MUSKOKA ALGONQUIN HEALTHCARE

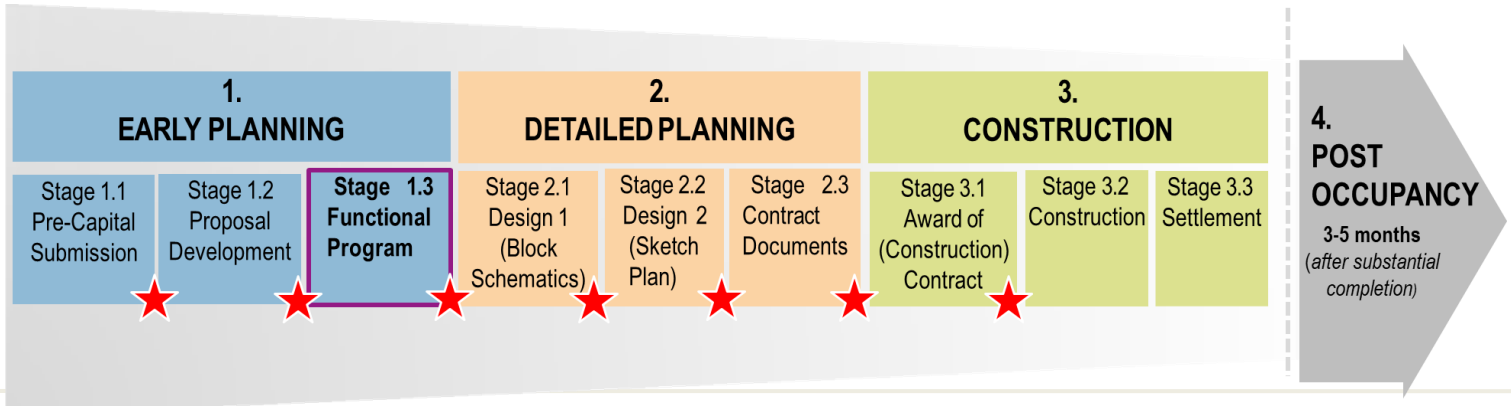
Supporting Materials for CSA MD Meeting #2

March 27, 2024

What is the process for capital redevelopment in Ontario?

- Capital planning is a multi-staged, prescribed process, overseen by Ministry of Health and Infrastructure Ontario
  - There are prescribed submission inputs and guidelines at each stage (e.g. type of demographic information used, methodology for projections)
  - Common Steps and Approvals at various stages
  - Set financial arrangements (e.g. overall budget, proportion of cost between local share and government)

- Methodology for each project follows the same steps and goes through the same process with the Ministry of Health (regardless of the consultants/hospital involved in the planning)



Data Inputs to the Planning Process: MAHC View

Muskoka Algonquin Healthcare

Program		***2017/18***	***2018/19***	***2019/20***	***2020/21***	***2021/22***	***Increase: 2017/18 to 2019/20***
Emergency Department Visits		45,541	44,794	43,649	35,129	41,305	-1,892
Acute Inpatient Discharges	Adult Medical	4,120	4,026	4,133	3,828	3,994	13
	Adult Surgical	573	538	538	473	420	-35
	Obstetrics	261	292	265	285	325	4
	Newborn / Neonate	252	287	258	283	324	6
	Paediatrics	41	51	47	50	62	6
	Total	5,247	5,194	5,241	4,919	5,125	-6
Complex Care Days		5,239	5,038	5,202	2,806	2,422	-37
OR Cases	Day Surgery	3,055	3,448	3,448	3,155	3,313	393
	Inpatient Surgery	660	640	614	566	537	-46

Sources: IntelliHealth DAD, OMHRS, CCRS, NRS, NACRS 2019/20; PSG Calculations

MAHC's clinical services activities are measured using the reference standard clinical administrative data sets

- All Ontario hospitals use standardized processes to collect and submit these data to CIHI

This shows a sample summary of MAHC's clinical activities from 2017/18 to 2021/22

2019/20 was used as the base year to develop the functional program projections

Data Inputs to the Planning Process: Site View

		Huntsville District Memorial Hospital					South Muskoka Memorial Hospital				
Program		**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**
Emergency Department Visits		23,668	22,758	22,005	17,546	20,846	21,873	22,036	21,644	17,583	20,459
Acute Inpatient Discharges	Adult Medical	2,150	2,053	2,057	1,842	2,026	1,970	1,973	2,076	1,986	1,968
	Adult Surgical	274	233	198	185	189	299	305	340	288	231
	Obstetrics	169	178	164	192	200	92	114	101	93	125
	Newborn / Neonate	161	172	156	187	200	91	115	102	96	124
	Paediatrics	28	24	29	31	46	13	27	18	19	16
	Total	2,782	2,660	2,604	2,437	2,661	2,465	2,534	2,637	2,482	2,464
Complex Care Days							5,239	5,038	5,202	2,806	2,422
OR Cases	Day Surgery	1,262	1,522	1,531	1,629	1,690	1,793	1,926	1,917	1,526	1,623
	Inpatient Surgery	287	262	217	236	244	373	378	397	330	293

Sources: IntelliHealth DAD, OMHRS, CCRS, NRS, NACRS 2019/20; PSG Calculations

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Who Are the MAHC Populations and What Role Does MAHC Play in Meeting Their Needs?

		Activity in Muskoka LHA		
Program	***Measure***	***HDMH***	***SMMH***	***MAHC Total***
ED Visits	Visits	22,005	21,644	43,649
	Catchment	57%	81%	69%
	Market Share	34%	48%	82%
Adult Medical Inpatient Discharges	Cases	2,057	2,076	4,133
	Catchment	63%	89%	76%
	Market Share	33%	47%	80%

Sources: IntelliHealth DAD, NACRS 2019/20; PSG Calculations

- Catchment refers to the regional distribution of MAHC's patients
  - 76% of all MAHC adult medical inpatient patients live in the Muskoka LHA
- Market share is the percent of total services received by Muskoka residents delivered by each provider
  - 80% of all adult medical inpatient discharges for residents of Muskoka LHA were at MAHC

Who Are the MAHC Populations and What Role Does MAHC Play in Meeting Their Needs?

	MAHC Activity 2019/20					
	Emergency Department Visits by Month			Inpatient Cases by Admit Month		
Month	Total Visits	% from Muskoka /Parry Sound	% from Elsewhere	Total Discharges	% from Muskoka /Parry Sound	% from Elsewhere
April	3,302	92%	8%	414	95%	5%
May	3,709	86%	14%	462	93%	7%
June	4,059	79%	21%	414	89%	11%
July	4,914	64%	36%	447	86%	14%
August	4,871	62%	38%	521	83%	17%
September	3,733	83%	17%	497	91%	9%
October	3,629	85%	15%	478	91%	9%
November	3,082	92%	8%	409	92%	8%
December	3,305	89%	11%	402	95%	5%
January	3,322	93%	7%	401	97%	3%
February	3,013	90%	10%	421	95%	5%
March	2,531	91%	9%	375	95%	5%
2019/20 Total	**43,649**	**82%**	**18%**	**5,241**	**91%**	**9%**

Sources: IntelliHealth DAD, NACRS 2019/20; PSG Calculations

MAHC's catchment populations include seasonal residents and tourists

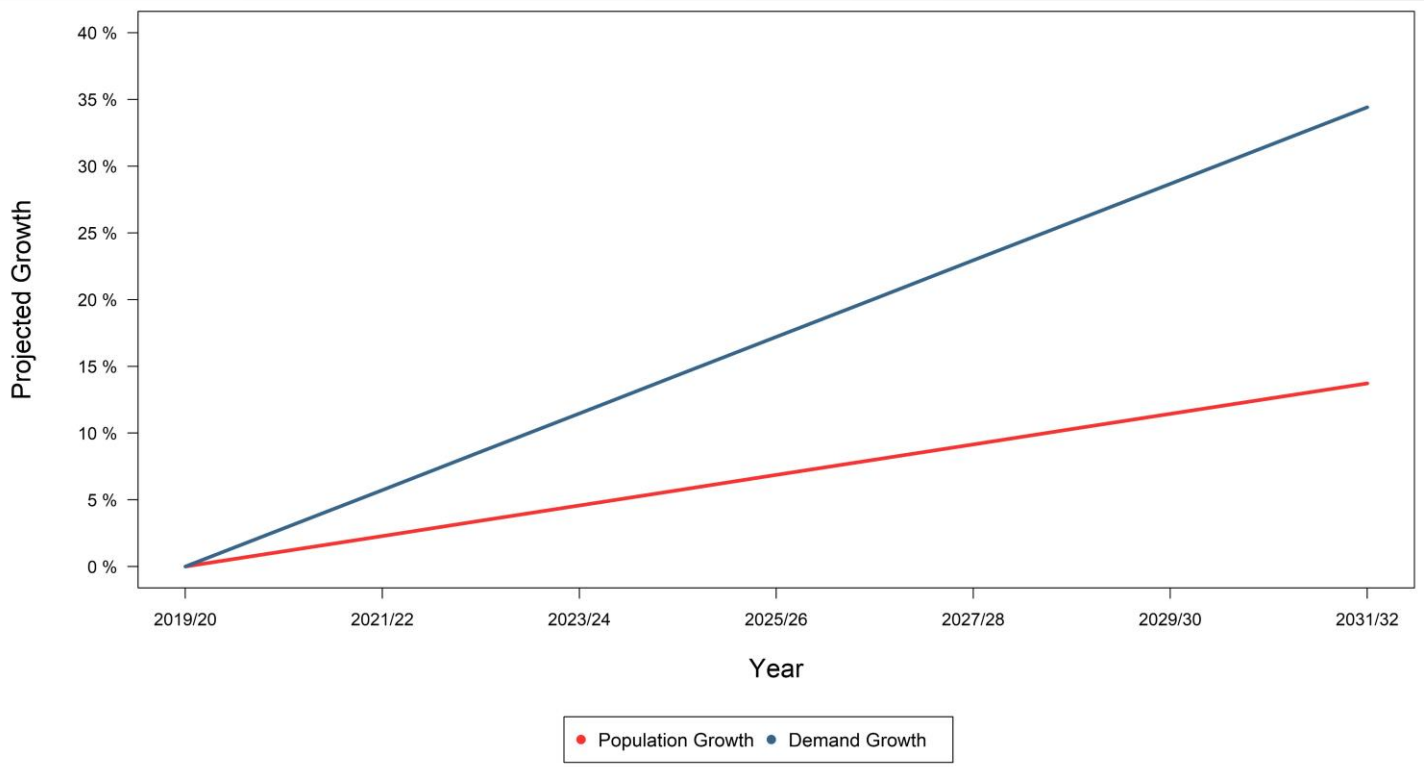
- Service use by the non-permanent residents is incorporated into all analysis and projections

82% of MAHC ED visits and 91 percent of MAHC discharges are for patients living in Muskoka or Parry Sound
In the summer, up to 38% of MAHC ED visits are for patients who live beyond Muskoka or Parry Sound

How Are the MAHC Populations Expected to Grow and Age?

	Muskoka LHA Residents				
Age Group	*2012/13*	*2019/20*	*2031/32*	*2012 to 2019 % Change*	*2019 to 2031 % Change*
<01	440	451	531	3%	18%
01-17	9,683	9,212	9,641	-5%	5%
18-59	32,975	33,050	34,271	0%	4%
60-79	14,781	18,869	23,355	28%	24%
80+	3,583	4,367	7,206	22%	65%
Total	**61,462**	**65,949**	**75,004**	**7%**	**14%**

Sources: Statistics Canada 2016 Census, MOF Population Projections Spring 2021 Release; PSG Calculations



The Ontario Ministry of Finance produces population projections using StatCan census data

- The Ministry of Health uses these projections for health care planning and funding

The Muskoka Local Health Area's total population grew by 7% from 2012/13 to 2019/20, driven by the 60+ population
Seniors are projected to continue growing at a fast rate through 2031/32, with the 80+ population growing by 65%

Sources: Statistics Canada 2016 Census, MOF Population Projections Spring 2021 Release, IntelliHealth DAD 2019/20; PSG Calculations
Ontario Ministry of Finance Populations Projections: https://www.ontario.ca/page/ontario-population-projections#section-6

Emergency Department: Projection Scenarios

Site	Triage Level	2019/20	2031/32 Projections: Demographic Projection	2031/32 Projections: Ministry of Health Projection	Difference
Huntsville District Memorial Hospital	1	113	136	136	0
	2	3,637	4,272	4,272	0
	3	10,096	11,891	11,891	0
	4	6,459	7,305	6,459	-846
	5	1,672	1,892	1,672	-220
	Total	**22,005**	**25,527**	**24,461**	**-1,066**
South Muskoka Memorial Hospital	1	176	214	214	0
	2	3,454	4,111	4,111	0
	3	9,832	11,783	11,783	0
	4	5,751	6,693	5,751	-942
	5	2,383	2,767	2,383	-384
	Total	**21,644**	**25,624**	**24,299**	**-1,325**
MAHC Total	1	289	350	350	0
	2	7,091	8,382	8,382	0
	3	19,928	23,674	23,674	0
	4	12,210	13,998	12,210	-1,788
	5	4,055	4,658	4,055	-603
	Total	**43,649**	**51,151**	**48,760**	**-2,391**

Sources: IntelliHealth NACRS 2019/20 - 2021/22; MOF Population Projections Spring 2021 Release; PSG Calculations

This shows MAHC's projected ED visits under two planning scenarios:

1. Demographic projection increases visits at the rate of growth and aging of the MAHC populations
2. The Ministry of Health projection increases only CTAS 1, 2, 3 visits at the demographic rate and holds CTAS 4, 5 visits constant

The Ministry of Health projection reduces MAHC's 2031/32 demographic forecast by 2,391 visits

Note: there were 43,514 visits in 2022/23 (source MIS Trial Balance); based on prorated 2023/24 Q3 data, MAHC is on track for 44,150 visits

MAHC Inpatient Beds

Bed Type	Current	2031/32 Planned
Medical/Surgical	90	90
Level 2 ICU	11	
Level 2/3 ICU	-	14
Obstetrics	4	2 (+1)
Integrated Stroke Unit	-	14
Complex Continuing Care	8	-
Rehabilitation	10	
Reactivation/Complex Medical Management (includes ALC)	-	37
TOTAL	***123***	***157***

What are the key parameters for planning hospitals?

There are fixed parameters common to all hospital redevelopments.

These include (but are not limited to) the following:

Spatial	❑ Key parameters (beds, space) carried from previous planning stage ❑ Space standards (room sizing, accessibility, IPAC etc.)
Financial	❑ Approved project budget ❑ Local share
Regional	❑ Alignment with overall system and initiatives/ priorities ❑ Mandates from regional service providers (e.g. siting of stroke, renal, cancer, critical care, and mental health programs)
Temporal	❑ Prescribed capital planning process ❑ Projections based on specific timeframe ❑ Project submitted within a general timeframe to ensure project progresses on schedule

What has been the approach to planning?

What was the basis for the Functional Program work?

- The approved Stage 1 submission - 2 acute sites; 157 total beds with associated space requirements

What early planning was done?

- Workflow analysis to identify opportunities for improvements in current care model (Leading Edge consultants)
- Early clinical visioning to confirm future model of care and discuss opportunities for innovation and operational efficiencies

What was the consultation process?

- Over eight months, more than 250 subject matter experts (staff, physicians, volunteers, patient experience partners, hospital leaders, and key healthcare partners) gathered as User Groups to explore planning options and develop the future service delivery model (including clinical, operational, and space requirements)

Why did the model change?

- Costing of the project was included in the project schedule for December of 2023, however considering the industry-wide cost escalation, it was decided that a preliminary cost estimate would be undertaken in the Fall to test the space requirements before the project neared completion.
- Preliminary costing completed in October, 2023 of the user group developed model was significantly higher (approximately 45%) than the approved project budget (MoH and local share portions)

What has been the approach to planning?

How was the Innovative Model developed?

- SLT requested development of a model that would fit within funding envelope without compromising clinical care
  - ✓ Maintain full-service ED at both sites
  - ✓ Reduce duplication of service and space, where appropriate; consider operational efficiency
  - ✓ Use lens of one organizations with two sites working to support one another; part of larger system
  - ✓ Incorporate innovative care models from other hospitals/organizations

- Model was developed by consultants on these principles and sent for costing to determine if it fit the financial parameters and would be relevant for further discussion with clinical teams

- Model fit within the approved budget and would be used as a foundation for discussions with users

- Sessions held in November and January with user groups to explore and refine the proposed model (incl. staff, physicians, other stakeholders)
  - changes made based on feedback from users (e.g. addition of ICU and increased short stay beds at SMMH, adjustment of surgical volumes between the sites, adjustment of clinical support workflow)

Bracebridge ED: How many patients are admitted and how long do they stay in hospital?

BRACEBRIDGE EMERGENCY ROOM DATA, 2019/20			
Total ED Visits	21,644		
Treated, not admitted	19,753 (93.3%)		
Admitted patients	**8.7% of ED patients are admitted into a bed (1,891 patients)**		
	75% will stay less than 6 days (1,414 admitted patients)		
Inpatient LOS (Days)	**ED Visits**	**Inpatient Days**	**Estimated Bed Need (Total Days/365 with 90% utilization)**
0-1	403	403	1.5
2	340	680	2.5
3	248	744	2.7
4	174	696	2.1
5	133	665	2.0
6	116	696	2.1
Total ED Admits (up 6-day LOS)	**1,414**	**3,884**	**12.9 beds (incl. patient transfers)**

Source: IntelliHealth NACRS, DAD 2019/20; PSG Calculations

Bracebridge ED Admits: Characteristics

Total ED Admits (up 6-day LOS)	1,414 TOTAL	Potential Care Model
Patients that will be cared for in Bracebridge	1,256 patients	11.1 beds required at Bracebridge
Patients requiring care at Huntsville e.g. Stroke, Neurology, Level 3 ICU, Complex Medical Management	- 126 patients	2-3 transfers/week to Huntsville
Patients requiring MH bed at another facility	- 32 patients	1 transfer/1-2 weeks (out of region)
ESTIMATED TOTAL TRANSFERS TO HUNTSVILLE	**697 patients**	**2 patient transfers/day to Huntsville**
Patients requiring care at Huntsville e.g. Stroke, Neurology, Level 3 ICU, Complex Medical Management	126 patients	2-3 transfers/week to Huntsville
Patients with LOS >6-days and will likely require care at Huntsville	471 patients	1-2 transfers/day to Huntsville
Admitted patients at Bracebridge with condition change and require transfer to Huntsville	~100 patients	1-2 transfers/week to Huntsville

What are some key clinical dependencies on siting of other programs/services?

There are a few clinical 'non negotiables' that underlie any MAHC modelling scenario.

These influence siting of other programs/services due to their relationship and/or dependency

Clinical Program/Service	Rationale and Dependencies
Integrated Stroke Unit	• ISU approved by MOH in Stage 1 submission • Funded for 14 beds by Ontario Stroke Network in Huntsville to ensure geographic coverage for stroke services across Region (across care journey from acute to rehab) • MRI should be located at site with Integrated Stroke Unit to support timely access for stroke patients
Critical Care	• CCSO has expressed need for additional Level 3 system capacity • Level 3 beds ideally located at HDMH for geographical coverage and related supports on site (e.g. Stroke)
Reactivation & Complex Medical Management (CMM)	• 24 CMM (i.e., complex continuing care) beds approved by MoH in Stage 1 submission • Reactivation/CMM beds ideally centralized at one site to reduce duplication and make efficient use of staffing and space resources (e.g. rehab treatment gym, evaluation suite, other indoor and outdoor therapeutic spaces) • Ideally located with Stroke program to share rehab spaces and staffing expertise (e.g. allied health)

Care Close to Home Model: What recommendations were included in the model, and what additional assumptions were made to enable development of space requirements?

	Siting		Model Recommendation	Additional Assumptions
	HDMH	SMMH		
Clinical Program and Services				
Ambulatory Clinics & Medical Day Care/Chemo/Dialysis	X	X	Chemo and Dialysis located at HDMH	Remaining ambulatory clinics distributed between both sites
Outpatient Rehabilitation			-	Located in community
Emergency Services	X	X	Unchanged	Full-service ED remains at both sites
Surgical Services	X	X	Inpatient and outpatient distributed across both sites	Cataracts at HDMH, Urology procedures at SMMH; Endoscopy volumes split between both sites
Medical / Surgical Inpatient	X	X	36 beds at HDMH, 53 at SMMH	Allocated 8 of these beds to pair with Obstetrics beds at each site
Critical Care	X	X	Level 2 with 7 beds at each site	No CCRT team based on model distribution and Level
Obstetrics	X	X	Obstetrics at both sites	2 LDRP beds with 8 Med/Surg beds at each site (as prior)
Integrated Stroke Unit	X		12 beds for Stroke Rehabilitation	Adjusted to 14 beds for Integrated Stroke Unit as approved by MOH
Reactivation & Complex Medical Management		X	Slow Stream Rehabilitation planned as part of 90 beds at SMMH	24 CCC approved by MOH and reclassified as Complex Medical Management. Additional 13 beds for Reactivation of ALC patients planned with CMM beds (as prior)

Care Close to Home Model: What recommendations were included in the model, and what additional assumptions were made to enable development of space requirements?

	Siting		Model Recommendation	Additional Assumptions
	HDMH	SMMH		
Clinical Support Services				
Cardio-Respiratory Services	X	X	-	Volume split between both sites
Clinical Laboratory	X	X	-	Full service both sites
Diagnostic Imaging			-	
- CT	X	X	Outpatient located at SMMH	CT also included at HDMH to accommodate ED and inpatient needs
- MRI	X		Located at HDMH	
- X-Ray	X	X	-	Volume split between both sites
- Ultrasound	X	X	Outpatient located at SMMH	U/S also included at HDMH to accommodate ED and inpatient needs
- Mammography/BMD	X	X	Bone Density HDMH Mammography at SMMH	Mammo also included at HDMH to support BMD patients as many will have both tests
- Nuclear Medicine	X		Located at HDMH	
Pharmacy Services	X	X	-	Full service both sites
Morgue	X	X	-	Morgue included at both sites
Education & Training Services				
Education & Training Service	X	X	-	Included at both sites
NOSM	X	X	-	Included at both sites

Care Close to Home Model: What recommendations were included in the model, and what additional assumptions were made to enable development of space requirements?

	Siting		Model Recommendation	Additional Assumptions
	HDMH	SMMH		
Admin and General Support Services				
Administration	X	X	-	Split between both sites
Foundation	X	X	-	Foundation at both sites
Auxiliary	X	X	-	Auxiliary at both sites
Spiritual Care	X	X	-	Spiritual Care services at both sites
Information and Telecommunications	X	X	-	Split between both sites
Plant Operations and Management	X	X	-	Full service both sites
Environmental Services	X	X	-	Full service both sites
Materials Management	X	X	-	Main storage at SMMH
Medical Devices Reprocessing	X	X	-	Full service both sites
Nutrition and Food Services	X	X	-	Full service both sites
Main Lobby Services	X	X	-	Included at both sites
Physician and Staff Support	X	X	-	Included at both sites
Central Registration & Switchboard	X	X	-	Central Reg. and Switchboard at both sites

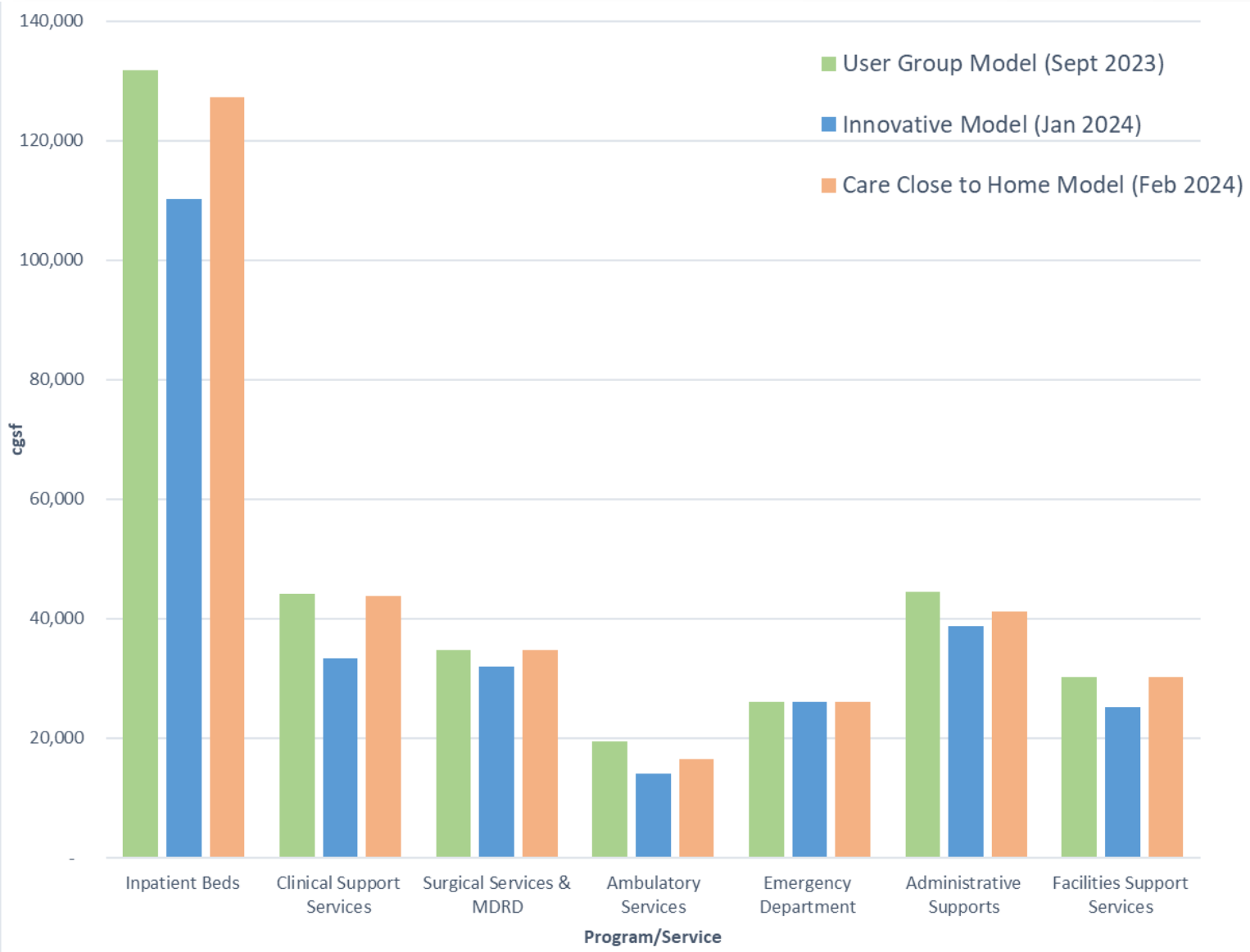
MAHC Inpatient Beds by site: How do the models compare to current state?

Site	Bed Type	Current MAHC Beds	2 Site Acute Model (User Groups)	Proposed Innovative Model	Care Close to Home Model
SMMH	Medical/Surgical	52	42	18	52
	Level 2 ICU	5	6	4	7
	Complex Continuing Care	8		-	-
	Reactivation/Complex Medical Mgmt. (incl. ALC)	-	24	-	37
	Obstetrics	2	2	-	2
	TOTAL	***67***	***74***	***22***	***98***
HDMH	Medical/Surgical	38	42	72	36
	Level 2 ICU	6			7
	Level 3 ICU	-	8	10	-
	Rehabilitation	10		-	-
	Reactivation/Complex Medical Mgmt. (incl. ALC)	-	17	37	-
	Integrated Stroke Unit	-	14	14	14
	Obstetrics	2	2	2 (+1)	2
	TOTAL	***56***	***83***	***135***	***59***
MAHC TOTAL		***123***	***157***	***157***	***157***

Space Comparison: Models

	Huntsville (cgsf totals)				Bracebridge (cgsf totals)				MAHC TOTAL (cgsf totals)			
	Stage 1	Stage 1.3			Stage 1	Stage 1.3			Stage 1	Stage 1.3		
	2 Acute Site Model (2019)	User Group Model (Sept 2023)	Innovative Model (Jan 2024)	Care Close to Home Model (Feb 2024)	2 Acute Site Model (2019)	User Group Model (Sept 2023)	Innovative Model (Jan 2024)	Care Close to Home Model (Feb 2024)	2 Acute Site Model (2019)	User Group Model (Sept 2023)	Innovative Model (Jan 2024)	Care Close to Home Model (Feb 2024)
	152,306	**173,055**	**178,219**	**150,878**	**147,380**	**157,803**	**101,467**	**168,846**	**299,686**	**330,858**	**279,686**	**319,724**
Ambulatory Services	11,960	12,252	4,300	10,640	5,320	7,213	9,775	5,786	17,280	19,465	14,075	16,426
Emergency Department	10,570	13,005	12,890	13,005	10,220	13,005	13,210	13,005	20,790	26,010	26,100	26,010
Inpatient Beds (Med/Surg, CCU, Obs, Stroke, React)	58,740	70,190	97,220	51,440	59,895	61,580	12,905	75,830	118,635	131,770	110,125	127,270
Surgical Services & MDRD	14,261	16,620	10,990	16,620	18,005	18,145	20,935	18,145	32,266	34,765	31,925	34,765
Administrative Supports (incl. Admin, Lobby, MD/Staff Amen.)	20,680	24,043	22,759	21,898	19,855	20,445	16,052	19,320	40,535	44,488	38,811	41,218
Clinical Support Services (Lab, Diagnostics, Pharm)	22,305	23,270	14,765	23,600	20,135	20,925	18,680	20,270	42,440	44,195	33,445	43,870
Facilities Support Services (incl. Food & Nutrition)	13,790	13,675	15,295	13,675	13,950	16,490	9,910	16,490	27,740	30,165	25,205	30,165

Space Comparison: Models



This graph compares the projected space requirements (provided in the previous slide) for each model, by service area.

The reduction in duplication and other service delivery model changes within the Innovative Model result in significantly space savings in key program/service areas.

Some of these efficiencies have been carried into the proposed Care Close to Home model, however much of the duplication remains in the inpatient and clinical support areas.