

Rehabilitation Integrated Transition Tracking System

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Rehabilitation Network of Ottawa Carleton (RNOC)

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Need for Referral Tracking

- Information available to primary care clinicians is often sparse
- Referrals are largely paper based, requiring much physical management of data
- Information on previous treatments and assessments are often unavailable or slow to arrive to subsequent care providers
- Much of the data is collected multiple times by the various providers
- Lack of transparency in the current referral process



What is a referral?

- A referral constitutes the transition of a patient's care from service to service, facility to facility or service provider to service provider
- Need for information flow can go both ways
- Current problems include inadequate provision of information, lack of understanding regarding available services, duplication of information, loss of paper trail

Scope



- ◆ Goal of the RITTS is to better integrate rehabilitation services in the Champlain District with Primary Care providers
- ◆ RITTS is a web-accessed rehabilitation referral tracking and database system, which is intended to span acute care through to community care in the Ottawa area. It will enable health providers and clients to seek appropriate referrals and enable health care providers to better manage information directly related to rehabilitation



Project Objectives

- Determine what information is necessary to facilitate referrals for specific rehab populations
- Standardize information collected by service providers for specific rehab populations with the use of an electronic database and referral forms
- Engage stakeholders in the process of developing and implementing improvements to the new system
- Improve the relevant referral information made available to service providers, including the primary care provider, via the database
- Streamline the referral process to reduce time spent on information gathering and referral processing



Timeline

2004						2005											2006				
J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	
Consultation																					
					Design & Promotion																
									Promotion & Implementation												
																Evaluation					

- The RITTS timeline has been expanded beyond this original structure;
- The RITTS Project has created documentation for each of its phases, as well as additional documentation pertaining to project findings.

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Engagement of Stakeholders

- Stakeholders include, specialists, TOH out-patient services, primary care physicians, CCAC, other primary care providers (physio, OT etc.), consumers
- Structured interviews, focus groups will be consultation formats
- Pilot implementation and evaluation of the database & online referral forms will engage a Family Medicine Unit, one CCAC unit
- Feedback from this initial implementation will be incorporated into the database & forms, preceding a larger implementation



Benefits and Outcomes 1

- RITTS should reduce time spent on rehab referrals by;

- 1) ensuring access to more appropriate referral information
- 2) allowing for more efficient triage and specialist assessment
- 3) prevention of information loss, unconfirmed referrals on rehab patients who access the health system

Based on these points, RITTS should save time, money and improve both patient and service provider satisfaction



Benefits and Outcomes 2

- Accessibility of the information to primary care providers will enable them to take a more active and informed role in patient care
- Technological tracking will enable measurement of time spent on referrals, quality and quantity of information flow and satisfaction with the system



Outcome Measures

	Project	Ministry	Clinicians
Registered member report: Total number, unapproved, active, suspended	✓		
Originating referrals (send) by type, source, date, diagnostic category, number	✓		
Referral received type, source, date, diagnostic category, number, acceptance / rejections	✓		
Total number of patients	✓	✓	✓
Total number of hits on the project web pages (main, referral, inventory, etc)	✓		
Average time report (from referral to response) by type of referring program	✓	✓	✓
Average response time for each facility	✓	✓	✓
Physical outcomes (FIM)			✓
Evaluate the time it takes to complete and send a referral.	✓		



Objectives

	OBJECTIVES	OUTCOMES
1	Evaluate the amount of information RECEIVED by service providers for making a decision	Increased efficiency, reduced amount of missing data for referral, and standardizing the data provided.
2	Evaluate the time required to review a RECEIVED referral before sending it for	Time saved in the <i>receiving</i> end by using RITTS.
3	Determine the information necessary for a common referral/assessment tool	A referral form that uses common questions for all diagnostic categories, and specific questions for specific categories.
4	Determine what information the system should convey about patients.	Client group specific scores and outcome measures relevant to rehab.
5	Assess health care provider satisfaction with the use of the RITTS and the transition process of clients through the	Increased satisfaction of the amount of information provided by service providers on the referral form.
6	Systematic cost savings for service providers who use RITTS	Cost saving data = time for referral X cost per employee
7	Facilitate access to rehabilitation services through the Champlain District.	Increased information exchange



Partners

2004						2005											2006			
J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
Phase I																				
														Phase II						

Phase I Sisters of Charity Ottawa (Élisabeth Bruyère)
 The Ottawa Hospital (Civic, Riverside, General, TRC)
 CCAC
 Robin Easey Centre
 Four physicians in the community

Phase II Queensway-Carleton Hospital
 Montfort Hospital

Phase III Rest of the Champlain District (contingent upon further funding)



Types of Referral

	Member	Non-member
Member	No	Yes
Non-member	Yes	Yes

member

Yes = Human Intervention



- # Access to information
- Non-members (Public):
 - Facility and service inventory
 - Public referral form
 - Send referral, but can't receive
 - Info on RNOC, and RITTS
 - FAQ, informational links
 - Members only
 - All the above
 - Comprehensive referral form
 - Previous rehab referrals of patient
 - FIM data on rehab patients
 - Not having to re-enter patients' information
 - Not having to re-enter their own personal profile
 - Access to all previous data on patient
 - Get notification email when they have new referrals

Security of information – *Non-member access*



- **Verifying the ID of the physician in the community**
 - Check whether the physician name matches with physician ID.
- **Avoid being “spammed” on the internet**
 - Using digital verification code to prevent RITTS public referral form from automated internet robots.
 - reduces system loads
 - ensures better performance of RITTS services.



Security of information – *Member access*

- SSL is applied onto the whole RITTS web site (www.rnoc.ca) Secured Sockets Layer is a protocol that transmits communications over the Internet in an encrypted form.
- Login requires member user name and password.
- Password is case sensitivity
- Use SHA-256 One Way Encryption on the member password
- Super user can monitor and modify members' permission at any time any where



Benefits of Use

- **Send and receive referrals online** using a convenient, standardized referral format with mandatory fields.
- **Search for rehabilitation services**, or find more information about facilities, in the District of Champlain using *Find a Rehab Service*.
- **System-generated e-mails** automatically notify the receiving user of a referral's arrival, and then the sending user of the referral's status.
- **Different user types for each user** reflecting their access to the referral system. (I.e. physicians, support staff, ward clerks, admitting departments.)
- **Security protocols** that protect user and patient information more than the existing, paper-based system, which relies on fax machines and mail.
- **Rehabilitation resources** are collected in a centralized location.



Member Login | Become a Member

Rehabilitation Network of Ottawa-Carleton
Réseau de réadaptation d'Ottawa-Carleton

RITTS Project RNOC Patient Refer a Patient Find a Rehab Service Member Help

[About](#) [Mandate](#) [Linkage](#) [Organization](#) [Work Plan](#) [Schedule](#) [Reference](#)

About RNOC

The Rehabilitation Network of Ottawa-Carleton (RNOC) is an organization of rehabilitation providers, which have come together in an effort to provide more effective and cost-efficient, integrated rehabilitative care in Ottawa-Carleton and Eastern Ontario.

The goal is the development of a system of rehabilitation, providing coordinated care for all age groups across a continuum of health care services, rationalized and planned across the region served by Ottawa-Carleton.

What is Rehabilitation?

The following definition is presented in the Ontario draft provincial policy framework document entitled: "Managing the Seams":

"Rehabilitation is a goal-oriented and often time-limited process, which enables individuals with impairments, activity limitations and participation restrictions to identify and reach their optimal physical, mental and/or social functional level through a client-focused partnership with family, providers and the community. Rehabilitation focuses on abilities and aims to facilitate optimal independence and social integration."

The Champlain District Health Council Rehabilitation Ambulatory Study defined the notion of rehabilitation as an evolving one, the definition of which has shifted markedly in the last few decades. Several principles are at the core of current knowledge about rehabilitation:

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Benefit 1 – Provides *FIM* data

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Log Out

RITTS Project RNOC Patient Refer a Patient Find a Rehab Service Member Help

Patient List Patient Register Patient Search Public Referrals

Patient list:

Last Name	First Name	Date Created	Last Updated	ID
<input type="radio"/> Smalley	Dorothy	2003/10/22	2004/06/09	12
<input type="radio"/> Meadows	Gracie	2003/10/23	2004/07/13	13
<input type="radio"/> Asmanis	Alfred	2003/12/31	2004/05/27	27
<input type="radio"/> Proxy	Roxy	2004/01/08	2004/08/03	28
<input type="radio"/> Clarke	George	2004/01/08	2004/02/24	29

FIM™ Instrument

	Admission	Discharge
Assessment Date:	4/13/2004	5/12/2004

Self-Care

	Admission	Discharge
Eating:	Complete Independence	Complete Independence
Grooming:	Complete Independence	Minimal Direction
Bathing:	Minimal Direction	Maximal Direction
Dressing - Upper Body:	Complete Independence	Total Assistance
Dressing - Lower Body:	Total Assistance	Total Assistance
Toileting:	Total Assistance	Total Assistance

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Benefit 2 – Provides a public referral form



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Public Referral Form

Fields marked with an asterisk (*) are required.

* For which episode: ccac pt-03/15/2004

* Primary Contact for information:

* Date Referral Completed: 2004 / 9 / 10 (yyyy/mm/dd)

Anticipated date patient "Ready for Rehab!" or ready for transfer to rehab: / / (yyyy/mm/dd)
ALC date or date determined by health care team. If referring prior to patient being ready for rehab, estimate date.

Comments, ready for rehab status
Maximum length: approximately 150 words (or 1000 characters)

* Choose whether initial referral or update?

Planned Referral Destination:

Planned Intake Provider:

Client Preferred choice for referral:

Preferred accommodation: Ward

Benefits 3 – Provides inventory of facilities and their services within Champlain District



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Member Login | Become a Member

Home | RITTS Project | RNOC | Patient | Refer a Patient | Find a Rehab Service | Member | Help

Find a Rehab

Type of care: Category of care:

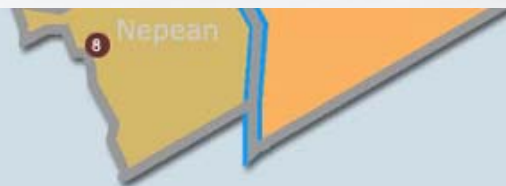
Champlain District

1. Deep River and District Hospital
2. Pembroke General Hospital
3. St. Francis Memorial Hospital
4. Renfrew Victoria Hospital
5. Amprior & District Memorial Hospital Corporation
6. Winchester District Memorial Hospital
7. Hawkesbury & District General Hospital
8. Glengarry Memorial Hospital
9. Cornwall Community Hospital

Map of Ottawa

1. Queensway Carleton Hospital
2. Ottawa Hospital - Civic Campus
3. Saint-Vincent Hospital
4. Montfort Hospital
5. Ottawa Hospital - Riverside Campus
6. The Rehabilitation Centre
7. Ottawa Hospital - General Campus
8. Community Care Access Centre

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[\[-\] The Rehabilitation Centre](#)

Name of Organization:	The Rehabilitation Centre
Address:	505 Smyth Road
City:	Ottawa
Telephone:	613 - 737-7350 ext. 5565
Email:	mflah@rohcg.on.ca
Short Description:	Vocational Rehabilitation Services are offered to in-patients and out-patients who are exploring a return to work. These include vocational exploration, counselling and referral to other community based vocational services. Assistance is also available to employed individuals who are encountering difficulties on the job due to brain injury.
Fee Schedule:	(Public)
Target Population:	(Adult) (Older Adult)
Type of the Services Provided?	

[\[-\] Montfort Hospital](#)

Benefits 4 – Provides information directly related to previous rehabilitation referrals




Member Login

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RITTS Project RNOC Patient Refer a Patient Find a Rehab Service Member Help

Patients's name: Patient's name

Click the icon  to access the referral.

Referrals you made:

Archive List

Refer From	Refer To	Referral Date	Print
 Script acute care (05/05/2004)	The Ottawa Hospital, Riverside Campus	11/06/2004	
 Script acute care (05/05/2004)	The Ottawa Hospital, Civic Campus	10/19/2004	
 Script acute care (05/05/2004)	The Rehabilitation Centre	10/19/2004	
 Script acute care (05/05/2004)	CCAC	10/19/2004	
 Script acute care (05/05/2004)	Robin Easey	10/19/2004	
 Script acute care (05/05/2004)	The Ottawa Hospital, Civic Campus	10/19/2004	
 Script acute care (05/05/2004)	The Ottawa Hospital, Civic Campus	10/19/2004	

Benefit 5 – Promotes the standardization of a referral form



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Member Login

RITTS Project RNOC Patient Refer a Patient Find a Rehab Service Member Help

Patient List Patient Register Patient Search Public Referrals

Patient's name

Profile	Health Assessment	Rehab Outcome
Identifier	Medication	Period of rehab care
Demographic	Diagnosis	Events
	Allergies	Rehab outcomes
	Infectious control	
	Disciplines involved	
	Past / present treatment	



Dissemination

- **Demonstrations and Training:** Over 80 demonstrations and training sessions of the RITTS website were performed for staff from across the health care continuum and from facilities throughout the District of Champlain. Includes presentations at:
 - The Ottawa Children's Treatment Centre (OCTC)
 - Rehabilitation Network Of Champlain (RNOC)
 - University of Ottawa Heart Institute
 - Queensway Carleton Hospital
 - Riverside Hospital
 - SCO - Elisabeth Bruyère Hospital
 - Almonte Hospital
 - The Ottawa Hospital's Nurses' Retreat
 - Queensway Medical Centre
 - Bells Corners Medical Group
 - Lancaster medical clinic
 - Robin Easey



Dissemination *(continued)*

Other promotional items / means of introduction:

- **Over 250 letters** to primary health care providers and RNOC members ⁿ¹ throughout the District of Champlain;
- **An introductory letter to 1200 recipients**, sent by e-mail to individuals across the health care continuum.
- **A newsletter, sent every six weeks**, to a list of over 1200 recipients from across the health care continuum in the District of Champlain;
- **An article about the RITTS Project**, its background and goals in the March 2006 issue of Canadian Healthcare Technology magazine;
- **A brochure**, available at TRC's Resource Centre, teaching rehab patients how to use the RITTS' *Find a Rehab Service* function and *Help* resources;
- **Promotional advertisements**, such as posters, and events, such as contests, promoting knowledge of the RITTS as an online alternative.

Slide 26

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We did almost 1200 mail out at the beginning and other mailout too.. right?

nmohajer, 6/27/2006



Quantitative Results

as of June 22nd 2006

- 6 partner facilities, fully integrated and able to use the RITTS to receive rehab referrals.
- 20 participating facilities, whose rehab services and details are listed in the RITTS *Find a Rehab Service* function.
- Over 170 registered users, including physicians, support staff, ward clerks, admitting staff, and facility administrators.
- 214 referrals have been made using the RITTS website, including Inpatient Short-Term, Inpatient-Specialized, and Outpatient referrals.
- **XX of hits.**



Quantitative Results *(continued)*

During the Consultation Phase of the RITTS' development, 55 potential users, including MDs, nurses, administrative staff, ward clerks, clinical directors, and therapists from different facilities were given a presentation of the RITTS website.

Before the presentation they were asked what some of the biggest barriers in the existing referral system were, and what they wanted from a referral system.

After the presentation they were asked what they liked about the RITTS website.

Quantitative Results *(continued)*



The top five in terms of importance for the **pre-presentation** survey were:

33	The need to clarify information
29	Lack of knowledge of available rehabilitation services
27	Amount of time required to make a referral
25	The need to make follow-up phone calls to complete information
24	Incomplete information from the referring physician

Quantitative Results *(continued)*



The top responses for the **post-presentation** survey were:

41	The ability to track referrals you have sent and received electronically
32	The ability to complete and send referrals online
29	The map of the Champlain District and the information it offers
26	Secure information exchange
24	Only entering a patient's information once and Inclusion of essential patient information



Qualitative Results

Potential and current RITTS users were asked during training and demonstrations what they liked most about the RITTS. The most common answers were:

- **The *Find a Rehab Service* function**, containing a centralized database of rehabilitation services;
- **The rehab resources available under the *Help* tab**, such as helpful links;
- **The ability to track a referral's progress** by looking at a patient's "RITTS Referral History";
- **The mandatory fields on the standardised referral form**, which enable only more complete referrals to be sent through the RITTS;
- **The online tutorial**, which takes the user step-by-step through the RITTS' basic functionality.



Lessons Learned

- **Mandate:** Without a mandate, facilities that have developed and integrated their own system for sending and receiving a rehab referral are less likely to switch to online alternatives such as the RITTS.
- **Existing Facility Practices:** The RITTS is unable to effect existing facility practices with regards to when a referral is processed by a receiver. Consequently it is very complex to measure the time saved.
- **RNOC Support:** Any alternative to existing referral systems must have the political and active support of executive bodies (such as RNOC) as well as technical support (Information Services in TOH) to be successful.
- **Bilingualism:** Any viable online alternative for rehab, which relies on an interdisciplinary model of care rather than a medical model, must be bilingual in order to facilitate communication.
- **Lack of Computers or Internet Access:** Many potential users in the community and ward clerks in facilities do not have access to a computer or to a computer with an internet connection.
- **Resistance to Change and Technology:** Many potential users did not consider a non-mandated system to be an alternative to existing referral practices. There is also sometimes a low level of computer skills among potential users, which may contribute to system challenges.



Lessons Learned *(continued)*

- **Ward Clerks:** The RITTS' primary users are ward clerks performing Inpatient referrals, not physicians.
- **Security:** Web-based referral tools are consistently perceived to be less safe than paper-based ones by potential RITTS users, though web-based tools offer more security via encryption protocols, username and password functions than fax or mail.
- **Lack of Internet Access:** Though Outpatient referrals arrive primarily from community offices, many community offices lack a computer or internet connection.



Changes to the RITTS Plan

- **Geriatric rehabilitation:** Not initially considered for inclusion on the RITTS, Geriatric-Orthopaedic referrals were integrated after consultation with SCO Health Service – Elisabeth Bruyère in order to accommodate the types of referrals the facility receives;
- **vOasis:** Over the life of the project the RITTS could not enlist the cooperation of TOH Information Services department, necessary to meet the goal of integration with vOasis;
- **CCAC:** The CCAC could not be fully integrated due to security issues and their existing care model (they only accept referrals by fax). As a result, the CCAC referral form was instead made available on the RITTS website for download;
- **Cost Savings:** It was discovered that estimating the cost savings to primary health care providers who use the RITTS website is beyond the RITTS' scope and ability. This information could be determined after a few years of continuous system use;
- **HL7 Compliancy:** The goal of partial HL7 compliancy was added after the project's scope had been defined in order for the RITTS to connect with other medical systems throughout Ontario.



Possible Future Enhancement

- Integrate with vOacis;
- Offer access to new partners in the region;
- Accepting new members / care providers in the private practices;
- Add new layers such as telehealth and satellite clinics;
- Add nursing triage models to specific categories of care;
- Add pediatric and geriatric care;
- Add service level inclusion and exclusion criteria for all institutions in the Champlain District;
- Coordinate efforts with the Palm Pilot project to collect CIHI data,

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Maintaining the RITTS Beyond July 31st 2006



- RITTS is an automated website, and allows its registered users send and receive rehab referrals online;
- An online tutorial helps users with the website's basic functionality in the absence of the RITTS team;
- Documentation designed to guide system maintenance exists.

However:

- A member of The Rehabilitation Centre (TRC) will be required to review requests for registration, validate unregistered referrals, and answer user questions.



Cost of sustaining RITTS

- To maintain the RITTS as it stands today with minimal budget (no further promotion):
 - \$15-20K / Year
- To expand the system to partner with other hospitals in the LHIN:
 - \$70-90K / Year
- To explore any other future features:
 - TBD



The Future of RITTS

- Integration of the system with new technology (e.g. palm pilots) for greater ease of use
- Integration with tele-health technology to improve access to remote regions
- Offer access to other community health care providers as a comprehensive summary of individual patient history, diffusing the need for access to hard copy charts.
- Use by the Local Health Networks to map use of rehabilitation services and referral patterns to determine future resource allocation and funding needs
- Potential for system to be used by other health care sectors and other health care regions



Possible Future Features

- Integrate the RITTS beyond TOH, with facilities throughout the LHIN.;
- Integrate with vOacis;
- Accepting new members / care providers in the private practices;
- Add new layers such as telehealth and satellite clinics;
- Add nursing triage models to specific categories of care;
- Add pediatric care;
- Add service level inclusion and exclusion criteria for all institutions in the Champlain District;
- Coordinate efforts with the Palm Pilot project to collect CIHI data;
- Increase collaboration with CCAC;
- Become fully HL7 compliant in order to better ensure patient privacy.