



ER Notification

IM Committee Project Evaluation

Evaluation Completed by:
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May 2006



Project Definition

- Project Lead: Heather Garnett
- Project Sponsors:
 - Deb Davies (Manager, Toronto General Hospital Emergency)
 - Stacey Daub (Director, Toronto CCAC Client Services)
 - Carol Millar (Manager, Toronto CCAC Client Services)
- Problem Statement:
 - A solution was required to improve communication between the Toronto Community Care Access Centre (CCAC) and Toronto General and Toronto Western Emergency (TGH & TWH ER) for current Metro Toronto CCAC Clients and potential CCAC Clients presenting at the Emergency department.

Project Objectives

- ✓ Identify patients not routinely referred who would benefit from CCAC or other community services
- ✓ Decrease the chance of re-admission to the ER
- ✓ Identify existing CCAC clients who may require adjustment to current service plan
- ✓ Move appropriate patients out of the ER earlier by CCACs initiating assessments prior to the discharge decision
- ✓ Reduce admissions to in-patient units
- ✓ Eliminate the need for ER staff to manually identify and initiate referrals
- ✓ Provide consistency in case-finding
- ✓ Improve communication regarding CCAC assessment status to ER staff
- ✓ Allow for referral identification 24/7

ER Notification Workflow

Patient presents in ER & is registered in Misys CPR

ER Notification: Check if patient is an Active CCAC client

Not Active

ER Notification: Check patient profiling

Active Client

No Match

End

Profile Match

Send notification to CCAC Blackberry & ER Whiteboard

CCAC Care Coordinator updates ER Whiteboard & ER Notification to indicate "assessment complete"

Patient is discharged from ER or admitted to IP

Implementation Approach

- Go-Live dates
 - TGH October 12, 2005 TWH December 5, 2005
 - January 9, 2006 – Dedicated Care Coordinator resources available
- Project management parameters
 - Time: All development and implementation timelines were met
 - Budget
 - Design/Dev&Test Phase (May-Aug 2005) – on budget
 - Implementation Phase (Sept 2005 – Feb 2006) – extra 1.2 FTE for 2 months to continue user support, monitor profiling criteria & outcomes, testing
 - Evaluation Phase (Mar-Apr 2006) – on budget
 - Quality
 - ✓ Implementation of auto-profiling component
 - ✓ Implementation of secure messaging
 - ✓ Enhancements to ER Whiteboard
 - ✓ Refinement of auto-profiling criteria
 - ✗ Implementation of “Active CCAC Client” component – awaiting CARE interface

Operational Readiness

- MOU complete and executed
- Project management no longer required
- Support group prepared to continue support on an ongoing basis
 - HP Service Desk
 - SIMS IDEAS
 - Toronto CCAC training will be done by Toronto CCAC staff ~ training material has been distributed
 - ER staff training will be done by ER staff

Key Conclusions

- Significant increase in CCAC referrals from participating Emergency departments
- Development of profiling criteria required intensive and ongoing reviews of data
- Dedicated CCAC Care Coordinator resource is required for Emergency dept 7 days a week
- New process/application provides benefits to patients

ER Notification Volumes/Usage

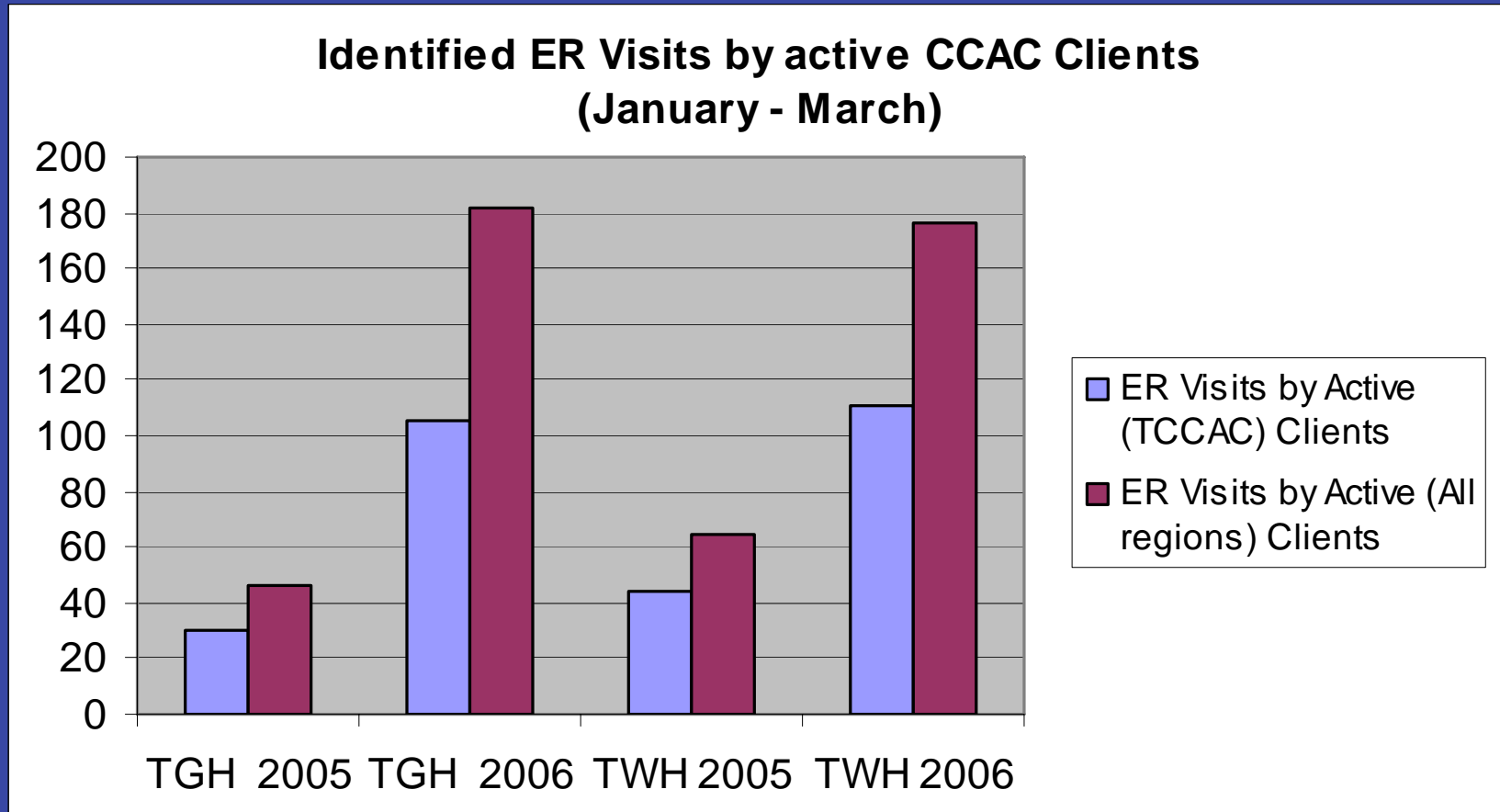
CCAC ER assessments per ER visit

There was an increase in the percentage of ER patients who received a CCAC assessment.

- 2005 January – April
 - TGH average 1.3%
 - TWH average 1.18%

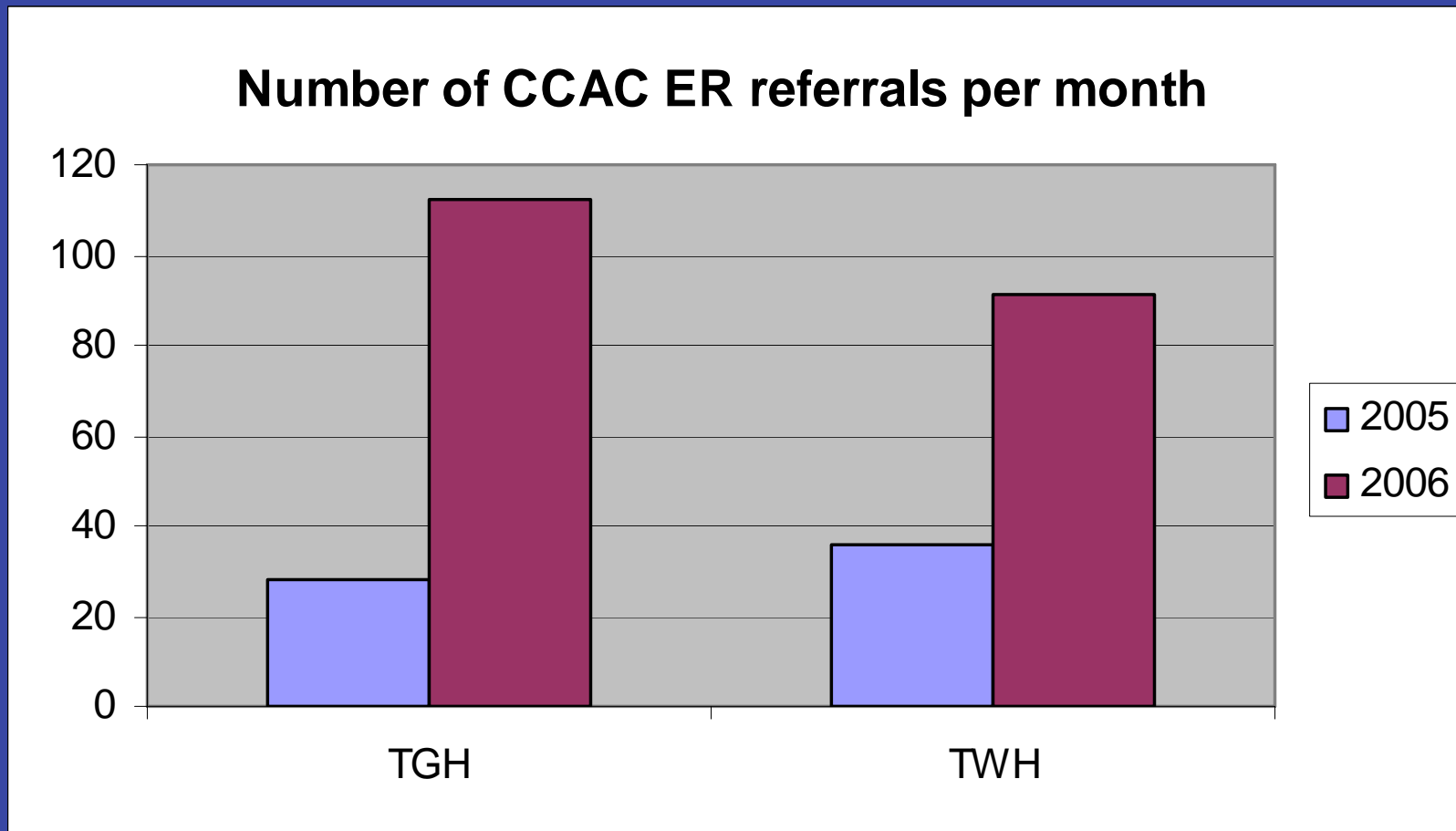
- 2006 January – April
 - TGH average 4.93%
 - TWH average 2.78%

Identifying existing CCAC Clients



There has been an increase in identified 'active CCAC' clients in ER, due to ER Notification auto-profiling process. (This number will increase once CARE interface is in place.)

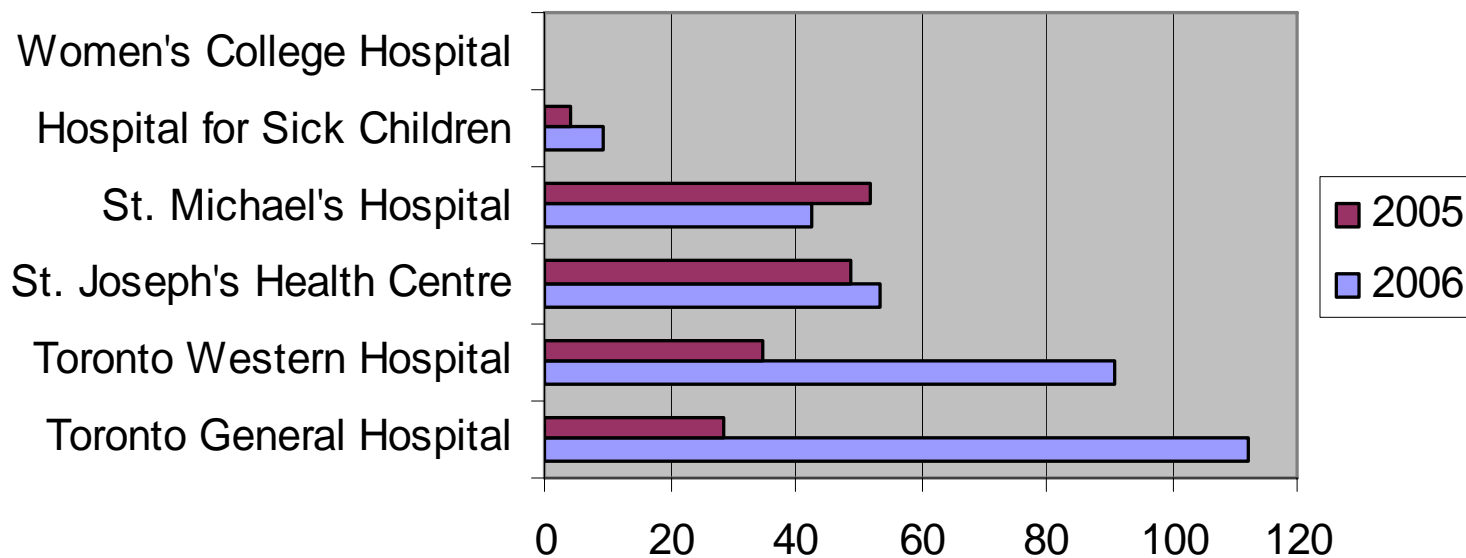
CCAC Statistics - ER Referrals



There has been a significant increase of CCAC referrals from ER due to ER Notification.

Review of CCAC referrals at multiple hospitals

**Number of CCAC ER referrals per month
(January/February/March)**

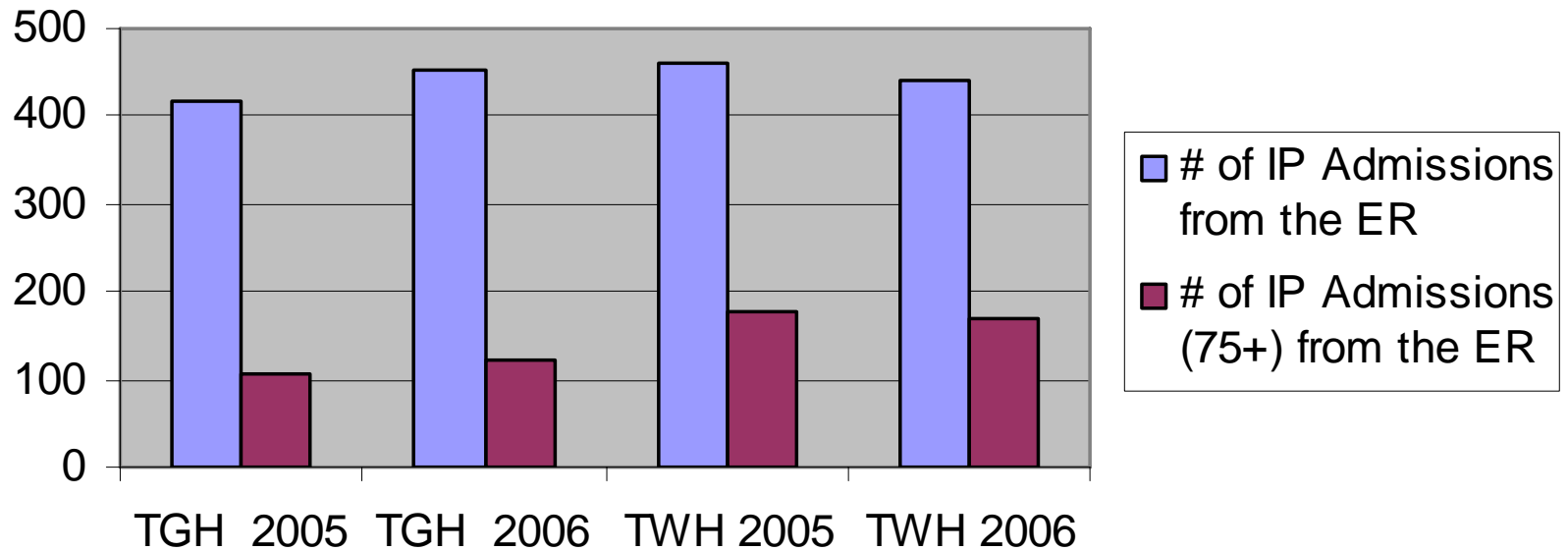


There has been a significant increase of CCAC referrals from TGH and TWH ER's due to ER Notification.

Impact to Hospital

IP Admissions from the ER

**Average monthly Number of
In-Patient admissions from the ER**



There is no reason to assume that there has been any impact on the number of inpatient admissions from the ER due to the ER Notification.

Review of admissions from ER to specific in-patient units

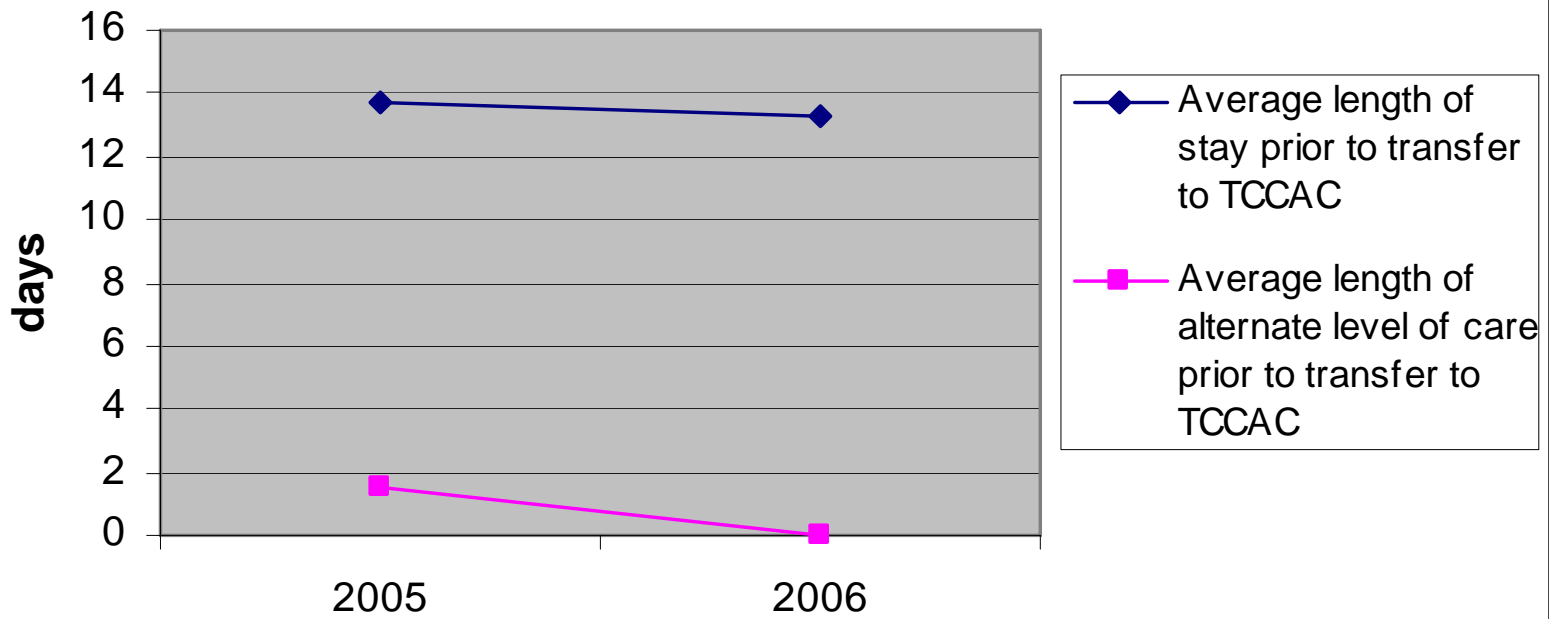
Toronto Western Hospital - Admits Via ED								
		Toronto Western Hospital				Toronto Western		
Unit	Unit Description	Jan-05	Feb-05	Mar-05	Apr-05	Jan-06	Feb-06	
3EC Psych	712769010 EPAU Emerg Psych	21	16	3	8			
CCU FB3	TW Acute Coronary Care Unit	5	8	7	76	14		
EMERG TW	TW Emergency	67	89	95	21	29		
FA 5	FA 5 Fell Pavillion Neurosurgery	24	21	29	60	25		
FA 6	FA 6 Fell Pavillion Surgical Short Stay	72	57	65	48	57		
FA 8	FA 8 Fell Pavillion Internal Medicine	49	48	39	32	65		
FA 9	FA 9 Fell Pavillion Ortho/Rheum	17	19	36	44	38		
FB 3	FB 3 Fell Pavillion Cardiology/Internal Medicine	35	37	44	25	51		
FB 5	FB 5 Fell Pavillion Neurology	23	31	39	74	39		
FB 8	FB 8 Fell Pavillion Internal Medicine	69	75	72	9	85		
FB 9	FB 9 Fell Pavillion Ortho/Spinal	32	20	26	2			
FB5 MDU	FB5 Medical Day	2	0	5	4			
NEUROSTEP	Neuro Step Down Unit					2		
TW MSICU/NIC	TW MSICU NICU	9	4	9	6	1		
TW NSICU	712406110 TW NeuroICU	9	3	3	8	4		
Total		434	428	472	417	410		
Toronto Western Hospital - Admits Via ED 75+ Years								
		Toronto Western Hospital				Toronto Western		
Unit	Unit Description	Jan-05	Feb-05	Mar-05	Apr-05	Jan-06	Feb-06	
3EC Psych	712769010 EPAU Emerg Psych	1	0	0	0			
CCU FB3	TW Acute Coronary Care Unit	2	3	3	3	4		
EMERG TW	TW Emergency	30	39	34	28	14		
FA 5	FA 5 Fell Pavillion Neurosurgery	5	1	3	5	5		
FA 6	FA 6 Fell Pavillion Surgical Short Stay	6	10	20	16	7		
FA 8	FA 8 Fell Pavillion Internal Medicine	27	32	26	28	32		
FA 9	FA 9 Fell Pavillion Ortho/Rheum	7	8	16	14	18		
FB 3	FB 3 Fell Pavillion Cardiology/Internal Medicine	19	20	20	23	20		
FB 5	FB 5 Fell Pavillion Neurology	5	7	9	4	8		
FB 8	FB 8 Fell Pavillion Internal Medicine	32	40	42	46	41		

There is no reason to assume that there has been any impact on the number of inpatient admissions from the ER due to the ER Notification.

(Some portions of data are outstanding)

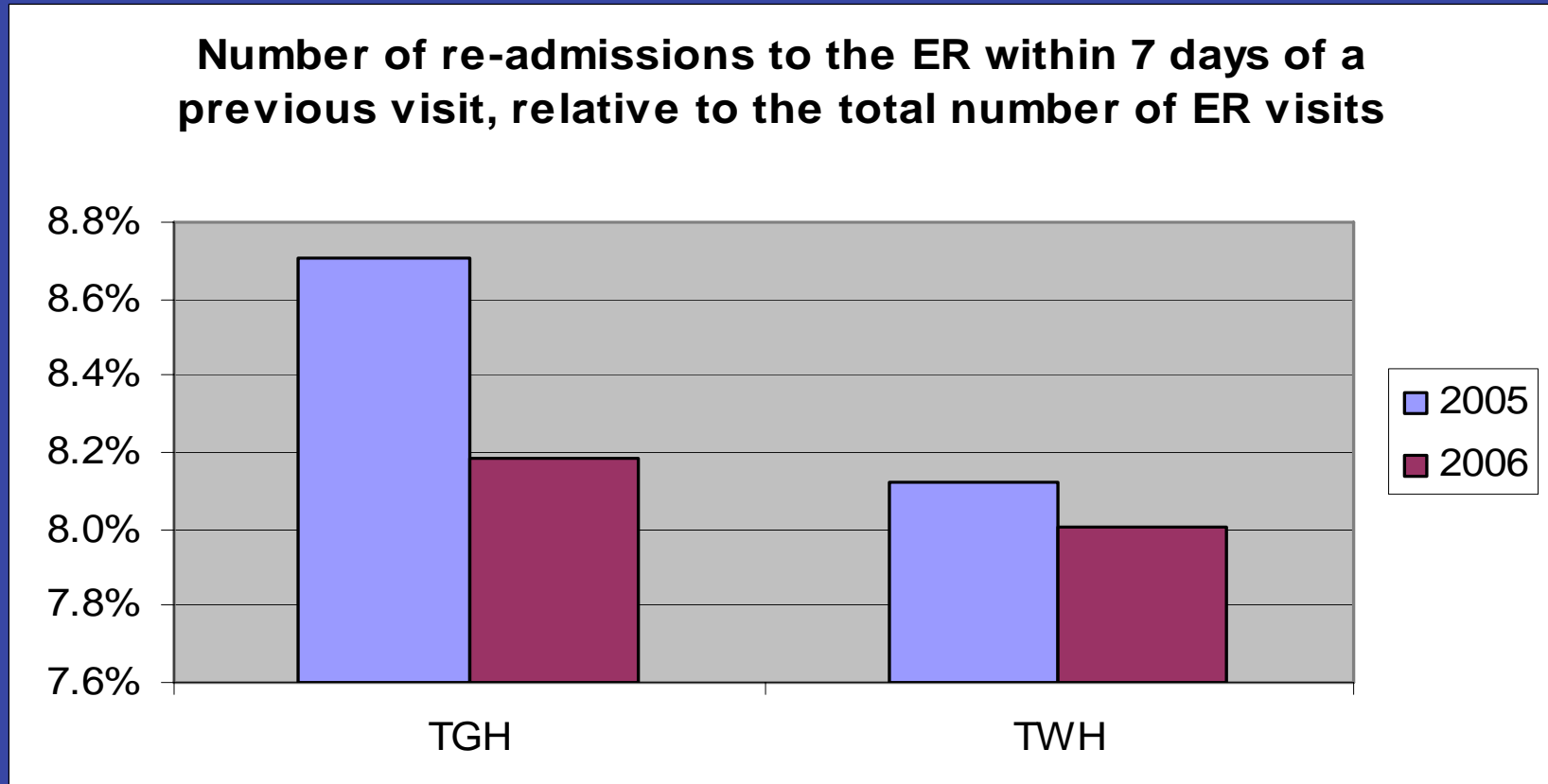
ER visits: LOS and ALC

Patient length of stay and alternate level of care days at UHN



There is no reason to assume that there has been any impact on patient's length of stay or alternative level of care days due to the ER Notification.

Repeat ER visits ~ return within 7 days



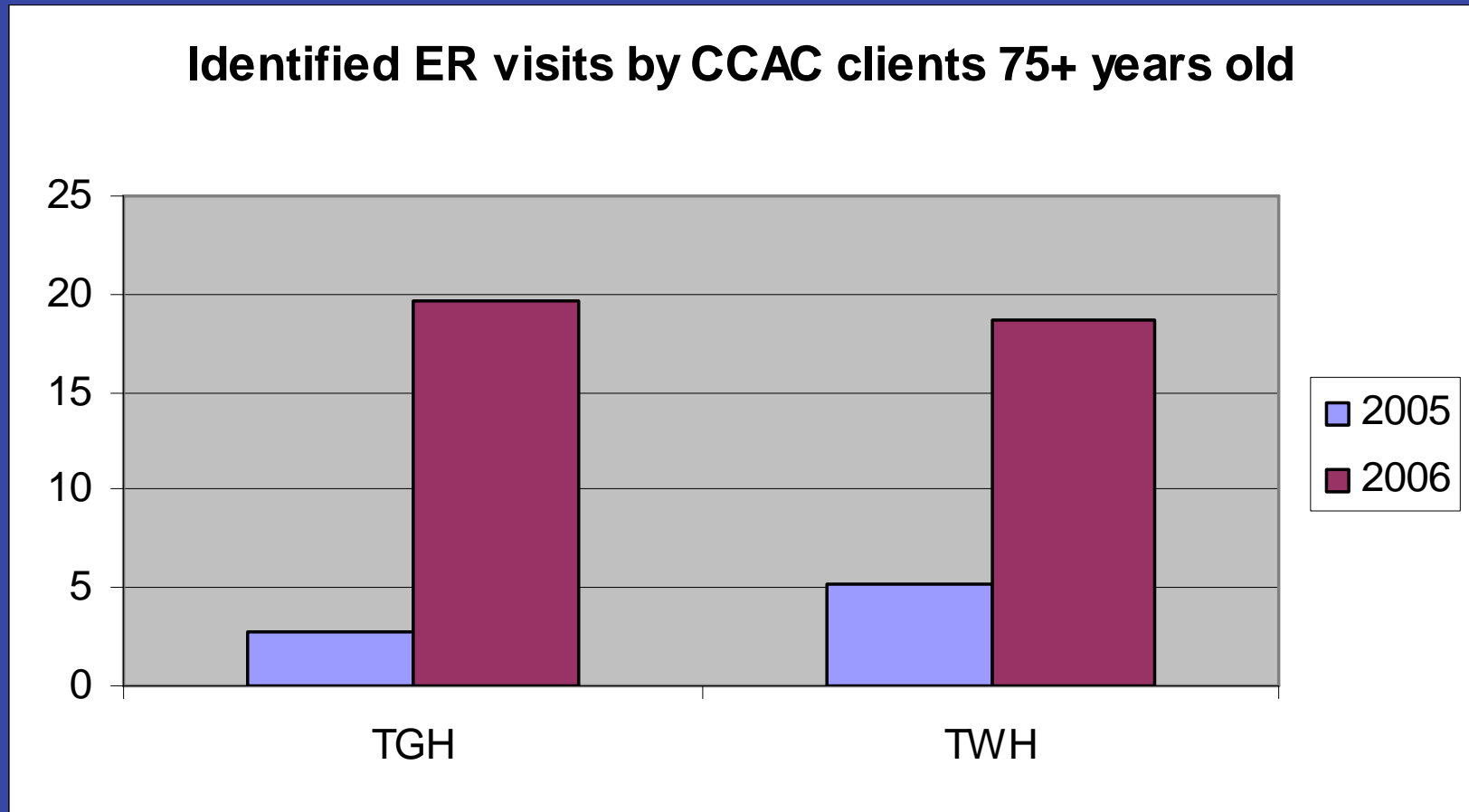
There has been a small decrease in the number of re-admissions to the ER within 7 days of an ER or IP visit. This cannot be wholly contributed to ER Notification, however it is anticipated that this number will decrease further as ER Notification continues.

Impact to Frail Elderly Population

Frail-Elderly patients identified for community services in ER

- Pre-Implementation *< 5% of ER patients 75+ years of age were identified for CCAC assessment*
- Post-Implementation *~ 100% of ER patients 75+ years of age re identified for CCAC assessment*

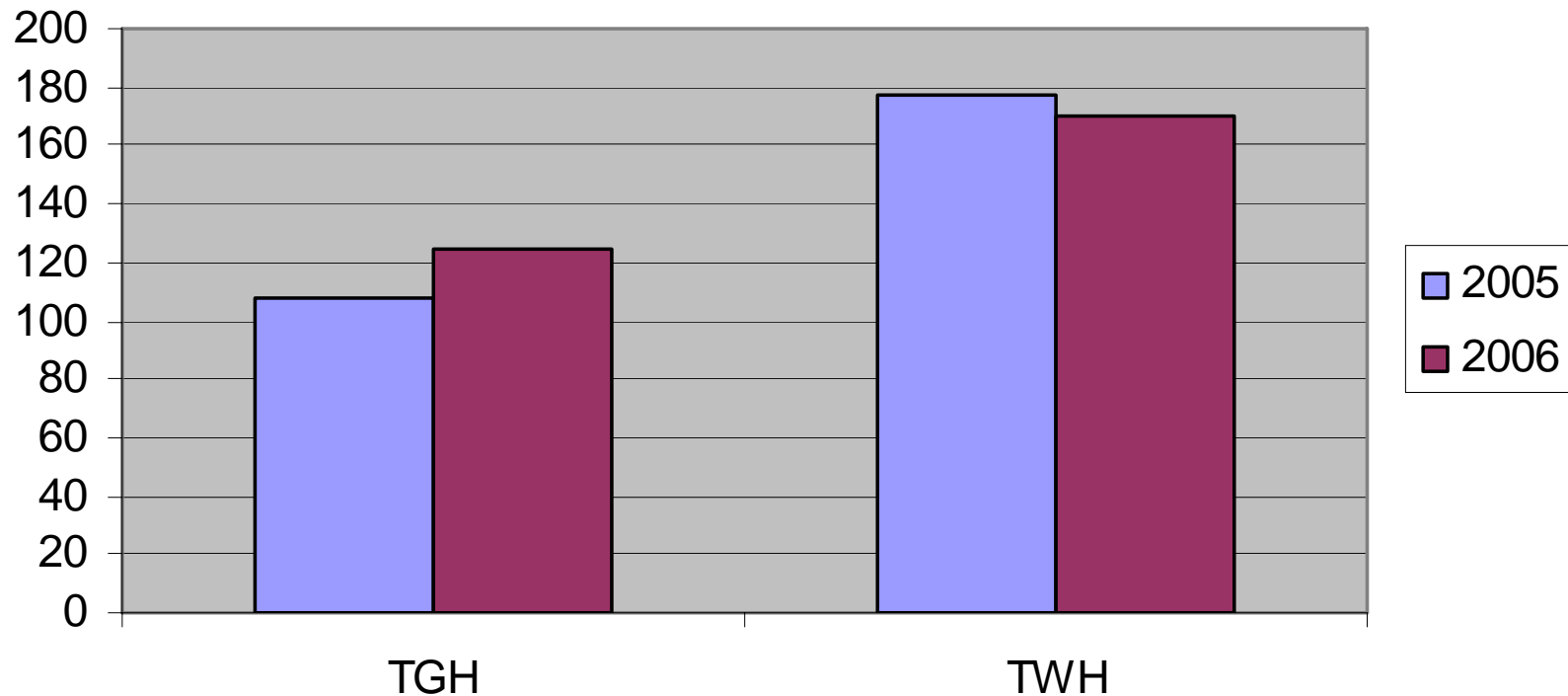
Identifying active CCAC Clients in the frail/elderly population visiting the ER



*There has been an increase in identified 'active CCAC' clients in ER who are 75+ years of age, due to ER Notification auto-profiling process.
(This number will increase once CARE interface is in place.)*

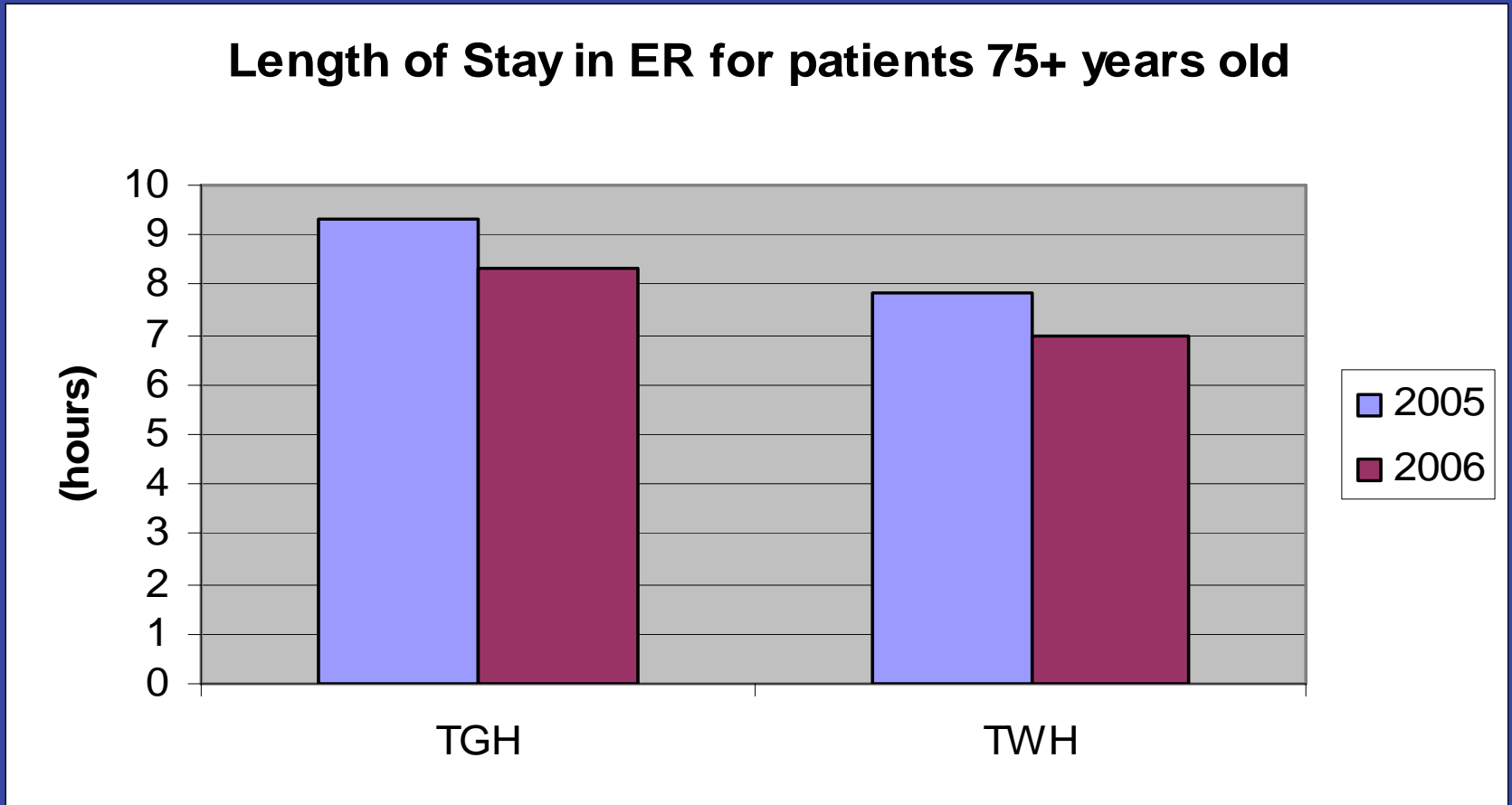
IP Admissions from the ER for patients over 75

ER visits for patients 75+ who are admitted as In-Patients



There is no reason to assume that there has been any impact on the number of inpatient admissions from the ER due to the ER Notification.

Length of stay in ER for patients over 75 years of age

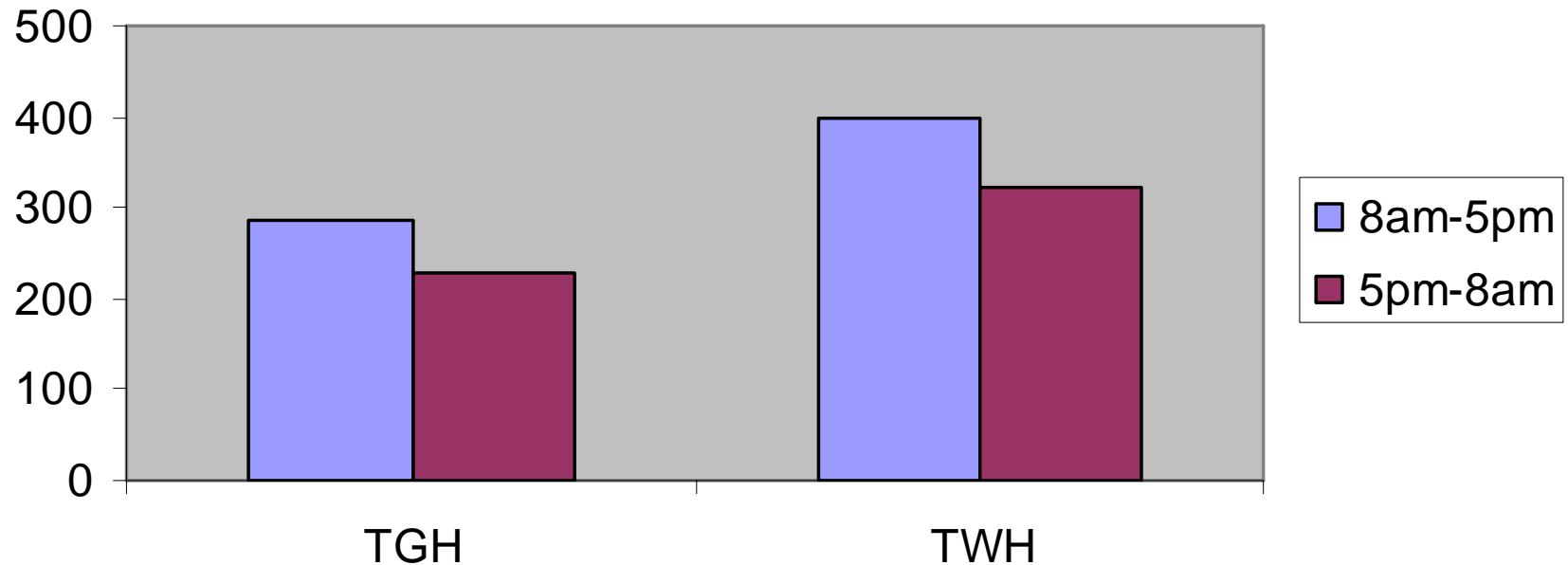


There is no reason to assume that there has been any impact on patient's length of stay in ER due to the ER Notification.

System Tracking Functionality

24/7 notifications, and the resulting post-discharge follow-up, results in more patients with access to CCAC services

Triage time of ER patients identified for CCAC assessment (Average/month, Jan-Mar 2006)



44% of patients identified for CCAC assessment arrive at the ER outside regular CCAC working hours

Most common presenting complaints in patients identified for CCAC assessment

Toronto General Hospital	
Shortness of breath	16.9%
Chest pain	8.3%
Abdominal pain	8.1%
General weakness	7.7%
Syncope / Pre-syncope	6.8%
Lower extremity pain	3.8%
Nausea and/or vomiting	3.6%
Medical device problem	3.4%
Fever	3.4%
Dizziness / Vertigo	3.2%
Seizure	3.1%
Palpitations / Irregular heart beat	3.1%
Localized swelling/redness	2.7%
Confusion	2.3%
Post-operative complications	2.1%

Toronto Western Hospital	
Shortness of breath	17.0%
Lower extremity pain	6.7%
Abdominal pain	6.5%
Chest Pain-cardiac features	6.4%
Localized swelling/redness	5.6%
Extremity weakness/symptoms of CVA	5.5%
Syncope/presyncope	5.2%
Vertigo	4.5%
General weakness	4.4%
Seizures	4.4%
Upper extremity pain	4.0%
Laceration/puncture	3.1%
Urinary retention	2.7%
Back pain	2.4%
Confusion	2.4%

of Notifications (from ER Notification) vs. # of referrals (as tracked by Care Coordinators)

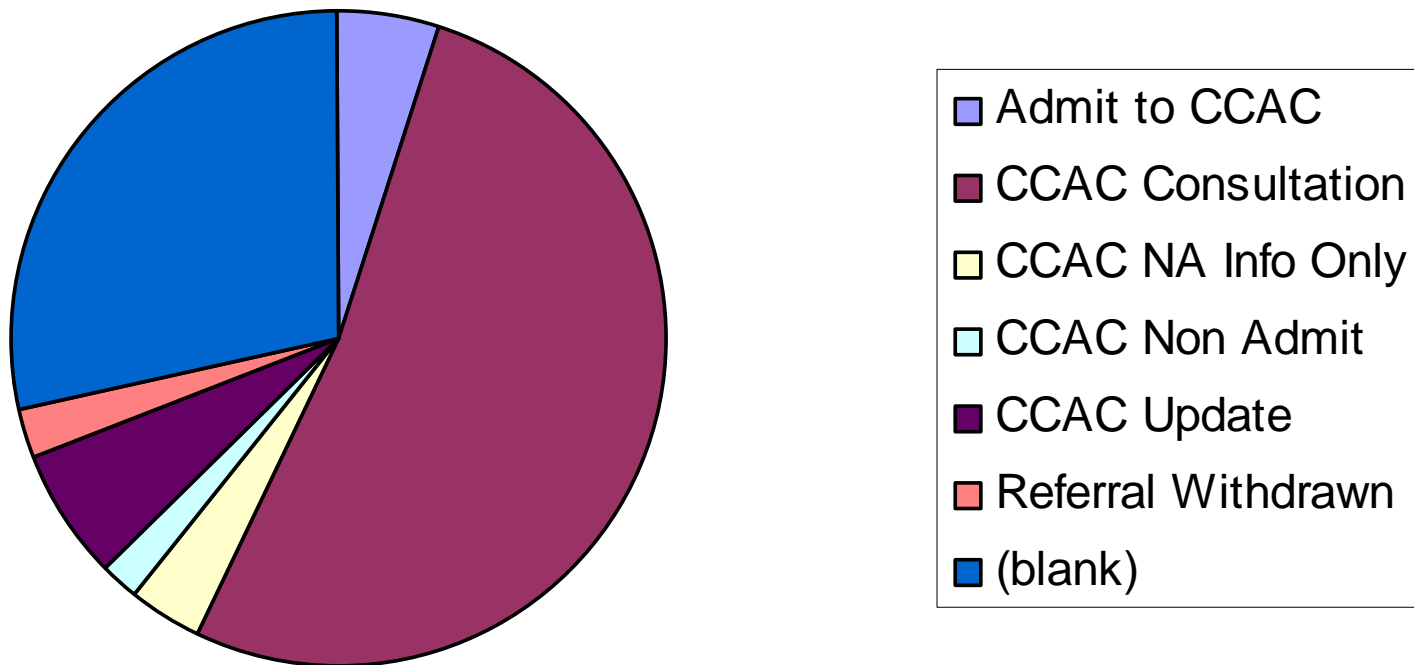
CCAC ER Notification trigger outcomes	Toronto General Hospital				Toronto Western Hospital			
	Jan-06	Feb-06	Mar-06	Apr-06	Jan-06	Feb-06	Mar-06	Apr-06
Admit to CCAC	33	17	26	32	23	14	36	26
CCAC Consultation	229	196	377	383	407	365	409	476
CCAC NA Info Only	26	10	19	12	1	4	7	37
CCAC Non Admit	11	11	9	8	44	9	15	46
CCAC Update	18	26	53	32	21	16	29	56
Referral Withdrawn	10	21	5	2	15	90	33	8
(blank)	126	195	121	158	158	216	249	110
# of Notifications (referrals) sent	453	476	610	627	669	714	778	759
# of ER Referrals from CCAC stats	135	102	154	135	122	71	133	191

Not all ER Notifications to Toronto CCAC are tracked as CCAC referrals in CCAC Hospital Logs

Outcomes

~ as logged by Care Coordinator on ER Whiteboard

TGH - CCAC ER Notification trigger outcomes

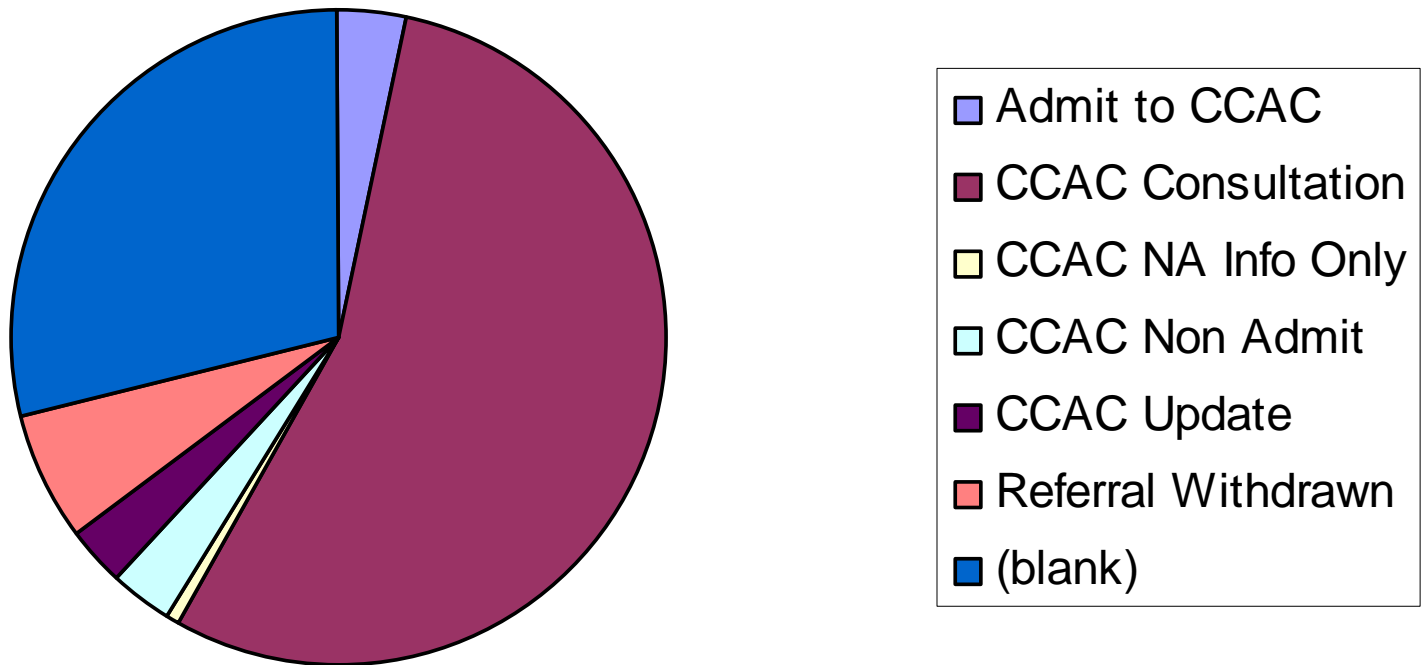


TGH: Data from January to April 2006

Outcomes

~ as logged by Care Coordinator on ER Whiteboard

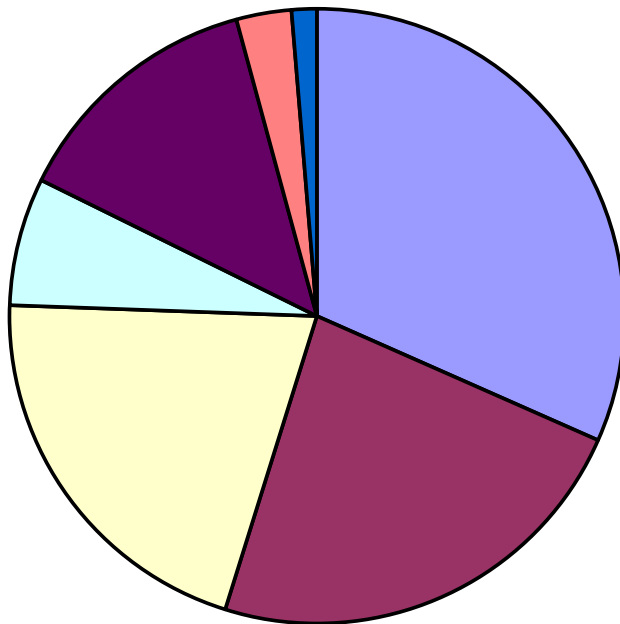
TWH - CCAC ER Notification trigger outcomes



TWH: Data from January to April 2006

Why were patients 'triggered'?

TGH - Criteria met for auto-profiling

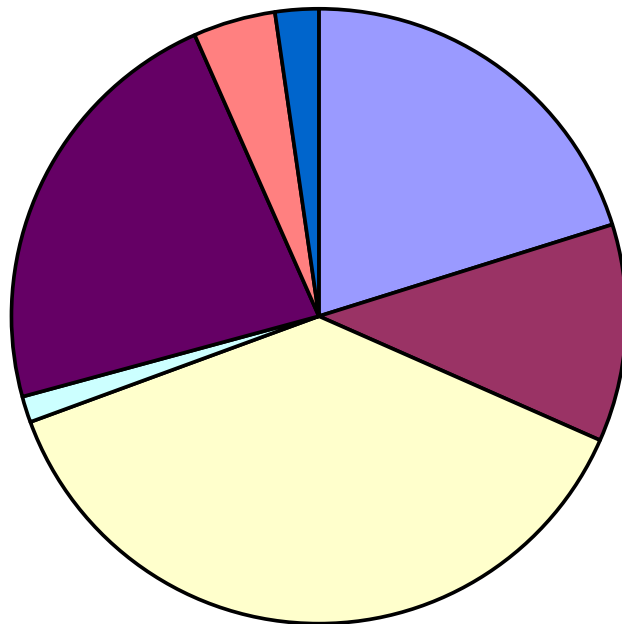


- Age only (75+)
- Previous Visit within 7 days
- Presenting Complaint only
- Age & previous visit
- Age & presenting complaint
- Previous visit & presenting complaint
- all three

TGH: Data from January to April 2006

Why were patients 'triggered'?

TWH - Criteria met for auto-profiling

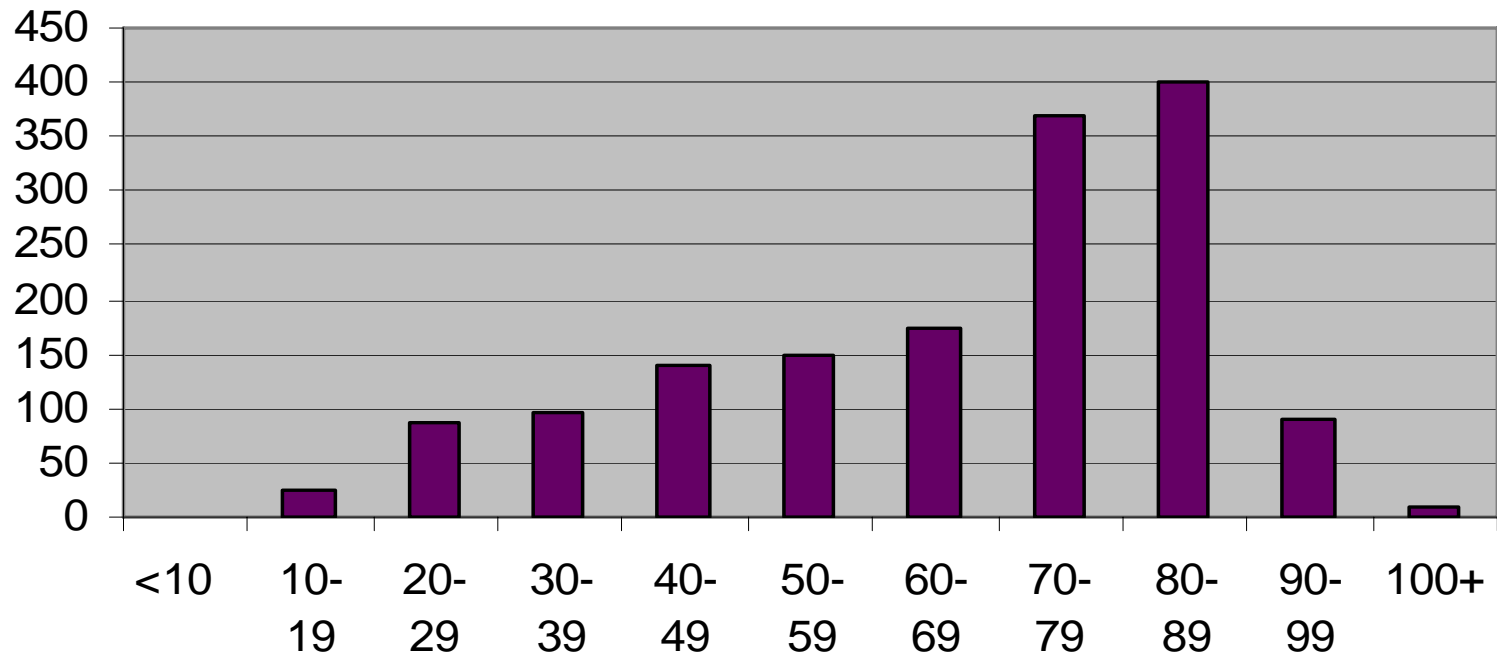


- Age only (75+)
- Previous Visit within 7 days
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- Age & previous visit
- Age & presenting complaint
- Previous visit & presenting complaint
- all three

TWH: Data from January to April 2006

Similar profile of age ranges for ER notification at TGH & TWH

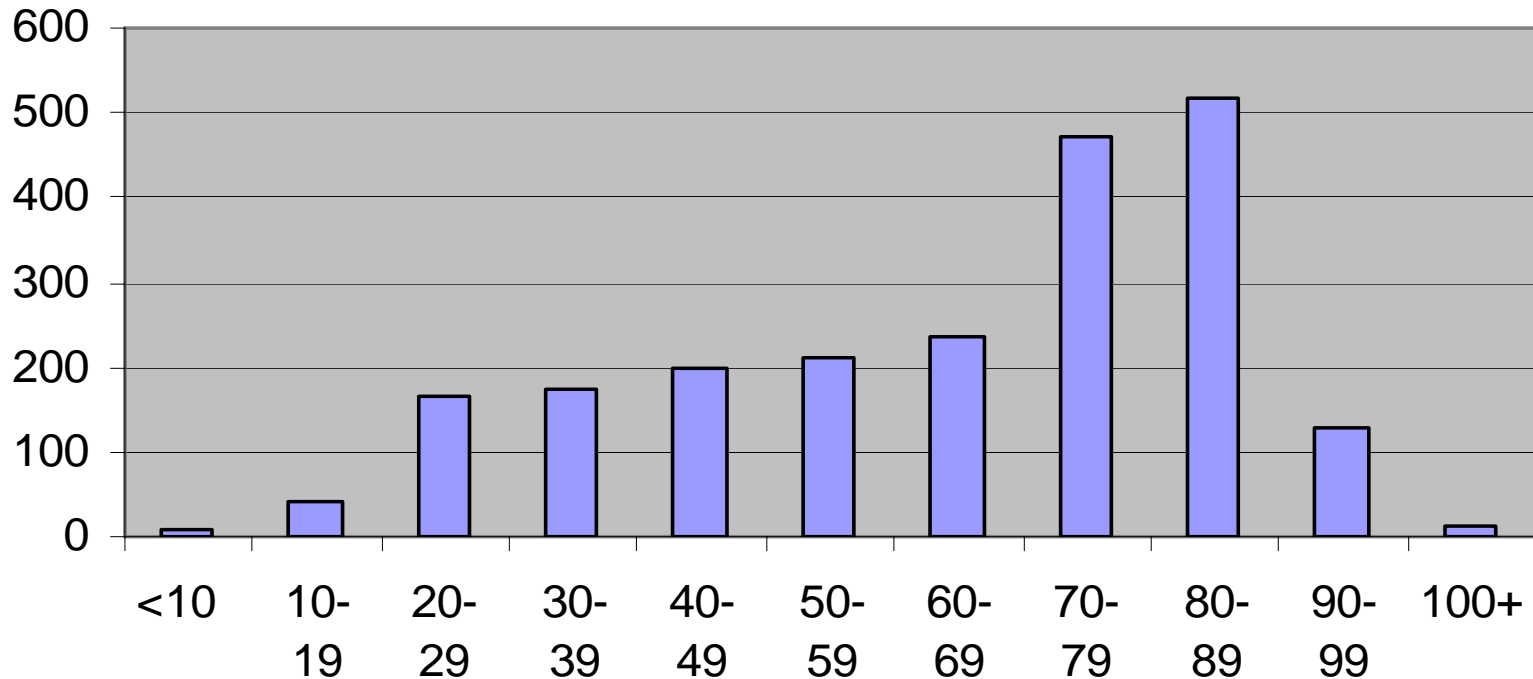
TGH - Age ranges for triggered ER patients



TGH: Data from January to April 2006

Similar profile of age ranges for ER notification at TGH & TWH

TWH - Age ranges for triggered ER patients



TWH: Data from January to April 2006

Workload

Review of changes to workload

- ER Staff
 - Eliminated the need for ER staff to manually identify and initiate referrals ~ usually done by pager
 - Still requires ER staff to complete/sign CCAC Medical Referral Forms
- CCAC Staff
 - Significant increase in number of referrals for CCAC Care Coordinators (Requires Care Coordinators to follow-up on all notifications sent from ER Notification system.)
 - Requires Care Coordinators to monitor BlackBerry, and update ER Whiteboard for each referred patient

Success Stories!

Impact to the Patients

Patient Scenario #1

- Patient presented to ER with “constipation”
 - Notification triggered by presenting complaint and age
- ER staff resolved the presenting complaint
- CCAC assessment found:
 - Patient diagnosed with metastatic ovarian CA 3 months previously
 - No family or community supports
 - Taking tylenol for pain (cause of constipation)
- Patient Outcome:
 - Admitted for CCAC services – nursing 2 x week initially
 - Intervention for symptom control, pain and disease management

Patient Scenario #2

- 90-year old patient presented to ER with “weakness”
 - Notification triggered by presenting complaint and age
- ER staff resolved the presenting complaint with follow-up tests and new medications
- CCAC assessment found:
 - Patient had multiple falls at home – never addressed
 - Has private help
- Patient Outcome:
 - Admitted for safety assessment at home to assess for unsafe environmental factors and mobility aids and nursing for medication teaching
 - Patient “excited” that CCAC had followed-up - had no idea that services existed
 - Outcome – 2 visits with modifications to the home for safety

Patient Scenario #3

- Patient of the CCAC presented to ER with vomiting
 - Notification triggered by presenting complaint, age and repeat visits
- CCAC assessment found:
 - Current CCAC services - personal support services
 - History –
 - Accessed ER with vague complaints 6 times in past month
 - Cardiac problems – not participating in medical follow-up and physician will not do surgery until loses weights and increases activity
- Patient Outcome:
 - Update to District Coordinator re. visits to ER
 - Home visit made to review service plan
 - Added OT for activation and establishing routine
 - Linked with adult day program
 - No further visits to the ER (2 months)

Review of Blackberry device

Pros

- Care Coordinators are notified no matter where they are in hospital (except where wireless signal must be turned off)
- Allows the Care Coordinator to bring the information with them as they move around – they are not required to write things out, or constantly refer to email on a specific workstation for patient details.
- Care Coordinators would like to continue to use the devices

Cons

- Increases learning curve
- Notifications also accessible via UHN Webmail and ER Whiteboard (ie. Blackberry may not be necessary if Care Coordinator remains in ER)
- Some technical difficulties with synching blackberry has resulted in need for extra support for users



Ongoing Indicators

- Reporting database has been developed to produce simple reports from ER Notification logs
 - Reports to be distributed monthly to: SIMS PMO for Indicator Report, ER and TGH CCAC Managers, Toronto CCAC Senior Management
- Current reporting includes:
 - Total # of notifications
 - Tracking of 'Outcomes' of notifications
 - Age ranges for auto-profiled patients
 - Auto-profiling criteria matches
 - Most common Presenting Complaints for patients who were referred to Toronto CCAC via ER Notification

Next Steps

- Outstanding issues to be addressed
 - Identifying all “active CCAC” Clients presenting in ER (available when interface is available to populate eMPI)
- Future opportunities or phases
 - Other ER’s when Care Coordinator staffing can be confirmed
 - Sending notifications to inpatient units when patient is admitted to hospital – potentially through IP Unit Whiteboard
 - Sending notifications directly to a patient’s District Care Coordinator when an “active CCAC” client presents at ER ~ requires CARE/eMPI interface, and possibly integration with CCP
- Areas for ongoing CCAC and/or ER investigation:
 - Ongoing review and analysis of indicators and reports (effort shared by CCAC Managers and ER Managers)
 - Blackberry evaluation – CCAC can re-evaluate use of BlackBerry devices and decide whether they should continue to be used.

Lessons Learned

- What was done well?
 - Joint effort by Toronto CCAC, TGH and TWH Emergency Departments & SIMS!!
 - Accessibility to data from ER Notification system provided valuable information for refining profiling criteria
 - Integrating ER Notification system into existing ER Whiteboard (did not introduce new technology for ER staff)
 - User support
- What could be done better?
 - Confirming Care Coordinator resources prior to ER Notification go-lives
 - Acquiring CARE interface prior to go-live