Early Supported Discharge - Core Elements

Developed by the Ontario Stroke Network's Provincial Integrated Working Group on Early Supported Discharge

Early Supported Discharge (ESD) is defined as "a form of rehabilitation designed to accelerate the transition from hospital to home through the provision of rehabilitation therapies delivered by an interprofessional team, in the community. It is intended as an alternative to a complete course of inpatient rehabilitation and is most suitable for patients recovering from mild to moderate stroke."[1p.36,28] ESD has been further defined to include services that are provided by a well-resourced, specialized, interprofessional team whose work is coordinated through regular team meetings.[3,20] Services should be provided five days per week at the same level of intensity as would have been delivered in the inpatient setting in order to address individual patient needs.[1]

The table below was developed in the following way:

1. Column 1, *Core Elements,* provides categories of the core elements that are to be considered when developing an ESD service.
2. Column 2, *Recommendations,* provides excerpts of research evidence from systematic reviews, Canadian Best Practice Recommendations for Stroke Care and the Quality-Based Procedures from Health Quality Ontario and the Ministry of Health and Long Term Care regarding ESD.
3. Column 3, *Impact, Trends in Evidence, Other Considerations*, provides information for your consideration gained from discussions with existing ESD or community-based stroke teams and additional research evidence.

Core Elements	Recommendations	Impact, Trends in Evidence, Other Considerations
ESD Team Members		

• Core Interprofessional Team	• Members of the ESD team should have specialized knowledge in stroke care.[1,2] "Specialized" can be defined as having at least 80% of the ESD core team members caseload confined to individuals with stroke[16]
	• An early supported discharge team should be multidisciplinary and should comprise of physiotherapist, occupational therapist, nurse, speech-language pathologist, physician, social worker, and secretary.[2,20]
		• Recommended Additional Team Members
		  ○ Recreation Therapist[6,8]
		  ○ Therapy/Rehabilitation Assistants[6,8]
		• Consultants to core team may include:
		  ○ Physician
		  ○ Physician Assistant[6]
		  ○ Physiatrist[6]
		  ○ Neurologist
		  ○ Primary Care Physician
		  ○ Dietitian

Core Elements	Recommendations	Impact, Trends in Evidence, Other Considerations

	• Recommended full-time equivalent [2] (FTE) for a 100 patient/year caseload:
	  ○ 1.0 – physiotherapist (PT)
	  ○ 1.0 - occupational therapist (OT)
	  ○ 0-1.2 – nurse
	  ○ 0.4 – speech-language pathologist (S-LP)
	  ○ 0.1 physician
	  ○ 0-0.5 - social worker
	• An ESD team should be organized by a team coordinator[2]
	• Key components contributing to favourable outcomes include:[1,20]
	  ○ discharge planning beginning in the hospital
	  ○ a care coordinator or key worker based in the stroke unit who constitutes the link between the stroke unit and outpatient care
	  ○ a formal process in place to ensure timely and efficient transfer
	• Should be provided by a well-resourced, coordinated, specialized interprofessional team[1,20]
	• Patients should be linked with primary care[20]
		• Recommended Follow-Up Services
		  ○ Vocational Rehabilitation (Return to Work)
		  ○ Driving Rehabilitation
		  ○ Out-patient Rehabilitation[6]
		
		It is important to note that staffing requirements will vary according to several factors:[17]a) severity and complexity of stroke impairments
		b) the current level of community support
		c) duration of the rehab input (therapeutic intervention)
		d) the rehabilitation targets planned
		
		• S-LP staffing complement may need to be higher than the 0.4 FTE recommended as estimates indicate that 50% of Outpatient or community-based rehabilitation candidates in Ontario will need S-LP[18]
		
		• OT requirements may also need to be enhanced beyond the 1.0 recommendation as experience[6] suggests that this discipline is required by all ESD candidates. It was also identified that therapy assistants and recreation therapists are essential team members.[6]

Client Characteristics • Eligibility criteria	• Eligibility decisions for ESD should be based on: the patient's medical stability, whether they are able to live safely at home[2,20]	Additional Criteria • Adequate cognitive ability to manage at home[5] ○ Cognitive screening and assessment are recommended to help determine eligibility[15,19] • Household able to deal with an emergency[5]

Core Elements	Recommendations	Impact, Trends in Evidence, Other Considerations
	• Eligibility decisions for ESD should be based in part on the patient's level of disability (eg. Barthel score of 10/20-17/20) and practicality (whether the patient is living in the local area where ESD is being provided)[2] • Able to transfer safely from bed to chair (i.e. can transfer safely with an able carer or independently if living alone)[2] • Mild to moderate disability[1,21] • "Ability to participate in rehabilitation from the point of discharge"[1p.32] • "Medically stable, availability of appropriate nursing care, necessary resources and support services (e.g. family, carers and home care services)"[1p.32] • "Access to community services and support"[20p.109]	• Household able to manage continence needs[5] • Patient and family/carer agreement for referral and participation in ESD service[5] • Potential to participate and benefit from rehabilitation with up to daily frequency[5,6] • One existing ESD service usually accepts clients with a total projected FIM® Instrument score of 80 or above[6]
Household Characteristics • Eligibility Criteria	• "Availability of appropriate nursing care, necessary resources and support services" (e.g. family, carers and home care services)[1p.32]	Additional Considerations • Patient and family/carer agreement for referral and participation in ESD service[5] • Household able to manage continence needs[5] • Household able to deal with an emergency[5] • Caregivers should be assessed for their capability (emotional, physical and financial needs as well as their current health status, employment and social responsibilities) to be able to meet ongoing and changing needs in a caregiver role[22]

Program Delivery Components		
• Referral and Intake Process	• Hospital staff and ESD team staff should identify patients for ESD[2] • Specific eligibility criteria for ESD should be followed [2]	Additional Considerations • ESD team members attend weekly multidisciplinary team rounds on acute stroke and rehabilitation unit[5] • All stroke survivors referred to the service will be assessed for suitability against the criteria via an integrated discussion with the acute stroke team and the ESD team[5] • Key intake person for decision making –Stroke Rehab Coordinator reviews stroke rehab central referral form and uses algorithm to determine eligibility[6]
• Assessment &Treatment	• ESD is intended as an alternative to a complete course of inpatient rehabilitation[1,20] • Services should be provided five days per week at the same level of intensity as would have been delivered in the inpatient setting in order to address individual patient needs[1,20] • Potential advantages of ESD services - encourages more focus on self-directed recovery and realistic rehabilitation goals[7]	• Emphasis on self-management[8] • ESD service encouraged patients to focus on self-directed activities (e.g. a considerable amount [average 1.5 hours per day] of the training at home was left to patient self-directed activities)[9] • The rehabilitation program usually features functional, task-oriented activities developed to meet the patients agreed upon goals. Problem-solving skills should be encouraged[17] • Goals agreed upon by ESD team and stroke survivor +/- family/carer within 1 week[5] • Intake assessment conducted in hospital or within 24 hours post discharge[6]
• Communication and Care Planning Processes	• Each patient should be assigned a “key worker” which is a member of the team most involved with the client. This worker would be the key contact for the client and family[2,7] • An ESD team should be organized by a team coordinator [2] • An ESD team should meet on a weekly basis[2,7]	• Key worker identified by name within one week[5]

	• Outpatient and/or community- based rehabilitation services should include the same elements as coordinated inpatient rehabilitation services: A case coordination approach including regular team communication to discuss assessment of new clients, review client management, goals, and plans for discharge or transition[1]	
• Discharge Criteria	• Variable depending on the existence and type of other community-based services operating in the area[2]	• ESD team and stroke survivor, family, carer agree that all goals have been met or potential reached[5] • ESD team discharges from program once all agreed support networks are in place and contact name and details given[5]
• Follow-up	• Processes should be in place for post-discharge telephone follow-up with patients and informal caregivers[22]	
Service Guidelines		
• Time to first visit	• "ESD services must be provided within 48 hours of discharge from an acute hospital or within 72 hours of discharge from inpatient rehabilitation"[1p.32]	• ESD contact made within 24 hours[5] • Teams must be adequately resourced; creation of a wait list is a risk to achieving the time to first visit target[8] • Consider 5 versus 7 days service delivery model in order to set up service guidelines, consider "Business" days vs. "Calendar" days[8] *Note that the first treatment date is not the date when the patient is seen for assessment to determine eligibility. *Consider need to align with data collection methodology (e.g. translating hours (48h, 72h) into days (2d, 3d))
• Length of service	• The length of intervention offered by ESD should be based on the patient's need and the existence and type of other community-based stroke services operating in the area[2,20]	• Mild disability 4-6 weeks, moderate disability 6-8 weeks, tapering of services as indicated[6] • Trials of ESD reported length of service between 4-5 weeks[10,12,13,14]

• Number of visits per week	• Services should be provided 5 days per week at the same level of intensity as they would have received in the inpatient setting to meet patient needs[1] • Patients should receive rehabilitation therapies of appropriate intensity and duration, individually designed to meet their needs for optimal recovery and tolerance levels[20]	**Suggested distribution of visits**[6] • Therapist will visit clients 3 times per week (moderate stroke) or 2 times per week (mild stroke)[6] • Therapists will see the clients over 1.5 hours/visit; target is 2 hours/visit[6] • Most sessions have therapist:client ratios of 1:1 or 2:1[6] • Therapy assistants will see clients 5 times per week[6]
Location		
• ESD Team Accountability/ Reporting	• An ESD team should be based in the hospital[2,20]	• Staff are all employed by the hospital[5]
• Service Delivery	• An ESD team should plan and coordinate both discharge from hospital and provide rehabilitation and support in the home/community[1,2] • ESD provides rehabilitation in a more relevant environment (home versus hospital)[7]	• Services may occur in a variety of settings in the community depending on patient's goal[5] • Implementation in rural areas will require special consideration (e.g. staffing, travel) to address provision of service in areas where fewer patients are dispersed over greater distances[2]

Evaluation

- Consider recommendations of Health Quality Ontario and the Ministry of Health and Long-Term Care in the Quality-Based Procedures: Clinical Handbook for Stroke (Acute and Postacute) (February 2015)[20] and the Rehab Care Alliance Minimum Data Set for Outpatient/Ambulatory Care (in development at time of completing this document).
- Note that supplementary services received during ESD (e.g. from Community Care Access Centres) or that are available upon discharge (e.g. outpatient rehabilitation) may influence evaluation outcomes.
- Note that suggested measurement tools must be validated for use with the population admitted to the ESD service.

Recommended Key Indicators

1. Access – Proportion of stroke/TIA patients discharged from hospital that are referred to ESD services
2. Timeliness – Proportion of stroke/TIA patients that start ESD within 48 hours (2 days) of discharge from acute care and 72 hours (3 days) from inpatient rehabilitation
3. Intensity – Average # of minutes of therapy per day received by stroke patients from/by each of OT, PT, and S-LP
4. Clinical Outcomes – Proportion of patients achieving their rehabilitation goals using the Canadian Occupational Performance Measure (COPM); Change in score on the Reintegration to Normal Living Index (RNLI) (participation measure)

Proposed Indicators/Data Elements

• Patient/Caregiver Experience	• Patient and caregiver satisfaction with ESD services[2] • Specific measures of caregiver stress, strain, and burden may be more useful than evaluation of caregiver health status score/quality of life or general health/mood[2]	**Suggested Tools or Measures:** ○ client and caregiver satisfaction survey[4,6,8,14,15] ○ percent who would recommend ESD to a friend or family[6] ○ Caregiver Assistance and Confidence Scale[8] ○ Bakas Caregiver Outcomes Scale[8] ○ Caregiver Strain Index[10,11,13,15] Cobley[4] recommends evaluating: • if carer has sufficient knowledge in caring for the stroke survivor • the client's level of satisfaction around the transition between ESD and future services

		• the level of understanding regarding causes of stroke, secondary stroke prevention and supports available post discharge Literature regarding evaluation of the patient experience is evolving. Patient/carer goal achievement could inform this construct: • Patient goal achievement ○ Suggested tool: COPM[6] • Carer goal achievement[4,11] Note - patient/caregiver satisfaction with ESD services can be impacted by supplementary services received while on service and available after discharge.

• Clinical Outcomes	• Magnitude of change in functional status scores, using a standardized measurement tool[1]
	• Degree of dependence/stroke severity[2]
	• Subjective health status score/quality of life measure[2]
	• General health/mood[2]
	• ADL ability[2]
	• Rates of institutionalization[2]
		Tools for Consideration:
		• Functional status/degree of dependence/stroke severity:
		  ○ FIM[8]
		  ○ Stroke Impact Scale[8]
		
		• Subjective health status score/general health/quality of life (QOL):
		  ○ EuroQOL (EQ-5D)[23], SF-36[12,13]
		  ○ Stroke Specific QOL (SSQOL)[24]
		
		• Mood
		  ○ Hospital Anxiety and Depression Scale (HADS)[8], PHQ-9[25]
		• ADL ability
		  ○ FIM[8]
		
		Additional outcomes/tools:
		• Participation
		  ○ Reintegration to Normal Living Index (RNLI)[8]
		  ○ COPM, Goal Attainment Scale (GAS)[26]
		
		• Patient goal achievement
		  ○ COPM[6]

		System Level Indicators: • Monitor Ontario Stroke Network Report Card Indicator 19: Proportion of stroke/TIA patients d/c from acute care to LTC/CCC (excluding patients originating from LTC/CCC)] *population based analysis (patients LHIN) • Monitor hospital readmission rates within 90 days • Monitor LTC admissions within a year following stroke Note - Clinical outcomes can be impacted by the intensity of rehabilitation received and the clinical expertise of the team members (See indicators in Access and Transition section below).
• Access and Transition	• Median length of time between referral and admission, commencement of therapy[1] • Frequency and duration of services provided by rehabilitation professionals[1] • Length of stay in hospital[2] • Readmission rates to hospital due to stroke related causes[2] • Rates of institutionalization[2]	**System Level:** • Align reporting of readmission and institutionalization rates with Ontario Stroke Report Cards • Monitor LOS (median/mean) of acute and inpatient rehabilitation admissions • Monitor proportion of patients admitted to inpatient rehab by Rehabilitation Patient Group (RPG) **Program Level:** • Proportion of patients whose first treatment date is within 48 hours of discharge from an acute care facility or within 72 hours from inpatient rehabilitation *Note that the first treatment date is not the date when the patient is seen for assessment to determine eligibility *Consider need to align with data collection methodology (e.g. translating hours (48h, 72h) into days (2d, 3d)) • Proportion of patients referred to ESD by referral source (acute vs inpatient rehab) • Proportion of patients admitted to ESD (of those referred) • Proportion of patients referred to ESD that were denied treatment • Reason for denial

		• Proportion of patients referred to ESD that received care from a specialized*, interprofessional team *Specialized has been defined as *" having at least 80% of the ESD team members caseload confined to individuals with stroke*"[16] • Proportion of patients referred to ESD that received ESD services 5 days per week **Program Data Elements:** • Referral date • Referring source • Number of referrals (per period) • Number of admissions (per period) • Number of denials (per period), reason • Date of first treatment session (per health profession) • Date of last visit • Active length of stay/Service Period (first treatment session – last visit, calculated by calendar days) *Note: Consideration must be given to address clients who remain on caseload (inactive), e.g. have scheduled follow-up 3 months after last visit. It is recommended that this be tracked separately from active LOS. • Number of visits, per health profession and for all team members • Number of minutes of direct therapy (per visit, per health profession) [Rehabilitation Intensity – OSN definition *"The amount of time the patient spends in individual, goal-directed rehabilitation therapy, focused on physical, functional, cognitive, perceptual and social goals to maximize the patient's recovery, over a seven day/week period. It is time that a **patient** is engaged in active face to face treatment, which is monitored or guided by a therapist*"][27] • Number of minutes spent on interprofessional collaboration (i.e. team meetings)

		Monitor: • Other support and rehab services received (e.g Community Care Access Centres [CCAC]) • Services to which the patient and carer are referred upon discharge from ESD (e.g. outpatient rehabilitation)
• Financial Performance Evaluation of financial impact should consider patient-level direct care costs, organizational program costs, and health system costs, (i.e. impact across sectors)	• Cost of ESD (success would be indicated by - the annual cost of the ESD team should be less or equal to the annual savings made by reduction in LOS in hospital)[2] – cost savings calculated from decreased acute and rehab LOS, decreased LTC admissions within year, decreased hospital readmissions	• Determine cost per person served: a) Number of discharged patients treated by the program per period b) Number of visits / attendances (average / median) per health profession and for all health professions received by each patient in the episode of care c) Number of minutes of direct therapy provided to the patient per episode of care (per health profession and for all health professions)

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