Table D2. Studies of wheeled mobility service delivery

| **Reference**  **Study Purpose** | **Population Included** | **Study Design**  **Sample Size** | **Elements of Service Delivery Studied** | **Primary Outcomes Assessed**  **(Assessment Tool)** | **Dissatisfaction with Service Delivery** |
| --- | --- | --- | --- | --- | --- |
| Barlow, 200961  To compare the effectiveness, client satisfaction, cost, and timeliness of wheelchair seating and positioning interventions provided by telerehabilitation and face-to-face. | Cases included clients assessed by telerehabilitation by the GlenRose Seating Service based in Edmonton. Two comparison groups (one urban and one rural) were assessed face-to-face. Comparisons matched by age, diagnosis, and type of seating components received.  Age range: 3-87  Conditions included:  progressive neurological diagnosis,  Acquired neurological diagnosis: 56% | Case-control  N=30 (10 per group) | Setting (telerehabilitation vs. face-to-face)  Travel costs  Service provision time  Wait times  Completion times | Satisfaction (QUEST 2.0a), achievement of seating intervention goals | Not reported |
| Batavia, 199052  To identify and prioritize factors used by long-term users of assistive technology in assessing their devices. | A panel of consumer experts with mobility impairments.  Age range: 31-51  Conditions included: MS, SCI, polio, MD, and CP | Cross-sectional/Qualitative  N=6 | Identification of assistive technology factors important to consumers. | Consumer defined satisfaction | Not reported |

Table D2. Studies of wheeled mobility service delivery

| **Reference**  **Study Purpose** | **Population Included** | **Study Design**  **Sample Size** | **Elements of Service Delivery Studied** | **Primary Outcomes Assessed**  **(Assessment Tool)** | **Dissatisfaction with Service Delivery** |
| --- | --- | --- | --- | --- | --- |
| Beaumont-White, 199756  To identify problems with issue and possible areas for improvements to the practice of wheelchair issuance in a London wheelchair service. | Experienced wheelchair users of a London wheelchair service.  Age: Not reported  Conditions included: Not reported | Cross-sectional  N=27 | Issue detail, therapy input before supply, general maintenance, written information offered and issued, use of the approved repairer service, wheelchair service support, and additional needs unmet by the wheelchair service and ideas for improvement. | Current level of usage, Problems with wheelchair issue | Not reported |
| Bergstrom, 200671  To investigate how adults with SCI assess their satisfaction regarding several aspects of their manual wheelchair. | Individuals with SCIs using manual wheelchairs.  Mean age: 49.7  Conditions included: SCI | Cross-sectional  N=124 | Service delivery  Repair service  Professional service  Followup | User satisfaction with various aspects of the wheelchair as well as the service.  (QUEST 2.0a) | Not reported |
| Dicianno, 200965  To evaluate the association between the use of mobility devices and socialization. | Adults with SB attending University of Pittsburgh-based clinic.  Mean age: 34  Conditions included: SB | Retrospective Cohort  N=208 | Setting (attainment of wheelchair at specialized AT clinic or not) | Physical and Cognitive independence, Mobility, Occupation, Social Integration, Economic , Satisfaction,  WC repairs  (CHART-SFb) | Not reported |

| Table D2. Studies of wheeled mobility service delivery (continued) | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Reference**  **Study Purpose** | **Population Included** | **Study Design**  **Sample Size** | **Elements of Service Delivery Studied** | **Primary Outcomes Assessed**  **(Assessment Tool)** | **Dissatisfaction with Service Delivery** |
| Evans, 200769  To qualitatively examine the older EPIOC users’ satisfaction with the chair and service providers. | Older adult EPIOC users with severe mobility disabilities recruited through a specialist wheelchair service database.  Mean age: 69  Conditions included: SCI, MS, Stroke, RA, Multiple disabilities, and RA | Cross-sectional/Qualitative  N=15 | Provision of safety training; waiting times for assessments and delivery; repair services | Frequency and quality of chair activity; safety and satisfaction with their EPIOC-related services provided, feelings of insecurity in the chair | Wait times for appointments and chairs, disease progression while waiting for delivery of wheelchair, adjustments and repairs. |
| Evans, 200767  To qualitatively examine young EPIOC users’ satisfaction with the chair and service providers. | Young EPIOC Users recruited through a specialist wheelchair service database.  Mean age: 14.5  Conditions included: MD, CP, and other | Cross-sectional/Qualitative  N=18 | Provision of safety training; waiting times for assessments and delivery; repair services | Functioning with the EPIOC, safety of EPIOC, Pain/discomfort, satisfaction with service and support  (EQ-5Dc) | Wait times for initial assessment and delivery, patient involvement in choice products |
| Garber, 200270  To determine the extent to which wheelchairs prescribed during rehabilitation after cerebral vascular incident are used and perceived as satisfactorily meeting individual mobility, functional, psychological, and social needs of veterans who have had a stroke. | Veterans currently on the patient roster of the Rehabilitation Service at the Houston Veterans Affairs Medical Center (VAMC), discharged with a primary diagnosis of stroke between 1989 and 1999 and being followed for medical, mobility, or functional problems or stroke recurrence, living in Houston metropolitan area, not deceased, not currently hospitalized, and provided wheelchair upon discharge.  Mean age=65  Conditions included: previous stroke | Cross-sectional/Qualitative  N=49. | Receipt of written information about wheelchair, receipt of verbal instructions about use or maintenance of the wheelchair, informed who to contact if they had problems with wheelchair, receipt of verbal safety information. | Use and satisfaction with wheelchair | Wait time for equipment, equipment prescribed |
| Hoenig, 200563  To determine the effect of differing methods of dispensing wheelchairs. | Community-dwelling, cognitively intact patients prescribed a standard manual wheelchair.  Mean age: 65  Conditions included: symptoms of weakness, poor balance/dizziness, fear of falling, shortness of breath, and other | Quasi-randomized trial  N=84 | Multifactorial intervention consisting of an expert physical/occupational therapist who used a scripted evaluation that included an evaluation based on medical record review and self-reported and physical performance measure; individualization of the wheelchair and initiation or orders for additional occupational/physical therapy, equipment, or home modifications as needed; multimodal patient education; and telephone followup at 3 and 6 weeks vs. usual care. | Amount of wheelchair use. Secondary outcomes of shoulder pain, wheelchair comfort or confidence, or home modifications. | Not reported |
| Hoenig, 200764  To investigate the effects of providing a motorized scooter on physical performance and mobility. | Ambulatory community-dwelling adults without cardiac disease and stable rheumatic disease.  Mean age=63  White: 60%  Male: 79%  Conditions included: RA or OA of the knee | Randomized Controlled Trial  N=43 | Provision of motorized scooter and lift vs. usual care. | Six-minute walk distance, Mobility, Scooter accidents, Satisfaction | Not reported |
| Karmarker, 200957  To describe older adults opinions regarding satisfaction with wheelchair and service delivery. | Convenience sample of 132 individuals participating in the National Veterans Wheelchair Games in Omaha, Nebraska. Participants from VA affiliated nursing homes, private nursing homes, and community dwelling. | Cross-sectional  N=132 | Service delivery  Repair service  Professional service  Followup | User satisfaction with various aspects of the wheelchair as well as the service.  (QUEST 2.0a) | Not reported |
| Kittel, 200213  To identify factors which influence individuals with a spinal cord injury to abandon their first wheelchair before 5 years of use. | Individuals who abandoned first manual wheelchair before five years of use.  Ages: 26, 33, 37  Conditions included: SCI | Case series/Qualitative  N=3 | Reflections on wheelchair prescription experience | Abandonment | Patient knowledge of and involvement in process |
| McDonald, 200754  To investigate and compare opinions of parents and therapists of children using adaptive seating systems. | Parents and local therapists matched and assessed regarding child.  Age: Not reported  Conditions included: severe CP | Cross-sectional/Qualitative  N=30 matched parent-therapist pairs | Level of agreement about between parent therapist pair on opinions regarding child’s seating and mobility needs, abilities, preferences. | Use, comfort, satisfaction | Not reported |
| Pimentel, 200858  To explore assessment practices for clients requiring standard wheelchairs in one wheelchair service in the UK. | Individuals assessed for wheelchair during 4-month timeframe once new assessment practices were put in place.  Mean age: 73  Age range: 12-102 conditions included: Not reported | Cross-sectional/Qualitative  N=35 | Evaluation of new assessment practices focusing on soliciting goals from clients and using these as a framework for the prescription process. | Achievement of goals | Not reported |
| Post, 199773  To examine individuals with SCI satisfaction with available services and service delivery procedures. | Adults previously rehabilitated in a specialized rehab center between 1986 and 1992 currently living in the community.  Mean age: 39.4  Conditions included: SCI | Cross-sectional/Qualitative  N=318 | Availability of services | Functional health status, life satisfaction, satisfaction with available services, satisfaction with service delivery procedures | Not reported |
| Richardson, 200974  To identify areas of difficulty encountered by a regional wheelchair service in providing EPIOCs to those with MD in the early years of their provision. | EPIOC users at the EPIOC clinic in Stanmore, UK departmental database seen between April 1997 and March 2000.  Mean age: 25  Conditions included: MD | Retrospective cohort  N=29 | Medical chart documentation of outcomes 1) at initial assessment, 2) within the first 12 months and 3) between 13 and 24 months following the delivery of the chair. | Weakness  Pain or discomfort  Deformities  Other medical issues  Weight change  Functional issues  Posture  Wheelchair driving skills  Other issues | Not reported |
| Samuelsson, 200166  To analyze the effects of an intervention to address wheelchair problems improves effectiveness from the consumer perspective. | Active wheelchair users consecutively visiting the wheelchair seating department due to problems with seating at the University Hospital in Linköping, Sweden.  Mean age: 43  Conditions included: SCI, MS, Stroke, CP,  SB, Mental disability | Retrospective cohort  N=38 | Visits to wheelchair seating department for problems with wheelchair | Wheelchair functionality, seating comfort, pain, occupational performance, pressure distribution | Not reported |
| Samuelsson, 200868  To evaluate user satisfaction with, use and usefulness of, and make comparison between two types of mobility devices. | Random sample of mobility assistive device users (rollators and manual wheelchairs) in Sweden.  Mean age: 69.8  Conditions included: Not reported | Cross-sectional  N= 262 (175 rollator users, 87 wheelchair users) | Device type prescribed (Rollator or manual wheelchair provision); Service delivery, repairs and services, professional service, and followup. | Use, satisfaction with device and services  (QUEST 2.0) | Not reported |
| Schein, 201062  To evaluate the equivalency of wheeled mobility and seating assessments delivered in-person (IP) vs. Telerehabilitation (TR) at remotely located clinics. | Adults in need of new wheeled mobility in Western Pennsylvania.  Mean age: 54.9 (TR), 50.3 (IP)  Conditions included: Progressive, SCI, Orthopedic, Cardiovascular, CNS | Controlled trial  N=98 | Setting: In-person vs. telerehabilitation | Functioning  (FEW) | Not reported |
| Suzuki, 200072  To explore client satisfaction and identify program areas needing improvement at the Rehabilitation Hospital of the Pacific’s Wheelchair Seating Clinic in Honolulu, Hawaii. | Adults serviced by the formal seating clinic who had completed the initial interview and received their equipment by April 1999.  Age: Not reported  Conditions included: Not reported | Cross-sectional  N=26 | Assessment process and followup | Satisfaction | Not reported |
| Telfer, 201055  To investigate the views of teaching staff members at special needs schools and of the parents of children who attended these schools on the provision and current technology of seating systems. | Teaching staff and parents of children in special needs schools in central Scotland. Teachers that had worked with the children for at least 6 months and parents whose children had used a piece of adaptive seating equipment for at least 6 months. Parents were encouraged to discuss the survey with their child.  Age: Not reported  Conditions included: neuromuscular disorder. | Cross sectional/Qualitative  N= 33 teaching staff, 17 parents | Importance of different functions of seating system, satisfaction with speed at which new or replacement models are issued, descriptions of completed repairs or adjustments. | Time spent transferring child between and to and from seating systems on an average day, satisfaction with how seating system accommodated growth, and other additional comments from participants. | Not reported |
| Ward, 201053  To determine the features most frequently selected in a PWC, level of satisfaction with the selections, and how often the PWC features are used by patients diagnosed with ALS/MND. | Convenience sample of current patients of ALS/Muscular Dystrophy Association center in Charlotte, NC.  Mean age: 57.9  Conditions included: ALS | Cross-sectional  N=32 | Patterns of wheelchair selection and other aspects of decision-making processes that patients experience before, during, and after acquiring a PWC. | Initial and current satisfaction and use of chair and specific features (cushion, headrest, armrests, joystick, backrest, leg rests, overall comfort, ease of use) | Not reported |
| White, 1998 | A four stage data collection method was used to collect information from wheelchair service providers, manual wheelchair users, power wheelchair users, and specialty seating evaluations in England.  Age: 80% of manual chair users over 60; 55% of power chair users over 60.  Conditions: main conditions among manual chair users included aging, arthritis, and cardiovascular disease; main condition in power chair users was neurological disorder. | Cross-sectional/Qualitative  N= 125 wheelchair therapists; 84 manual chair users; 27 power chair users, and 19 special seating users. | Wheelchair therapists: referral procedures, assessment approaches, qualifications, training needs,  Wheelchair users: assessment approach, | Use, delivery times, knowledge of wheelchair service and repairs, satisfaction with service, level of need fulfillment, chair preferences. | Accuracy of information on referral form, training of wheelchair therapists, adequacy of assessment, service delays |
| Wressle, 200459 | Adult users of mobility devices in Sweden  Mean age: 68 | Cross-sectional  N=209 | Service delivery  Repair service  Professional service  Followup | User satisfaction with various aspects of the wheelchair as well as the service.  (QUEST 2.0a) | Not reported |

**Note:** Reference listing appears in References.  
a QUEST–Quebec User Evaluation Satisfaction with Assistive Technology  
b CHART-SF–Craig Handicap Assessment Reporting Technique-Short Form  
c EU-5D–EuroQoL   
d FEW–Functioning Everyday with Wheelchair