

Outcomes, Benefits and Gaps of WRHA's Early Supported Discharge Stroke Rehab Service

Presented by: Louise Nichol

lnichol1@wrha.mb.ca

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Presenter Disclosure

Speaker: Louise Nichol

Not applicable: no disclosures



Mitigating Potential Bias

Not applicable



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Objectives

Brief overview of CSCS/ESD

- Beginnings....evidence and rationale
- Client / population characteristics
- Deliverables

Outcomes

- Discharge disposition
- Impact on LOS
- Cost benefits

Limitations and Gaps

- Service and system level



Acknowledgements

Community Stroke Care Service staff

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Stroke Care Continuum



- Broad care continuum
- Multiple providers and locations
- Requires coordinated, integrated team approach



Community Stroke Care Service (2005-present)

- History – implemented in 2005
- Centralized service in the WRHA Home Care Program
- Early Supported Discharge Model of Care
 - Case Coordination,
 - Home Care Support,
 - Home-based Rehabilitation,
 - Linking to Community Resources/Programs
- Patients are discharged from hospital at an earlier point in recovery than would normally occur; access intensive rehab
- Discharged from ED, Acute Care, Rehab



Client Eligibility

- Person with recent stroke
- Medically stable; do not require 24 hour IP care
- Home is the best environment to address rehab goals; able to tolerate home-based rehab
- Same intensity of rehab as IP setting, up to 5 days/week where indicated
- Referral base: RHC, SBH, HSC



Deliverables

- Maximize recovery and functional independence in their home and community environments
- Respond to evolving needs of the person with stroke and their caregiver(s)
- Enable client to live safely at home for as long as possible
- Decrease long term reliance on Home Care



Community Stroke Care Service

Early Supported Discharge – Core Team

Staffing Levels	2005 – 1 Stroke Rehab Unit (Riverview)	2014 – 1 Stroke Rehab Unit & 2 Acute Care Sites (HSC, SBH)
Case Coordinators	1.0	5.0
Resource Coordinators	1.0	2.0
Occupational Therapists	1.0	6.6
Physiotherapists	0.5	3.0
Speech Language Pathologists	0.5	2.0
Rehabilitation Assistants	2.0	7.0
Social Worker	0	1.0
Total	6.0 FTE	26.6 FTE

Supporting Evidence

- ESD delivered by a comprehensive, well-resourced, coordinated interprofessional team is an acceptable alternative to inpatient rehab for some persons with mild and some moderate stroke patients and can decrease LOS by 8-13 days, with same outcome as IP rehab (level A).

Canadian Best Practice Recommendations for Stroke Care



Rationale & Outcomes for ESD

- Clients discharged earlier from hospital →
 - reduction in LOS
 - ↓ incidence of death or disability
- Appropriate for most mild and some moderate severity stroke clients
- By-pass IP rehab for some mild and moderate PWS

Assuming – 37% admitted receive ESD:

- 27% ↓ in acute ALOS
- 10% ↓ in death
- 16% ↓ in institutional care
- ↓ LOS up to 13 days for mild stroke
- ↓ LOS up to 8 days for mild/moderate stroke

Krueger, H et al, Cost Avoidance Associated with Optimal Stroke Care in Canada. Stroke: August 2012 <http://stroke.ahajournals.org>



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Evidence Used....

- Canadian Stroke Best Practice Recommendations
- Canadian Stroke Network reports
- Data from internal evaluation and regional sources
- Outcomes from other provinces
- National benchmarks; ALOS and ELOS
- ALC bed days and LTC rates
- Cost avoidance literature
- **FIM™ scores from National Rehab Reporting System**



Functional Independence Measure (FIM)[®]

Analyzed National Rehab Reporting System (NRRS) data submitted by Winnipeg sites that collect FIM[®] scores (2011/12):

- reviewed stroke patients' admission FIM[®] scores from all 4 sites that use FIM
- grouped patients' FIM[®] scores into 3 'bands':

Mild (> 80)

Moderate (60-80)

Severe (< 60)

1. Managing the Stroke Rehabilitation Triage Process: retrieved from www.ebrsr.com, Evidence-based review of stroke rehabilitation, Teasell &Foley, 2008. 2. Stillman, Granger & Niewczyk, 2009;



Trajectory of Care: FIM[®] Scores

Stroke Severity	FIM [®] Score & Band	Recommended Service
MILD	> 80	ESD or if (>100: OP)
MODERATE	60-80	IP or ESD
MODERATELY SEVERE	40-60	IP Rehab
SEVERE	< 40	IP Rehab

Teasell, R., Foley, N. Managing the Stroke Rehabilitation Triage Process.
Retrieved from www.ebrsr.com

Clients admitted to WRHA Rehab Beds and potential disposition according to NRRS Stroke Cases (2011/12)

Admission FIM®	Lower Band: < 60 Severe		Middle Band: 60-80 Moderate		Upper Band: > 80 Mild	
Rehab Beds	IP rehab		IP or ESD		ESD or OP services	
	Current	Proposed	Current	Proposed	Current	Proposed
Site # 1	16 (36%)	IP	20 (44%)	IP or <u>ESD</u>	8 (18%)	ESD or OP
Site # 2	54 (27%)	IP	52 (27%)	IP or ESD	90 (46%)	<u>ESD or OP</u>
Site # 3	14 (40%)	IP	8 (23%)	IP or ESD	13 (37%)	ESD or OP
Site # 4	7 (32%)	IP	7 (32%)	IP or ESD	8 (36%)	ESD or OP
TOTAL (298)*	91		87		119	

CSCS Client Profile

Sampling from 2016

- Adults, average age of 64
- Age range: 27 to 94
- Male: 52.6% Female: 47.4%
- RAI assessment completed post hospital discharge
- 296 referrals: 136 - OT; 84 - PT; 76 - SLP
- SW referrals initiated as needs identified



Client Profile Based on InterRAI Data

Risk of ED Use

- 40% of stroke clients are at moderate risk for ED use

Method for Assigning Priority Level (MAPLe)

- Nearly half of the clients are at high or very high care complexity

Cognitive Impairment Scale

- Very few clients moderate or greater cognitive impairment

Institutional Risk CAP

- Over 1/3 are at risk for LTC institutionalization if care needs can't be addressed in the home

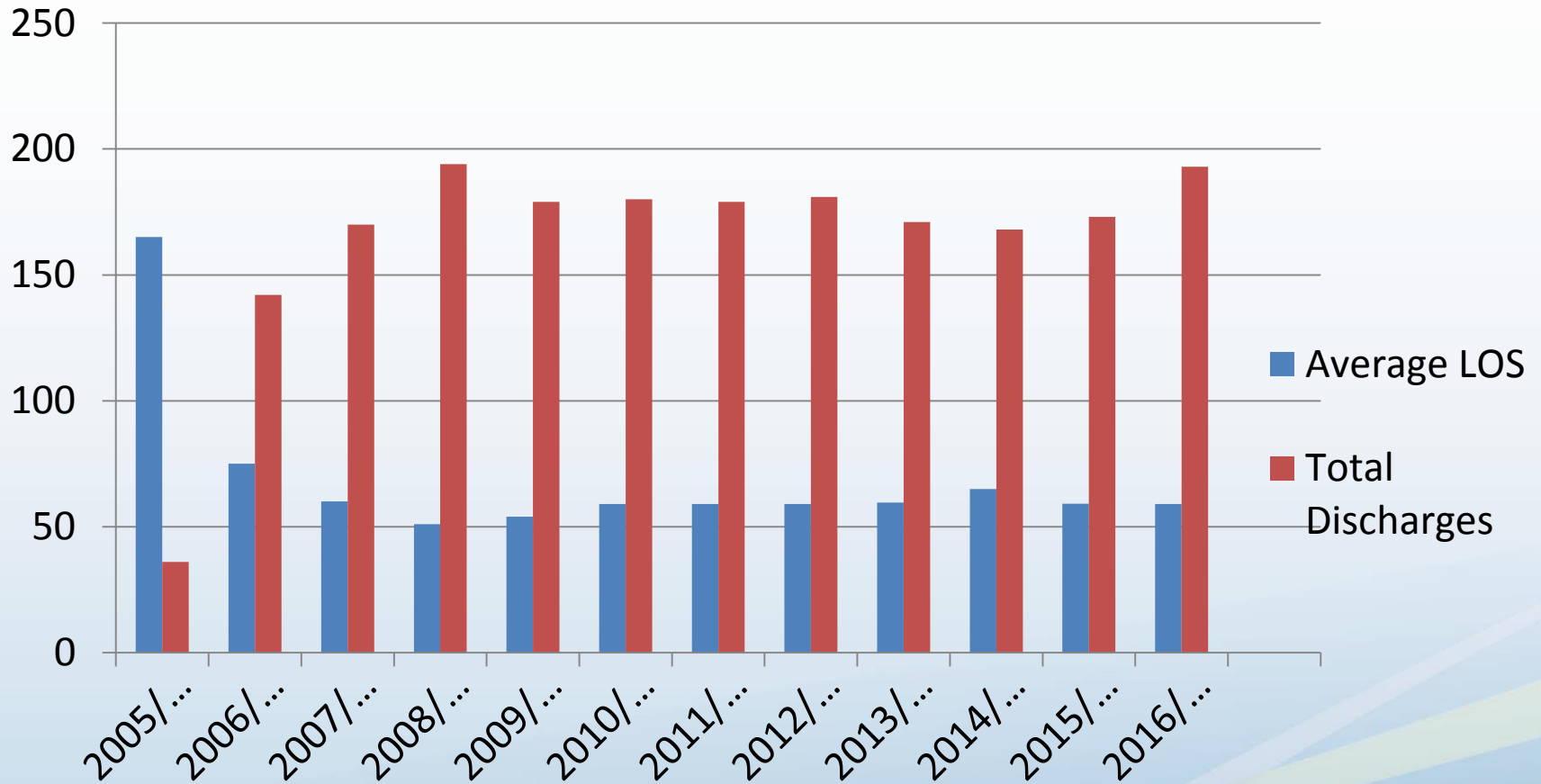


Openings, Closings & Transfers

Timeframe	% Closed to HC following CSCS	% Transferred to HC following CSCS	% Closed to HC with regular HC
2015	26%	12.5%	8.8%
2016	35%	18%	8.3%
2017 (1/2 year)	40%	12%	8.9%

On average, 34% of clients can be closed to Home Care after CSCS involvement

RHC LOS and Discharges



- RHC LOS decreased from 165 to average of 60 days from 05/06 to 16/17
- Total average # discharges at RHC increased from 36 to average of 174

Case # 1

Characteristics: Female in her 40's; severe stroke; wheelchair dependent; severe expressive aphasia, no use of u/e and limited l/e, assist with all ADL's; required 24 hour support at discharge (through family & Home Care); lived with spouse and 2 teenagers; in a 2-storey home; great family support.

Interventions: Intensive rehab – OT, PT, SLP, Rehab Assistant up to 5 days/week

Outcomes: Independent with meds, breakfast, lunch, transfers, toileting, parts of dressing and bathing, safe to be alone
Decreased HC respite services, help with bath and am care only. HC services reduced from 45 hours/week (\$963,00/week) to 11.25 hours/week (\$240.75/week).



Case # 2

Characteristics: Male, upper 80s; very large stature; hospital recommended LTC; wife wanted him home. Very heavy care needs; mechanical lift for transfers, full assist for all ADL's, swallowing and cognitive issues; poor sitting balance; bed and wheelchair dependent; small condo

Interventions: OT, PT, SLP, RA 3 – 5x's/week; ++ time spent educating HC HCA's and family on safe client handling, bed mobility, transfers with overhead lift; ++ equipment needs; seating/positioning/skin management; maintenance of limited function; support and resources for wife

Outcomes: No reduction in home care services; able to remain in the community despite ++ care needs and medical complications.

Case # 3

Characteristics: Middle aged client; no home and ++ financial issues; discharged to live with supportive friends; physically well; cognitive, visual/perceptual and language impairments; some anxiety

Interventions: OT, SLP, SW; management of ADLs, IADLs, community re-integration, finances, assist to locate new home; return to work, reading, community resources/links

Outcomes: Returned to prior job; resumed living independently in own home; managing finances



Case # 4

Characteristics: Male in his 70s; lived alone; history of anxiety and depression; multiple co-morbidities; anxious re: discharge home; ambulates with 2 WW & AFO; paresis of upper extremity; 4 HC calls /day, 2 bath calls/week and LHK & L in place; required assist with ADL & IADLs; equipment needs

Interventions: Intensive PT and OT; RA initially 5x/week.

Focus: mobility, balance , self-care, showering, meal preparation, IADLs, community access.

Outcomes: HC reduced to 1 HS call and LHK & L. Minimal physical improvement, but ++ gains in confidence, reduced anxiety, increased endurance, and independence using one-handed techniques.



Case # 5

Characteristics: Male in his 40's; married with children; HTN; medical complications; hemianopsia; cognitive and cognitive-linguistic deficits; mobilized with aide; minimal use of affected u/e; help with some self-care and all IADL; 2-storey home; family business

Interventions: ++SW involvement due to client struggles with mood and coping. Home modifications, equipment, ++rehab (OT, PT, SLP, RA)

Outcomes: Initially 7.5 hours/day of HC respite while wife at work; within 3 months respite was removed, lunch call only needed; 1 month later, removed all HC services; independent in all ADL including meal preparation. Ambulates with quad cane in/outdoors; discharged from CSCS (after 8 months). Discharge referrals for driving, RTW, outpatient PT and OT



Case # 5: Client Cost Calculations

Costs at Onset	Cost at Discharge
Week 1: \$802.00/week or \$3210.00/month	
Week 12: \$75.00/week or \$300.00/month	
	Week 16: HC services discontinued (0)

Cost Benefits to the Health Care System; increase independence & safety; decrease in home care costs (ongoing HCA, CC costs...)



Gaps/Limitations



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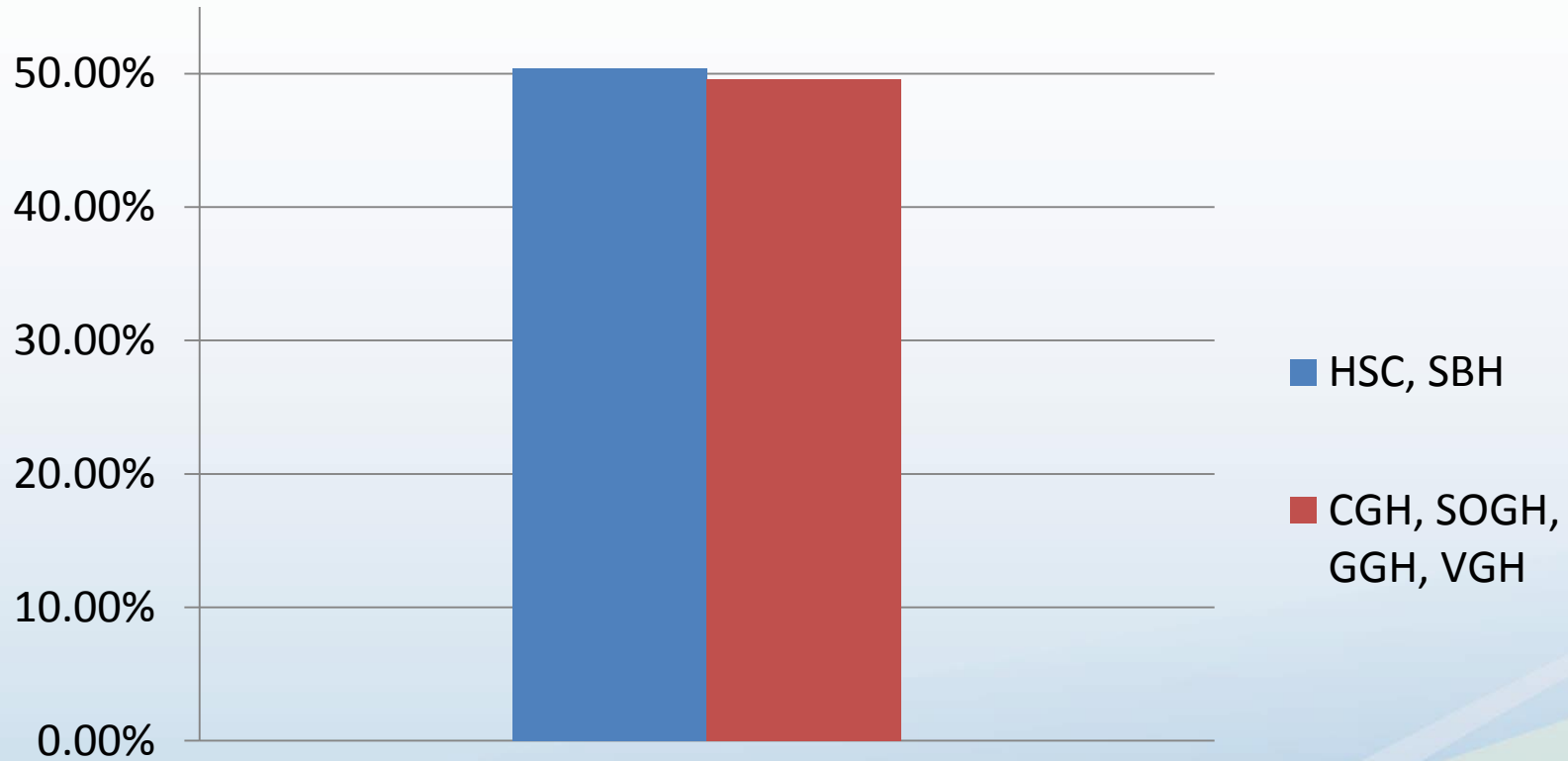
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WRHA Current State

- Patients with stroke (PWS) admitted to all 6 acute hospitals
- 2 sites – tpa
- No acute stroke unit (ASU)
- 1 site - 30 bed stroke rehab unit
- Limited outpatient rehab
- Day Hospitals; not stroke specific; > 65 years of age
- High rate of clients are paneled for LTC (higher than national)
- LOS is higher than national benchmarks (acute & rehab)
- Early Supported Discharge service not available at all sites



Over the past 5 years....



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Over the past 5 years.....

On average:

- 935 stroke patients admitted per year
- Total LOS (acute and ALC) = 22,240 days/year
- Total (acute) LOS = 16,477 days/year
- Conservable acute days = 8605 days/year
- Bed equivalent (acute days) = 23.6 beds (was 26.3 beds in 2012/13)
- Total ALC days = 5,764 days/year
- Bed equivalent (ALC days) = 13 beds (was 21 beds in 2012/13)



WRHA Proposed Model (2014, 2016)

Phased Approach:

1. ESD services for all sites
2. Increase outpatient rehabilitation (OT, PT, SLP and SW)
3. Increase inpatient rehab beds
4. Create an acute stroke unit (ASU)



Cost Avoidance Associated with Optimal Stroke Care in Canada

Estimated the potential for cost avoidance with organized care:

- Rapid assessment and treatment (80%)
- Thrombolytic therapy (tPA) (10% of ischemic stroke)
- Organized stroke unit care (80% of admitted)
- Early supported discharge services (37% of admitted)

Conclusion: \$682M savings annually in Canada

Reference: Krueger, H. et al. Stroke.2012; 43:00-00



If ESD was available at all sites...

Modelling optimal care; if 37% of PWS receive ESD, cost avoidance = **\$3.3 M annually**

Savings: \$1.05M

GOAL:

3. Ensure CSCS is accessible to clients at all sites
2. Reduce # of sites admitting stroke patients;
1. Provide ESD directly from an ASU



References

- Canada Stroke Network, 2011 “The Quality of Stroke Care in Canada”
- Canadian Stroke Network, 2012. “This is what quality stroke care looks like”
- Garraway WM et al. The triage of stroke rehabilitation. J Epidemiology Community Health 1981; 35:39-44
- Garraway WM. Stroke rehabilitation units: concepts, evaluation, and unresolved issues. Stroke 1985; 16:178-181
- Krueger H. et al. Stroke.2012; 43:00-00. “Cost avoidance associated with optimal stroke care in Canada”
- Lindsay MP, Gubitz G, Bayley M, Hill MD, Phillips S, and Smith EE. Canadian Stroke Best Practice Recommendations Overview and Methodology (5th ed.). On behalf of the Canadian Stroke Best Practices Advisory Committee and Writing Groups. 2014; Ottawa, Ontario Canada: Heart and Stroke Foundation, Canada www.strokebestpractices.ca
- Ontario Stroke Network, Final Report, 2012. “The Impact of Moving Stroke Rehabilitation Best Practices in Ontario”.
- Stillman G., Granger C., Niewczyk P. 2009. “Projecting Function of Stroke Patients in Rehabilitation Using the AlphaFIM Instrument in Acute Care.” Physical Medicine & Rehabilitation1: 234–39
- Teasell &Foley, 2008 “Managing the Stroke Rehabilitation Triage Process” retrieved from www.ebrsr.com, Evidence-based review of stroke rehabilitation





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