	5,262	344	231	148	66
	BWH	February	2015	4,243	379	217	231	48
	BWH	March	2015	5,308	356	224	185	47
	BWH	April	2015	5,157	365	237	256	47
	BWH	May	2015	5,172	324	216	164	45
	BWH	June	2015	5,154	378	258	185	27
	BWH	July	2015	5,433	378	250	280	40
	BWH	August	2015	5,451	366	240	196	37
	BWH	September	2015	5,219	396	240	309	44
	BWH	October	2015	5,271	386	250	296	42
	BWH	November	2015	4,969	376	240	211	32
	BWH	December	2015	5,139	365	240	219	32
	BWH	January	2016	5,164	370	242	275	40
	BWH	February	2016	4,824	382	234	234	47
	BWH	March	2016	5,455	371	233	230	51
	BWH	April	2016	5,344	346	224	172	49

	BWH	May	2016	5,391	363	228	237	60
	BWH	June	2016	4,892	338	225	125	37
	BWH	July	2016	5,157	345	226	161	52
	BWH	August	2016	5,471	358	241	159	44
	BWH	September	2016	5,154	373	234	261	59
	BWH	October	2016	5,423	387	236	257	42
	BWH	November	2016	4,909	386	239	253	31
	BWH	December	2016	5,056	364	219	173	49
	BWH	January	2017	5,356	380	227	256	38
	BWH	February	2017	4,668	351	200	164	35
	BWH	March	2017	5,240	373	218	214	44
	BWH	April	2017	5,156	373	212	259	55
	BWH	May	2017	5,349	366	217	213	45
	BWH	June	2017	5,247	354	210	181	38
	BWH	July	2017	5,377	382	219	230	51
	BWH	August	2017	5,252	369	216	256	53
	BWH	September	2017	5,110	383	218	287	35
	BWH	October	2017	5,308	389	218	289	50
	BWH	November	2017	5,033	381	205	255	47
	BWH	December	2017	4,908	335	195	131	39

3. What standards were used to determine that doubling the size was optimal?

b. What percent of the time will the flexible zones be utilized? How many will there be? And how long will it take to ramp up, given that your statement that the former pods were time-consuming to open and shut down?

The 3 main flexible zones will be the Hospital's main 24/7 central pod, the arrival/care initiation area and the combined observation/acute care space. The Hospital's challenges with ramping up and down with staffing discussed previously have been primarily related to the closing of pods in the late evening, as patients need to be cleared from pods at the time staff depart. This results in a period prior to when the pod is scheduled to close when it is relatively under-utilized, even when the department is very busy and would benefit from additional staffed rooms.

i. The main 24/7 central pod will have 18 beds and two areas separated by the main corridor that runs through the department. This is significantly larger than the Hospital's current main 24/7 central pod, which contains 13 beds. The Hospital believes that this additional capacity will help most in the later evening and overnight, when the Hospital would otherwise be more vulnerable to spikes in patient arrivals or inpatient boarding.
ii. The care initiation space is planned to be open approximately 50% of the time during the Hospital's highest volume arrival hours (12p-12a) to allow for continued forward care progression during high-volume periods. Since the Hospital has used its surge areas in daily operations and plans the open/closing times it has not found that it has significant issues with efficiency.
iii. The combined observation/acute care space is planned to be opened 24 hours/day for ED observation and approximately 75% for acute care. Bed utilization for ED observation will

likely ramp up as acute care space ramps down and closes so there isn't expected efficiency loss related to daily operations.

c. How was the 10 bed size of the observation area determined?

The volume for the future ED observation beds was determined based on the Hospital's current ED observation volume, which typically overflows into the Hospital's acute care space at its peak (i.e., the Hospital's overnight observation census routinely exceeds its dedicated observation beds by 3-4 patients). As previously discussed, the Hospital's future observation area is integrated into a larger pod, which allows the Hospital to flex up and down according to its hourly observation patient demand as well. For example, in the mid-afternoon the observation unit is typically underutilized as patients have been discharged and new patients are yet to arrive. During this time, the Hospital can more easily initiate care for new ED patients in beds previously occupied by observation patients in this model. In addition, the Hospital expects its future projected observation volume to increase it uses observation as an inpatient volume mitigation strategy.

e. How many ambulance patients were diverted due to overcrowding over the past year?

The Hospital does not divert patients arriving via field ambulance or undesignated med flight per MA state law. For reference, the Department of Public Health's Circular Letters related to the prohibition on ambulance diversion can be accessed using the following links:

- DHCQ 08-07-494: Changes to Ambulance Diversion Policies (July 3, 2008): http://www.mass.gov/eohhs/docs/dph/quality/hcq-circular-letters/hospital-general-0807494.pdf
- DHCQ 15-4-635: Hospital "Code Black Policy" (April 16, 2015): http://www.mass.gov/eohhs/docs/dph/quality/hcq-circular-letters/2015/dhcq-1504635.pdf.

f. How many requests for tertiary transfers were turned away due to overcrowding?

An approximate total of 416* transfers were declined due directly to ED overcrowding in CY17. *This is an approximate number as accurate tracking of data began on April 1 when centralized Access Center was opened. Data from April 1 to December 31 was annualized for total of 416.

g. How was the compliment of ED radiology diagnostic equipment determined?

The additional CT and ultrasound space was determined to be necessary as the Hospital's utilization during peak times in current daily operations routinely exceeds capacity, resulting in diagnostic delays. With the expected volume growth over the lifespan of the new space, the Hospital anticipates this supply-demand mismatch to further increase unless it adds new emergency radiological capacity to compliment emergency services provided to its patients. Of note, the Hospital currently and will continue to improve other throughput processes related to emergency diagnostics, patient preparation, transport, study times and interpretation of results in order to reduce ED length of stay.