

CARE COORDINATION CENTRE

Provincial Capacity Management and Transfer Back

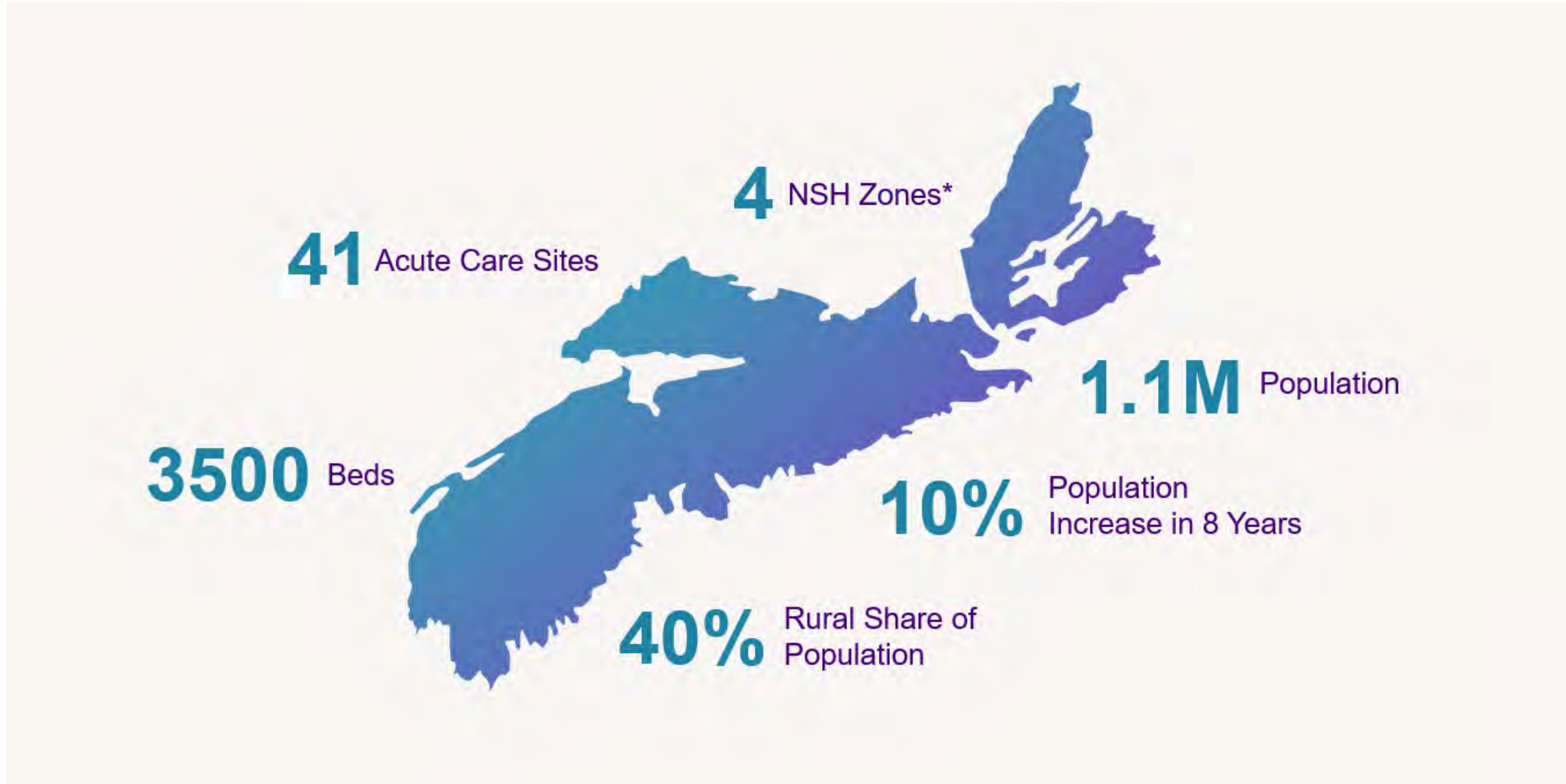
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NOVA SCOTIA CONTEXT



C3 BACKGROUND & EXPECTED OUTCOMES

Why C3?

- Nova Scotia Health leadership and the Government of Nova Scotia embarked on a learning journey to better understand healthcare workers' key barriers around **access to care, patient flow, discharge planning, and providing timely emergency health services.**
- Provincial leaders committed to deliver on the "Action for Health" strategic plan by enhancing coordination of care, and thus, the **Care Coordination Centre (C3) emerged as a solution to some of the health system's most significant challenges.**
- The goal of C3 is to **provide a collaborative, data-driven resource with real-time information to support provider decision-making and to escalate and prioritize challenges.**

Expected Provincial Outcomes



Improved Patient
Experience



Transparency in Health System
Capacity



Integration of Information
Systems



Efficient Administrative
Processes



Reduced Wait Times for
Patients



Efficient Use of Health System
Resources



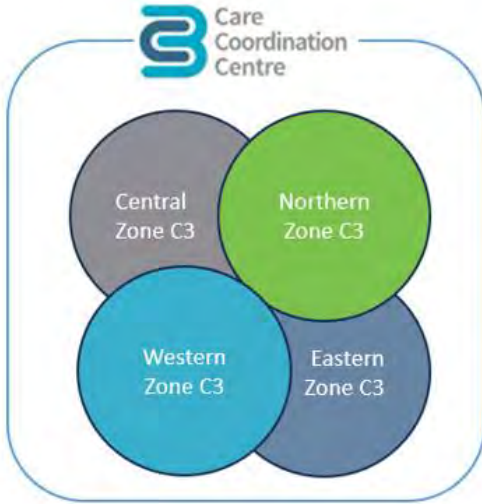
Reduction in Manual & Paper-
Based Processes



Efficient Patient Transitions in
Care

C3 OPERATING MODEL: CONNECTING 4 REGIONAL ZONES

The Care Coordination Centre is a program to manage and enable efficient patient access & flow across the province and is a fundamental shift in healthcare delivery for Nova Scotians.



Shared Mission

Efficient + coordinated patient flow, centred on the patient

Enabling Technology

GE HealthCare Command Center tech for real-time decision support

Provincial Collaboration

Shared governance forums and methods of collaboration & support

Standard Ways of Working

Clinical workflows, ops processes, escalation pathways, SOPs

Team Co-Location

Interdisciplinary teams co-located in physical ops centres

Culture Shifts

Shifting mindsets to data transparency and real-time access, data-driven decisions

HOW C3 WAS IMPLEMENTED: PROVINCIAL TEAM

C3 was deployed via collaboration between provincial planning & engagement, technical implementation, and clinical adoption efforts. The project's success was driven by the close collaboration between the three key areas.

Planning Team & PMO

→ QEII & Provincial Planning:

Support to executive leads in the ongoing development of the program rollout, evaluation, and strategic advice

→ Established Project Governance:

Designed project implementation governance structures, roles, accountabilities, working groups and teams

→ Developed Project Plan:

Created and lead strategic PMO, implementation plan, track monitor and manage project scope, timelines, risks, issues and decisions

→ Engagement & Communications:

Coordinated and supported zone onboarding and ongoing engagements to ensure C3 was being communicated across the province.

→ Infrastructure Readiness:

Manage the physical requirements for C3 (e.g., room reconfigurations, IT equipment, furniture) and coordinated with NSH to complete C3's infrastructure installation

Technical Implementation

→ Interface & Data Exchange:

Identified root causes and resolved data issues / gaps related to NSH source systems and data transfers.

→ Privacy Assessments & Approvals:

Monitored progress for source systems undergoing approval with the Architecture Review Board and update relevant privacy policies.

→ Support & Operational Readiness:

Served as partners to NSH IMIT group toward the technical go lives of each Tile. Developed the necessary release processes, support model

Clinical Implementation

→ Workflows & SOPs:

Mapped current and future-state workflows for Tiles at QEII and provincial sites. Supported in identifying priority SOPs that need to be amended.

→ Learning & Training Approach:

Provided training plans and materials to training leads on all Tiles. Supported Zones as they execute provincial training.

→ Change Engagement

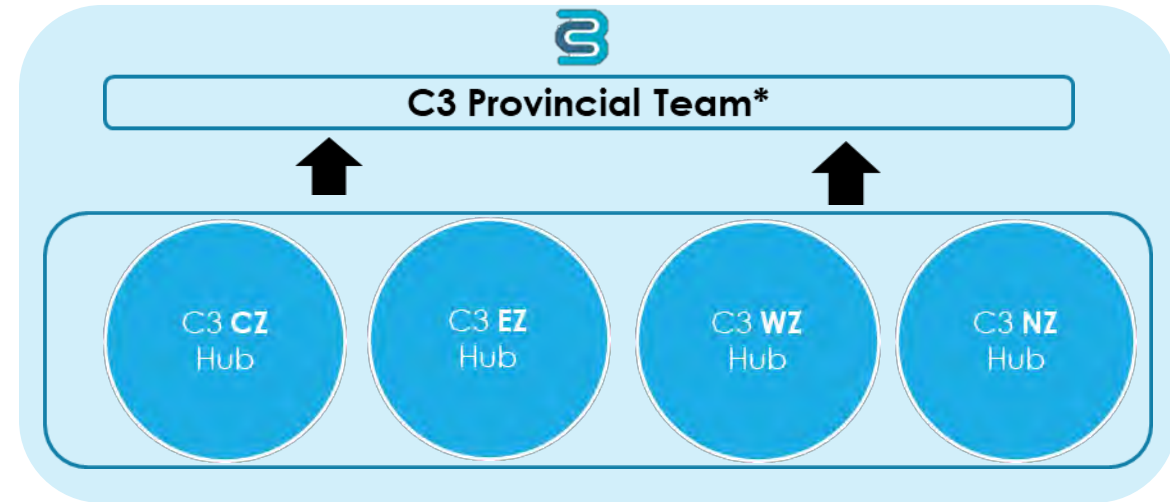
Supporting at each site the integration of the technology into daily workflows, leading change management plan and approach as well as outcomes monitoring



C3 PROVINCIAL STRUCTURE

The four Zone hubs work directly with one another to facilitate patient flow, with the provincial team enabling pan-provincial flow and addressing escalations

- Regardless of C3 / A&F team physical location, **each Zone functions as a unified C3 hub** to coordinate access and flow for the Zone; **overseen and supported** by the provincial C3 team
- For example, the EZ hub is composed of operations centres at St. Martha's, Cape Breton Regional, and sometimes virtual locations. This group together makes up EZ's virtual "hub" that share processes and resources, with CBRH Hub operating as the principal EZ Hub.
- **Each Zone adapted the C3 operational model** to their regional context, meaning that team composition may vary
- **Provincial C3 Team monitors, supports, and prioritizes** provincial patient flow movements in collaboration with Zone Access and Flow teams.
- Provincial C3 Team serve as a **point of escalation** where Zone support is needed.



Zone "Hubs" direct flow within their Zone. Across the province, Zone and provincial C3 teams collaborate on efficient and coordinated provincial patient access and flow.

Zone	C3 Operations Centres
CZ	QEII HI, DGH
EZ	CBRH, St. Martha's
NZ	Aberdeen, CRHCC, CEHHC
WZ	YRH, VRH, SSRH

C3 TECHNICAL IMPLEMENTATION RETROSPECTIVE

Background

The Nova Scotia Health (NSH) Care Coordination Center (C3) uses real-time data to coordinate the access and flow of patients throughout the NSH healthcare system.

C3 software works cohesively by pulling data from 9 different clinical source systems to provide real-time operational, clinical, and logistical oversight to coordinate the access and flow of patients.

CHALLENGES

Aging & siloed technical systems resulting in inefficiencies, additional costs and delays

Data quality issues due to non-standardized workflows, quantity of source systems and data types

Timeline constraints limited time to consult with source system vendors and address data gaps and technical issues

IT resource constraints multiple competing priority projects and limited availability from internal technical SMEs and vendors

User Access management complex matrix required to ensure Privacy requirements accommodated for diverse user roles

SUCESSESS

Implementation of provincial command centre solution within a short timeline

Collaboration with clinical, technology and business stakeholders instrumental to address interface and workflow updates

Prioritization of defects, enhancement requests, and Tile functionality in parallel with scheduled releases

Successfully adopted the MVP product notion as part of the agile implementation methodology and was used effectively to achieve project milestones

Formation of operational technical support team, governance and processes to ensure solution sustainability

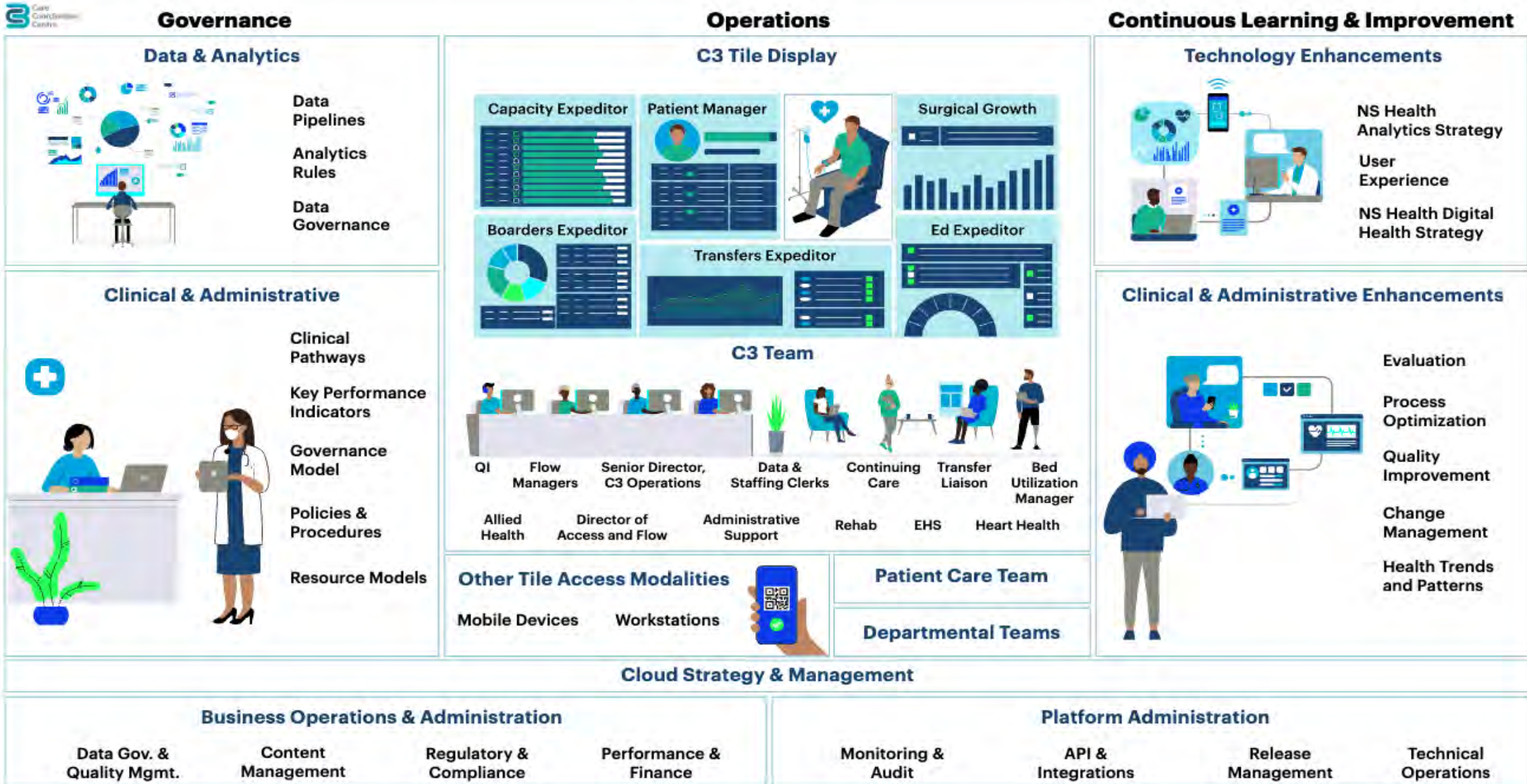
FUTURE CONSIDERATIONS

Build in additional contingency time to allow for consultation with key partners as well as product defects and enhancement requests.

Cross Functional teams (Technical and Clinical) earlier on to ensure technical and clinical workflows are both considered.

Test Environment ensure test environment is implemented to reduce product defects, increase quality and user satisfaction

C3 PROGRAM OVERVIEW



COMMAND CENTRE ANALYTICS

Technology supporting decision making



Intake Manager

Who is coming in, and who is here that needs a bed?
Who is transferring back?



Capacity Expediter

What is the current bed status, and where will I have problems later?
Where are the system pressures?



Patient Manager

What tasks are patients waiting for, what is preventing progression?



Transfers

Which patients are coming in, and where can we place them?



Boarders

Which patients need beds?
Which are ready to move, and what's stopping them?



ED Expediter

How much pressure is the ED facing, and how do I prioritize who needs care?



Surgical Flow

Who has surgery in the next 15 days, and what is the post-op bed demand?

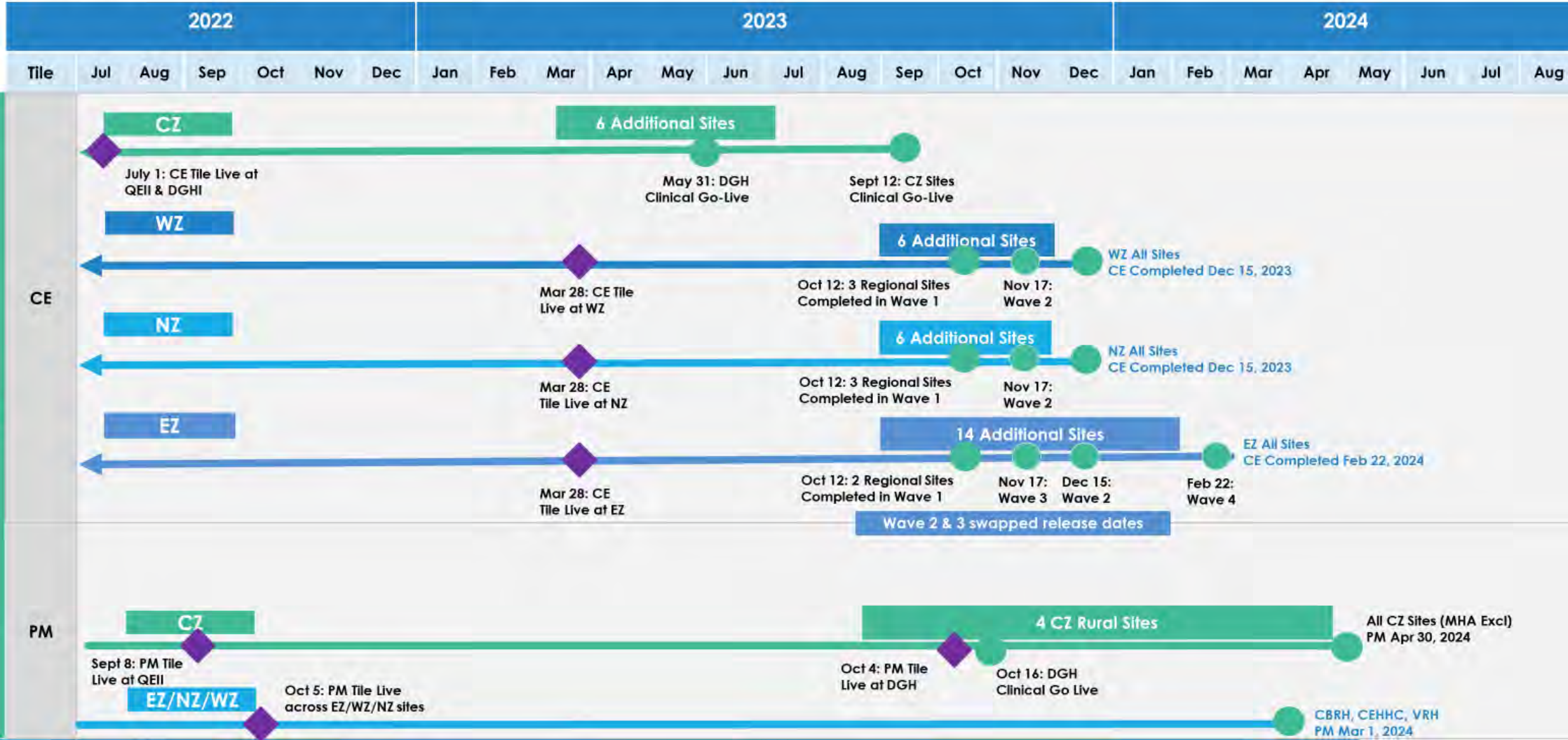
PROVINCIAL IMPLEMENTATION MILESTONES

Legend

- Technical Go-Live (Purple Diamond)
- Clinical Go-Live (Green Circle)



Tiles were implemented outside of QEII throughout 2023 and early 2024. CE was rolled out in a waved approach due to the volume of sites.



CAPACITY EXPEDITER TILE

CAPACITY EXPEDITER SYSTEM														Profile Provincial >		
Grouping	Nova Scotia				Central			Eastern			Northern			Western		
All	AVAIL NET	AVAIL CAP	CENSUS OCC*	IN OUT	AVAIL CAP	CENSUS OCC*	IN OUT	AVAIL CAP	CENSUS OCC*	IN OUT	AVAIL CAP	CENSUS OCC*	IN OUT			
Total	-30 18	-41 1304	1310 103%	0 5	39 694	654 95%	-1 0	39 364	324 94%	-3 4	-67 504	571 116%	-4 3			
Intensive Care Unit	17 18	8 53	44 84%	0 0	3 23	20 86%	0 0	3 18	15 83%	0 0	3 20	17 105%	-1 0			
Intermediate Care	7 7	6 64	55 90%	0 0	0 3	3 133%	0 0	1 6	5 100%	0 0	0 4	4 100%	0 0			
Acute	-32 -23	-30 751	750 104%	0 5	18 420	401 96%	0 0	14 192	178 102%	-1 4	-34 277	311 115%	-3 0			
Sub-Acute	10 13	1 155	154 99%	0 0	6 78	72 92%	0 0	5 66	61 93%	-1 0	-2 115	117 101%	0 2			
Rehab	8 9	1 67	66 98%	0 0	2 40	38 95%	0 0	4 38	34 89%	0 0	1 25	24 96%	0 1			
Mental Health	56 56	46 214	168 78%	0 0	8 66	58 89%	0 0	3 18	15 83%	0 0	-1 28	29 103%	0 0			
Emergency	-149 -123	-63 0	63 0%	0 0	-35 0	35 0%	0 0	-7 0	7 0%	0 0	-44 0	44 0%	0 0			
PACU	-10 -2	-10 0	10 0%	0 0												
Direct Admit	0 0	0 0	0 0%	0 0				0 0	0 0%	0 0						

Patient Manager

1 Filter Applied. Location

PATIENT	DATE	DISPOSITION FLAGS	INCOMPLETE TASKS	COMPLETED TASKS	NOTES
<p>***** ***** NHI-73 Age: [redacted] Account Number [redacted] Attending BARRY, SEAN Cut Code NRS Service NEUROSURGERY Diagnosis WOUND INFECTION Referring Facility OWN HOME/EN ROUTE</p> <p>ESCALATE</p>	<p>7304-01 ADMIT 15 Days Ago 2023/07/10 16:27 EDD +6 Days Jul 31</p>	<p>Community w/ NSH CC Community Nursing Community w/ No Supports Required</p>	<p>PT Consult ID MD Consult</p>	<p>OT Consult Insert PICC Line CT Scan Procedure History OR Waitlist</p>	<p>07/25/2023 14:52 Brunet, Jaklynn: OR July 18th--R VP shunt removal and L VP shunt insertion still periods of drowsiness, unsteady, not eating much needs new PICC (ripped...</p>
<p>***** ***** NHI-73 Age: [redacted] Account Number [redacted] Attending ALANT, JACOB Cut Code NRS Service NEUROSURGERY Diagnosis HEAD TRAUMA Referring Facility OWN HOME/EN ROUTE</p> <p>ESCALATE</p>	<p>7306-01 ADMIT 58 Days Ago 2023/05/28 18:39 EDD +5 Days Jul 30</p>	<p>Community w/ NSH CC Home Support Rehab ABI</p>	<p>Dietitian Consult PT Consult trach wean</p>	<p>SW Consult OT Consult Wound Care Consult CT Scan MRI Scan US Scan ID MD Consult Rehab MD Consult Family Meeting</p>	<p>07/25/2023 14:55 Brunet, Jaklynn: overload of feeds through G tube - put on hold and now a slow restart, was vomiting through trach and now likely an aspiration pneumonia - o...</p>
<p>***** ***** NHI-73 Age: [redacted] Account Number [redacted] Attending WEEKS, ADRIENNE Cut Code NRS Service NEUROSURGERY Diagnosis HYDRO Referring Facility COBEQUID COMM HEALT</p>	<p>7306-02 ADMIT 67 Days Ago 2023/05/19 01:45 EDD +6 Days Jul 31</p>	<p>LTC w/ NSH CC (on waitlist/existing resident)</p>	<p>PT Consult SW Consult</p>	<p>OT Consult Continuing Care Consult CT Scan NM Scan XR Scan OR Waitlist</p>	<p>07/06/2023 12:09 Brunet, Jaklynn: Plan: ALC</p>

PATIENT MANAGER TILE: POTENTIAL REPATS PROFILE

PATIENT MANAGER UNIT VIEW Rounding View Expediter View U Profile Potential Re... > [Icons]

2 Filters Applied. Nearest Hospital AND Location

UNIT	ROOM-BED	DISPOSITION	NEAREST HOSPITAL	UNIT	ROOM-BED	DISPOSITION	NEAREST HOSPITAL
73	7318-01	<input type="radio"/> Tx: home hos...	Colchester East Hant...	81	8124-02	<input checked="" type="checkbox"/> Declassified - ...	Out Of Province
73	7318-02	<input type="radio"/> Community w...	Dartmouth General H...	82	8210-01	<input type="radio"/> Community w...	Dartmouth General H...
73	7322-02	<input type="radio"/> Community w...	Valley Regional Hospi...	82	8216-01	<input type="radio"/> Community w...	Eastern Shore Memo...
73	7324-01	<input type="radio"/> Community w...	Valley Regional Hospi...	82	8216-02	<input type="radio"/> Community w...	Musquodoboit Valley...
73	7326-01	<input checked="" type="checkbox"/> LTC w/NSH CC	Valley Regional Hospi...	82	8224-02	<input type="radio"/> Community w...	Eastern Shore Memo...
73	7330-03	<input checked="" type="checkbox"/> LTC w/NSH CC	Valley Regional Hospi...	82	8230-04	<input type="radio"/> Community w...	Victoria County Mem...
73	7330-04	<input type="radio"/> Community w...	Valley Regional Hospi...	82	8234-01	<input checked="" type="checkbox"/> LTC w/NSH CC	New Waterford Cons...
73	7334-01	<input type="radio"/> Community w...	Valley Regional Hospi...	82	8238-02	<input checked="" type="checkbox"/> LTC w/NSH CC	Dartmouth General H...
73	7338-01	<input type="radio"/> Community w...	Valley Regional Hospi...	82	8269-02	<input type="radio"/> Community w...	Musquodoboit Valley...
73	7338-02	<input checked="" type="checkbox"/> LTC w/NSH CC	Musquodoboit Valley Memorial Hospital	82	8270-01	<input type="radio"/> Community w...	Colchester East Hant...
731	7368-01	<input checked="" type="checkbox"/> LTC w/NSH CC	Nearest Regional Hospital in Home Zone	83	8304-01	<input checked="" type="checkbox"/> LTC w/NSH CC	Aberdeen Hospital
731	7372-01	<input checked="" type="checkbox"/> LTC w/NSH CC	QEI Health Sciences Centre	83	8314-01	<input checked="" type="checkbox"/> LTC w/NSH CC	Yarmouth Regional H...
731	7376-01	<input type="radio"/> Tx: home hos...	Musquodoboit Valley...	83	8340-01	<input type="radio"/> Community w...	Colchester East Hant...
731	7379-01	<input checked="" type="checkbox"/> Tx: home hos...	Valley Regional Hospi...	84	8400-01	<input type="radio"/> Community w...	Colchester East Hant...
74	7404-01	<input type="radio"/> Community w...	Musquodoboit Valley...	84	8410-01	<input type="radio"/> Community w...	Colchester East Hant...
74	7434-03	<input type="radio"/> Community w...	Dartmouth General H...	84	8420-01	<input type="radio"/> Community w...	Colchester East Hant...
7LN	7205-02	<input type="radio"/> Community w...	Out Of Province	84	8420-02	<input type="radio"/> Community w...	Colchester East Hant...
81	8108-04	<input type="radio"/> Community w...	Dartmouth General H...	84	8440-01	<input type="radio"/> Community w...	Colchester East Hant...
81	8114-01	<input checked="" type="checkbox"/> Community P...	Out Of Province	9LN	9201-01	<input type="radio"/> Tx: home hos...	Hants Community H...

731-7376-01

Nearest Hospital Details

Patient Home Zone

Central

Nearest Hospital in Home Zone

Musquodoboit Valley Memorial Hospital

Nearest Regional Hospital in Home Zone

QEI Health Sciences Centre

9201-01

Tx: home hospital (within zone) Details

General Comment

Last Modified By Newcombe, Maggie At
08/15/24 13:17 | 3d 21h Ago

on waitlist for hants

INTAKE MANAGER TILE

INTAKE MANAGER ROUNDDING VIEW | Rounding View | Expediter View | U | P | Profile Inpatient Tx to ...

1 Filter Applied. Location

PATIENT	DATES	EXPECTED DATE	FLAGS	NOTES	BED STATUS	EHS STATUS
***** ***** DGH-D54	ADMIT 13 DAYS AGO 2024/08/15 21:04 EHS REQUEST TODAY 2024/08/28 08:05	EHS EDA IN 2 DAYS 2024/08/30 14:00	♿	08/28/2024 12:09		Transfer Requested
Age: 5365-01 Destination Facility: VG HCN: [REDACTED] Attending: MALEC, ALEKSANDRA Cut Code: FM Service: FAMILY MEDICINE Diagnosis: HYPERCALCEMIA Transfer From Facility: Dartmouth General ... Referring Facility: OWN HOME/EN ROUTE Nearest Hospital: EHS Priority: Routine Local Scheduled Intake Category: EHS Transfer	IP Acute EDD IN 3 DAYS 2024/08/31 00:00			EHS to pick up Friday morning		

ESCALATE

***** ***** CBR-CB.CCU	ADMIT 5 DAYS AGO 2024/08/23 22:04 EHS REQUEST TODAY 2024/08/28 09:35	EHS EDA IN 2 DAYS 2024/08/30 10:00	♿			
Age: [REDACTED] Destination Facility: NHI HCN: [REDACTED] Attending: MORRISON, PAUL Cut Code: SURG.CB Service: GENERAL SURGERY REGIONAL Diagnosis: CHOLECYSTITIS? Transfer From Facility: Cape Breton Regional Referring Facility: Nearest Hospital: EHS Priority: **CALL ON HOLD** Intake Category: EHS Transfer	IP ICU EDD IN 2 DAYS 2024/08/30 00:00					

Inpatient Tx to QEII

INTAKE MANAGER PANE VIEW | Rounding View | Expediter View | U | P | Profile Transfers

TRANSFERS TO ED 7

CURRENT LOCATION	HCN	ARRIVAL MODE	EHS REQUEST DATE
		♿	Today
		♿	Today
LifeFlight Base		♿	Yesterday
LifeFlight Base		♿	Yesterday
		♿	Today
Arborstone Enhance...		♿	Today

SAME DAY ADMITS 93

WAITLIST EDA DATE	ALIAS	CUT CODE	HCN
In 3 Days	***** , *****	INS	
In 3 Days	***** , *****	INS	
In 2 Days	***** , *****	INS	
In 3 Days	***** , *****	INS	
In 7 Days	***** , *****	INS	
In 3 Days	***** , *****	INS	
In 7 Days	***** , *****	INS	
In 2 Days	***** , *****	INS	

EHS INPATIENT TRANSFERS 33

CURRENT LOCATION	HCN	EHS EDA DATE	EHS STATUS
ARRIVAL MODE		EHS REQUEST DATE	BED STATUS
IWK		In 2 Days	DEPART SCENE
N/A		6 Days Ago	
South Shore Regiona...		Today	TRANSFER REQUES...
N/A		Yesterday	

EHS TRANSFER BACKS 20

CURRENT LOCATION	HCN	FLAGS	EHS STATUS
Arborstone Enhance...		♿	TRANSFER REQUES...
NHI-QEII		♿	TRANSFER REQUES...
		♿	TRANSFER REQUES...
Oakwood Terrace		♿	TRANSFER REQUES...
Valley Regional Hosp...		♿	TRANSFER REQUES...

DIRECT ADMITS 11

DESTINATION FACILITY	ALIAS	WAITLIST EDA DATE	BED STATUS
ROOM-BED	HCN	WAITLISTED	EHS STATUS
VG	***** , *****	In 6 Days	
N/A		6 Days Ago	
VG	***** , *****	Today	5B SOL-01
N/A		8 Days Ago	

Transfers 145 of 219 Patients

FINDINGS FROM THE C3 BENEFITS ANALYSIS

Positive signs in key access and flow metrics at sites to date indicate promising impacts of C3 on NSH's strategic outcomes. C3 is one of many initiatives and is a contributor for the success of access and flow.

CONTRIBUTED TO IMPROVEMENT <small>Metrics showing significant improvement since C3</small>	40+% Reduction in ambulance offload time (90th% 274 mins to 164 mins)	30+% Reduction in time to transfer (90th% 71 to 50 hrs)	Elimination of bed-related cancellations Fewest cancellations in 2+ years	20% increase in EDD Accuracy 2 Days Before Discharge since implementing PM Tile	37% increase in EDD Accuracy at Discharge since implementing PM Tile	96% Estimated Date of Discharge Compliance
POSITIVE TREND <small>Metrics trending upward since C3</small>	% ALTERNATE LEVEL OF CARE DAYS Better understood via C3 and ALC Designation project	BED TURNOVER RATE increasing at regional site med units	% DISCHARGED ON WEEKENDS Trending up overall	UNPLANNED READMISSIONS WITHIN 28 DAYS Consistently outperforming target	AVERAGE INPATIENT LENGTH OF STAY Consistent	% DISCHARGED BEFORE NOON Trending up overall
AREAS FOR IMPROVEMENT <small>Metrics showing decline since C3 to be monitored further</small>	ED wait times for patients not meeting targets	Acute Occupancy Rates increasing across NSH	% of patients in Acute Units with LoS greater than 28 Days not meeting target	% Conservable Bed Days and ALOS steady across NSH	4.2% Increase in inpatient days (11,957) Q1FY25 v Q1FY24 Equivalent of adding 32 beds to the system	% Discharged Before Noon not meeting target

LEGEND

Improvement Sustained

Positive Trend

Areas for Improvement

EVALUATION OUTCOMES

97%

EDD Provincial Compliance

66.7%

Integration of Information
systems

64.3%

Efficient use of health
system resources

56.75%

Reduction in manual &
paper-based processes

Positive Trends

- ↑ Bed turnover rate increasing
- ↑ Efficient administrative processes
- ↑ Efficient patient care transitions
- ↓ % ALC days decreasing
- ↓ Inpatient length of stay decreasing
- ↓ Unplanned readmits within 28d decreasing

Feedback

"The transparency is great... we are finally engaged in the same game and trying to work together"

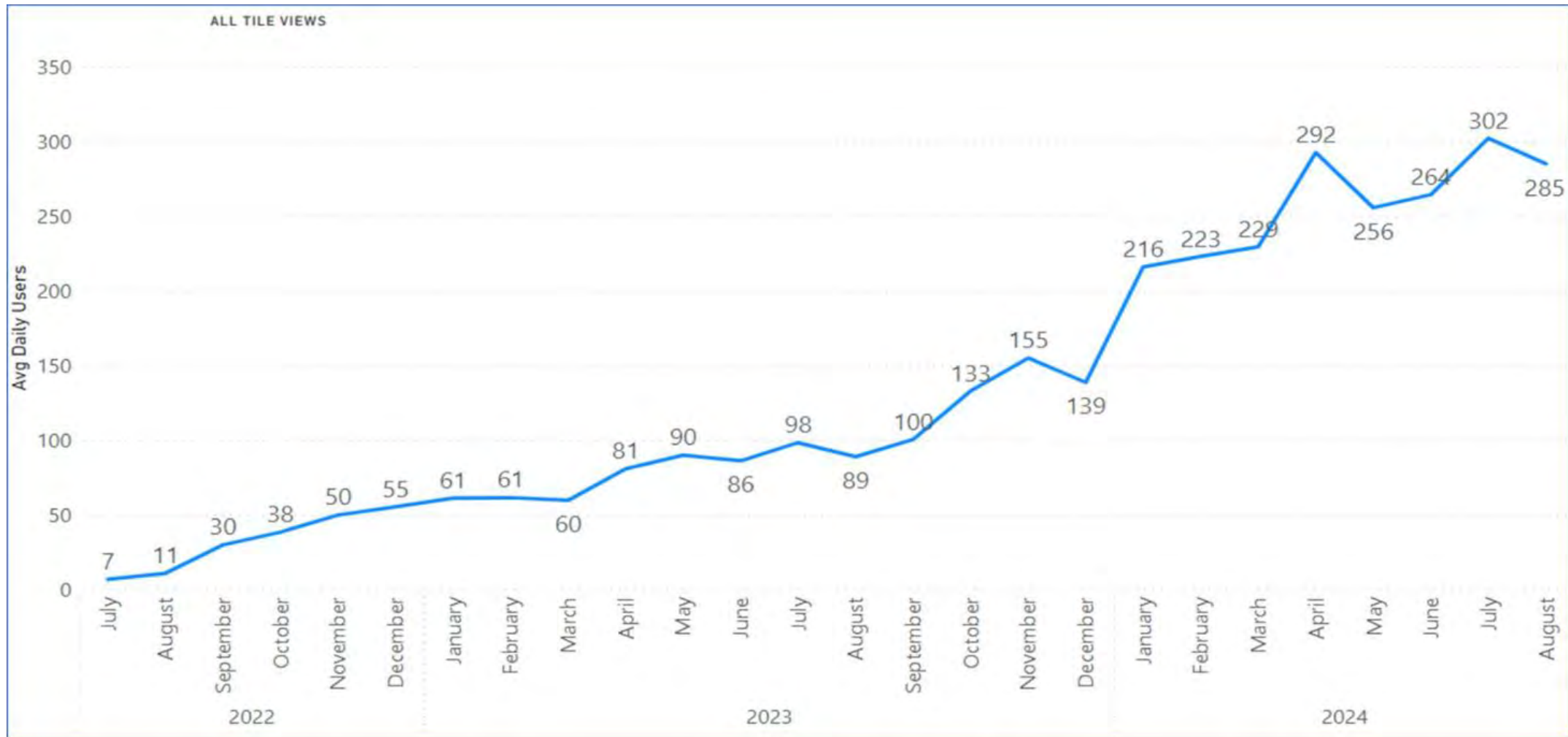
"Patient Flow... can focus on expediting flow rather than making phone calls"

"Groundbreaking for patient care"

*Other parallel initiatives may contribute to these improvements and cannot be solely attributed to C3.

TILE ACCESS

Please see the updated tile access for all sites and tiles below.





Thank you!