



Medical Access to Service Project – Calgary Zone

Phase 2— Outcome Assessment – Final Report

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Alberta Health and Wellness

Alberta Wait Times Management Initiative

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In medicine, as in any profession, we must grapple with systems, resources, circumstances, people—and our own shortcomings, as well. We face obstacles of seemingly unending variety. Yet somehow, we must advance, we must refine, we must improve....

Betterment is a perpetual labor. The world is chaotic, disorganized, and vexing, and medicine is nowhere spared that reality.... Yet still, to live as a doctor is to live so that one's life is bound up in others' and in science and in the messy, complicated connection between the two. It is to live a life of responsibility. The question, then, is not whether one accepts the responsibility. Just by doing this work, one has. The question is, having accepted the responsibility, how one does such work well.

Atul Gawande, Better: A Surgeon's Notes on Performance (2007)

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Glossary of Terms

ABPM	24-hour Ambulatory Blood Pressure Monitoring
AEP	Ambulatory eRecord Program
AHS	Alberta Health Services
AHW	Alberta Health and Wellness
AIM	Access-Improvement-Measures
AMA	Alberta Medical Association
ANOVA	Analysis of Variance
ARP	Alternate Relationship Plan
CAT	Central Access & Triage
CCDMC	Complex Chronic Disease Management Clinic
CHR	Calgary Health Region
CSHA	Canadian Study of Health and Aging
DCM	Data Collection Matrix
DHCC	Diabetes, Hypertension & Cholesterol Centre
DI	Diagnostic Imaging
ED	Emergency Department
EMIS	Electronic Medical Information System
EMR	Electronic Medical Record
FMC	Foothills Medical Centre
GI	Gastroenterology
GIM	General Internal Medicine
GP	General Practitioner
HIV	Human immunodeficiency virus
IHI	Institute for Health Improvement
IT	Information Technology
LPN	Licensed Practical Nurse
MAS	Medical Access to Service
MCC	Maternity Care Clinic
PDSA	Plan, Do, Study, Act
PCN	Primary Care Network
PCP	Primary Care provider
PLC	Peter Lougheed Centre
PRS	Priority Referral Scores
RD	Registered Dietitian
RGH	Rockyview General Hospital
RMS	Record Management System
RN	Registered Nurse
SAC	Southern Alberta HIV Clinic
SCM	Sunrise Clinical Manager
TBCC	Tom Baker Cancer Centre
TNA	Third Next Available Appointment
TOP	Toward Optimized Practice
UCMC	University of Calgary Medical Clinic
WCWL	Western Canada Waiting List

Executive Summary

Context

The Department of Medicine & Medical Services, Department of Family Medicine, Calgary Health Region (CHR) Primary Care Networks, Department of Rural Medicine, Department of Cardiac Sciences, the Chronic Disease Management Program, Western Canada Waiting List (WCWL), and the Alberta Medical Association (AMA) collaboratively sponsored the **Medical Access to Service (MAS) Project**. The Provincial Wait Time Steering Committee provided \$4.2M to the Calgary Health Region to conduct the Project between June 2007 and March 2009. Alberta Health Services supplemented this budget in March 2009 with an additional \$1.3M and the Project was extended until March 2010.

MAS Project Goals and Activities

The purpose of the MAS Project was as follows:

To broadly engage participants in the health system to collectively improve patient access to primary care and specialized medical services and to improve service integration and communication between medical specialists, primary care physicians and the healthcare team.

The Project's four main goals and key activities include the following:

Goal #1: Re-design the referral process and create Central Intake processes across most specialized medical services

Central Access & Triage (CAT) was based on issues identified in the 2006 and 2007 Referral and Access Conferences and on the experience gained by the Division of Rheumatology in developing a central referral and intake process. It was implemented in four Divisions of the Department of Medicine, including Endocrinology, GIM, Hematology, and Respiratory Medicine. Each Division experienced a somewhat different journey in developing CAT, but apart from Respiratory Medicine, which did not fully implement a triage system, they redesigned their referral process significantly.

Goal #2: Plan and pilot a service model for patients with chronic complex needs

Complex Chronic Disease Management Clinic (CCDMC) was based on a successful chronic care service model, known as the Alfred Model, imported from Australia. The CCDMC provided an opportunity to integrate services for patients with complex needs who were often managed simultaneously by multiple specialists, were prone to multiple hospital admissions or ED usage, experienced social or psychological issues that further complicated their management, and generally were heavy users of acute care resources. It was suggested that total admissions and ED visits could be reduced as could the average length of stay and total bed days for these individuals through an integrated approach using a multi-disciplinary team, regular clinic visits and enhanced linkages to community services. The team at the CCDMC included internists, hospitalists, nurses, a pharmacist, and administrative staff.

Goal #3: Implement two Alberta Access-Improvement-Measures (AIM) collaboratives to improve access and efficiency in both primary care and specialized medical ambulatory care settings

AIM is a structured, guided, and facilitated process to support clinics in implementing improvements in their practices relative to access, efficiency, and clinical care. Clinics form improvement teams that participate in a series of collaborative learning sessions, return to their clinics between sessions to implement changes in their practices and processes, and measure the results using simple concepts and tools provided in the learning sessions. At each session, they must report back to the collective group on their experiences, successes and failures, and overall observations. Between sessions, clinics are supported by email, teleconferences, a list serve, facilitator consultations, and the preparation of monthly team reports based on the collection and analysis of various measures. While two collaborative were

offered and a third is currently under way, the evaluation focused on Calgary & Area AIM Collaborative #1 which ran from October 2007 to November 2008. Six of the 12 participating clinics were selected for inclusion in the evaluation. They included three PCN clinics—Bowmont Medical Clinic, Strathcona Family Medicine Centre, and the University of Calgary Medical Clinic (UCMC), North Hill, and three specialty clinics—Diabetes, Hypertension & Cholesterol Centre (DHCC), the Maternity Care Clinic (MCC), and the Southern Alberta HIV Clinic (SAC).

Goal #4: Determine business requirements for referral and access management for medical access to services.

A high-level plan was produced that outlined IT business requirements for CAT system support. It identified the functionality, foundational elements, and connectivity required to achieve an efficient and streamlined automated referral process. It was determined that clinics that have participated in CAT have mature business processes in place and are ready for automation. Currently, the tools and systems required to manage a single referral are both disparate and varied and include phone, fax, face-to-face interactions, paper systems and files, spreadsheets, various electronic systems and the CAT Access Database. To streamline referral performance, the plan outlined six referral steps along with the main changes required for an automated referral system and also presented a roadmap to align the implementation of changes to directories, repositories, systems, and functionality.

Evaluation Design

The purpose of the evaluation was *to assess the degree of success achieved in each of the Project's four goal areas*. An evidence-based approach was used for both the design and implementation of the MAS evaluation and the analysis of data. In 2008, an evaluability assessment was conducted to clarify the project logic model and to collaboratively develop relevant success indicators to guide data collection activities. Throughout the Project, the evaluator worked closely with program management and other stakeholders in terms of designing, conducting, and reporting the evaluation to ensure that findings were concrete and utilization-focused. Key methods included document review, development and maintenance of a practice audit database, use of pre-inception or baseline data as available, a series of key informant interviews related to each goal area, on-site observation, 29 physician interviews (8 specialists and 21 family practitioners) and 12 focus groups with participating teams, clinics and one patient group. Rigorous quantitative and qualitative data analysis methods were used and data were coded and summarized using evidence-based research procedures. Evaluation limitations and strengths were identified.

Evaluation Findings

The main research questions and evidence obtained through the evaluation are presented below.

To what extent was a Central Intake system implemented in participating departments?

CAT was fully implemented in Endocrinology, GIM and Hematology—it is now considered routine practice. The lack of an electronic scheduling system was seen as the greatest barrier to developing further efficiencies and was the reason cited as to why Respiratory Medicine did not fully implement CAT.

- 8,630 referrals were received by the four Divisions during the study period;
- Over 90% were from Primary Care (except in GIM where 28% of referrals were either an ED or an Urgent Care Clinic—this was seen as a good way to decant patients to more appropriate health services);
- The most referrals was received by Endocrinology (n=2,765), the least by Hematology (n=1,450);
- Over 90% of the referrals received were new referrals; over 80% were accepted as appropriate (GIM redirected 15% and Endocrinology did not accept 13%);
- More than half of referrals did not have a triage category attached (highest in Hematology at 76%, lowest in Endocrinology at 53%); and
- Incoming referrals with a triage category were often re-categorized (especially in GIM where referrals were frequently upgraded to Urgent status—20% of incoming referrals were

identified as Urgent but 44% of triaged referrals were deemed Urgent although not necessarily the same cases).

What changes were made to access, triage prioritization and waitlist management?

- The process of setting up a CAT system has caused the specialties to clarify their processes. Through collaboration they achieved agreement on the following:
 - The definition of triage categories;
 - The types of symptoms, medical conditions, or issues that were included in each triage category along with related co-morbidities;
 - Acceptable approximate wait times for each triage category;
 - The tests, investigations, and documentation required to enable triage to occur;
- This information was then made available in the CAT Booklet (also on line on the Department of Medicine website), codified in the CAT Referral Form, used by CAT staff, and tracked in the CAT Access Database;
- Referring physicians sent their referral information to CAT where it was triaged and appointments were booked with available specialists; and
- Some physicians continued to refer directly to the specialist of their choice.

What impact did Project changes have on communications and information flow between/ among health professionals, care teams & patients & families?

- Less time is wasted in communications regarding referrals;
- Referring physicians very much like receiving a faxed confirmation that their referral had been received and, generally, that an appointment had been booked,
- Having a triage or on-call specialist to contact if the GP has concerns about a referral further increases their comfort level; and
- Receiving appointment confirmation has facilitated communications between GPs' office staff and patients resulting in less frustration on both sides.

What impact did Project changes have on business processes such as triage prioritization, scheduling and waitlist management?

- Specialists' clinics are more often booked to capacity as a result of CAT;
- The paper trail required for accountability is much clearer and more apparent as a result of CAT making the system more accountable from a legal perspective;
- Patients are less likely to "fall between the cracks" due to inaction or missing information;
- The Access Database, designed for the evaluation, enabled CAT staff to track referral status and wait time information from month to month, and enhanced their ability to manage referral demand;
- The WCWL Priority Referral Scores (PRS) tools, while not yet finalized, developed criteria to assess the urgency of referrals to Rheumatology, Geriatrics, GI and Nephrology through a rigorous research process;
- A high-level IT plan was developed for an automated referral process that is based on processes responding to physicians' referral needs and CAT field experience;
- 2 AIM collaborative were held during the study; one was evaluated through interaction with 3 PCN and 3 specialty clinics (50% of those participating); and
- 5 of the 6 AIM clinics mentioned the value they had gained from using measurement to understand and solve problems.

What impact have these changes had on provider and patient satisfaction?

- Referring physicians were very satisfied receiving faxed confirmation that the referral had been received; those who received confirmation of booked appointment were also satisfied;

- They thought the process was faster and less time consuming although it did depend on the complexity of the individual case; and
- Limited feedback on patient satisfaction was obtained although referring physicians indicated that faster turnaround supported patient satisfaction.

What lessons were learned?

Lessons from the re-design process included:

- The triage team is essential to this process and will need on-going support;
- Division management support is critical to the implementation process;
- The clerical staff at the GP's office plays an important role in communications;
- The triage process is beneficial for new specialists coming into the system; and
- Specialists who are part of an ARP appear to integrate into CAT more easily.
- The PRS tool development process was time consuming and costly but some lessons can be applied in future;
- The CCDMC model was costly to operate and patient enrolment was slow but the multi-disciplinary approach to care was well received by patients, family physicians and staff;
- AIM teams provided a number of suggestions to improve the AIM training process including shorter training sessions, simplified tools and more Alberta-based context;
- Key factors supporting successful AIM projects included the fact that clinic personnel must share an identified need or predisposition towards solving an efficiency problem; both management and clerical/administrative staff buy-in are critical; and there must be commitment to the learning process by a core group; and
- Key identified barriers to implementation included staff turnover; and a preponderance of part-time physicians.

What impact has the Project had on the completeness and appropriate of referrals overall?

- Approximately 60% of currently referrals include complete information;
- Referral completeness increased significantly in Hematology;
- 80% or more of referrals across participating Divisions are accepted as appropriate;
- Each of the three editions of the CAT Booklet to date have described the required tests and documentation in more detail, facilitating referral completeness; and
- Both CAT staff and the GPs confirmed that referral completeness and appropriateness is increasing as physicians become aware of requirements.

What changes in patient access/transition/flow to specialized medical care occurred as a result of Project activities?

- CAT supports the physician who needs to make a referral but may not have a contact, including new physicians, relocated physicians, rural or out-of-province physicians, and GPs who are unaware of specialists' availability and interest areas;
- CAT also supports existing networks as physicians can refer directly if they choose;
- Referral volume has continued to grow due to increased efficiencies in CAT processes, increased physician awareness, and increased demand;
- Referral demand and appointment supply have tended converge but it is an ongoing balancing act appointment slots could decline if physicians left their practice, went on maternity leave, or retired. As a result, the management of supply and demand was an ongoing balancing act;
- The CCDMC was designed to provide multi-disciplinary comprehensive care and proactive follow up to complex chronic individuals with a recurring requirement for acute care services but only 47 patients were available for statistical analysis. Total bed days were reduced by 51%, total admissions

decreased by 24%, and ED visits were reduced by 19%. Early indications suggest that ED visits were continuing to decline.

What impact did Project activities have on optimizing or reducing wait times?

Statistical analysis of median wait times was conducted:

- Median Urgent wait times were 6 days in Endocrinology, 5 days in GIM, and 15.5 days in Hematology (all within CAT guidelines);
- Median Semi-urgent wait times were 37 days in Endocrinology (significantly longer than CAT guidelines) and 46 days in Hematology (well within CAT guidelines); GIM did not use this category;
- Median Routine wait times were 107 days in Endocrinology (within CAT guidelines), 21 days in GIM (significantly shorter than CAT guidelines), and 62 days in Hematology (well within CAT guidelines).
- 5 AIM clinics reported decreases in wait times (measured as third next available appointment) of between 6—140 days
- 3 AIM clinics reported an average decrease in in-clinic wait time of 22 minutes per patient.

Conclusions and Recommendations

Overall it was concluded that the MAS Project has been very successful in achieving its goals and has effected significant positive changes which must be maintained and expanded.

Based on the findings of this evaluation, the following recommendations are advanced for consideration:

- 1. Central Access & Triage should be continued and should be expanded to other health services as staff and management demonstrate interest, support, and readiness for its process changes.**

CAT responded very well to the identified needs of physicians who attended the Referral and Access Conferences and to the model built upon the experience of the ARP Innovation Initiative intake re-design in Rheumatology. CAT has clarified triage definitions and requirements, set target wait times, streamlined the intake process, increased access efficiency, accountability and paper trails, and either shortened wait times or met targets in nearly all categories. It has been enthusiastically received by the GPs and is positively viewed by most of the specialists who have used it. Groups involved in CAT will need to continue collecting information on their performance indicators because the MAS Project has demonstrated that routine data collection and review helps staff manage their resources and keep their wait time goals in mind.

Some further development is required and the following suggestions should be considered:

- 1.1 The lack of an electronic scheduler was a major barrier to more efficient implementation of CAT and needs to be addressed as soon as possible;
- 1.2 Coverage and sustainability of CAT staffing now needs to move beyond Project status and should be incorporated in operational budgets;
- 1.3 Some GPs indicated that they had not received confirmation of appointment times but they were anxious that this should occur;
- 1.4 Some CAT documentation requirements are very broad (e.g., GIM) and may benefit from regular review;
- 1.5 Many suggested that better use could be made of patients' time while they are waiting for an appointment; several suggestions were made and this topic warrants further exploration;
- 1.6 Documentation issues for unattached patients and linkages with EDs, walk-in clinics and PCNs are ongoing issues that have been highlighted by this Project; creative solutions need to be explored;

2. AIM collaboratives should continue to be offered.

Participation in AIM has taught clinics the value of applying such economic principles as supply and demand, and has developed their problem-solving skills based on planning, measurement, and the collection of evidence. Use of AIM tools has helped clinics decrease wait times for patients and has resulted in a number of clinic efficiencies.

Findings from the first collaborative should be reviewed, including the following suggestions, when planning future iterations:

- 2.1 Consider teaming up with an Alberta university with a web-based interface such as Blackboard, Web CT or Moodle to support asynchronous distance learning for at least half the learning sessions. These could be supported by webinars, Eluminate sessions, on-line reporting, email communication and a document repository;
- 2.2 Retain the sense of a collaborative through fewer, smaller and shorter in-person sessions and continue the personal support of the facilitators;
- 2.3 Consider clustering participating clinics through some commonality such as size (e.g., number of physicians/lead staff), clientele (e.g., seniors), health issue (e.g., cardiac), management structure (e.g., ARP), or location (e.g., rural versus urban). This would enhance the exchange of lessons learned; and
- 2.4 Consider standardizing measures further. With some adjustments and clearer parameters, the measures could be even more powerful than they currently are at the individual clinic level and could be rolled up to the organizational or provincial level.

3. The WCWL Priority Referral Scores (PRS) tool for Rheumatology should be completed. Draft referral criteria for Geriatrics, Gastroenterology and Nephrology should be fed into CAT requirements as appropriate.

While this rigorous research process can stand as a proof of concept, it is too resource-intensive for further development, apart from the Rheumatology PRS. This pilot tool is very close to completion and only needs a field test prior to its full implementation. This should be conducted before the MAS Project is completed. The important knowledge gained through this tool-generating activity should be integrated with the practice-based referral criteria currently published in the CAT Booklet.

4. The high level IT referral requirements recommended as part of the MAS Project should be fed into future provincial considerations about automated referral processes.

Because the need for an automated referral process that includes an electronic scheduling component is severe, and because the Access Database that was developed for this evaluation has identified and tested the performance measures required to successfully track a CAT system, this plan provides an important piece of the automation puzzle.

5. Lessons from the Complex Chronic Disease Management Clinic should continue to be used in ambulatory settings for complex chronic patients.

The CCDMC showed that a multi-disciplinary approach which engages complex chronic patients while not in the throes of an acute incident, and which provides regular support, rationalizes their care plans and medications, and links them to community resources, has merit and shows early signs of positive outcomes in terms of decreased demand on acute care. In particular, it will be important to investigate how to further reduce ED visits. While this particular model was too costly, it should be possible to integrate these principles into more routine ambulatory settings.