In-reach Rehabilitation Toolkit Project

Current State Analysis Report

April 2026

DELIVERING FOR QUEENSLAND | Queensland Government

In-reach Rehabilitation Toolkit

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1. Background

1.1 Purpose of review

This Current State Analysis (CSA) has been developed to provide a comprehensive overview of existing in-reach rehabilitation services within Queensland Health and interstate. The aim is to understand how these services are currently delivered across Queensland Hospital and Health Services (HHSs) and in interstate health services, identify strengths and gaps, and inform future service planning and improvement initiatives for the final *In-reach Rehabilitation Toolkit*.

The CSA supports strategic decision-making by offering insights into service models, workforce capacity, consumer experience, and system performance. It is intended to be used by Queensland Health stakeholders to guide enhancements in service delivery, integration, and sustainability.

The analysis includes:

- Literature review: A scan of national and international evidence on best practices and models of in-reach rehabilitation service delivery or acute or early access rehabilitation.
- Benchmarking: Comparative analysis of Queensland Health and interstate in-reach services against other jurisdictions and recognised standards to identify opportunities for alignment and improvement.
- Consumer feedback: Insights gathered from two patients regarding their experiences with in-reach services, highlighting areas of strength and opportunities for improvement.
- Future state considerations: Considerations for strengthening in-reach rehabilitation within Queensland Health and ways in which the *In-reach Rehabilitation Toolkit* can support this vision.

Findings from this CSA have informed the *In-reach Rehabilitation Toolkit* with the key resources outlined in the user guide. The toolkit was designed in consultation with a Clinical Advisory Group of clinicians from various sites across Queensland, details of participants available in Appendix 7.

This report describes the current state of in-reach rehabilitation services to inform service planning and improvement. It does not represent an evaluation of individual hospital performance or commentary on funding adequacy, and findings should be interpreted in the context of local service models, case mix, and operational environments.

1.2 Definition of in-reach rehabilitation

In-reach rehabilitation is considered as a model of care in which specialist rehabilitation services are provided to patients on the acute wards that are under the care of acute physicians or surgeons. This is often run parallel or jointly with acute therapists, though some services adopt a “takeover of care” model. Eligible patients should have rehabilitation needs or goals that may be met by a rehabilitation specialist multidisciplinary team, comprised of at least three disciplines. In-reach rehabilitation models aim to optimise patient outcomes including function and goals and improve patient flow through avoidance or reduction in inpatient rehabilitation admissions. In-reach rehabilitation models to date have been mobile across acute hospital wards and aim to provide an increase in therapy intensity, on par with an inpatient rehabilitation facility.

(Seeto, 2023; Wu et al, 2019, Boyle, 2017, NSW Agency for Clinical Change, 2025).

2. Literature review

2.1 Purpose of literature search

The purpose of this literature search is to critically examine and synthesise current evidence regarding early and in-reach rehabilitation models across acute care settings. This review supports the current state analysis by identifying best practices, evaluating clinical and cost-effectiveness, and exploring implementation strategies relevant to multidisciplinary rehabilitation services. The literature was selected to inform service design, workforce planning, and model development, with a focus on feasibility, functional outcomes, and relevance to practice.

2.2 Summary of evidence

Despite variation across clinical settings, current available evidence suggests that in-reach rehabilitation, early access or acute rehabilitation models are feasible and provide meaningful benefits for patient outcomes and health system performance.

Stroke rehabilitation

Stroke specific in-reach or acute rehabilitation models such as the Acute Hospital Rehabilitation Intensive Services (ARISE*)*, at Johns Hopkins Hospital, Baltimore USA and the Stroke Specific In-reach Rehabilitation (SSIR*)*, at Royal North Shore Hospital, Sydney, illustrate the feasibility of stroke specific services and demonstrate how embedding inpatient rehabilitation principles into acute stroke care can optimise recovery and patient flow (Langton-Frost et al., 2023; Parker & Yiu, 2023). While ARISE focused on model development and implementation, SSIR reported clinically significant outcomes with nearly 40 per cent of patients discharged home directly from acute care and a mean Functional Independence Measure (FIM) efficiency of 1.6 (Langton-Frost et al., 2023; Parker & Yiu, 2023). Evidence from large cohort studies confirms that very early mobilisation and high-frequency therapy improve functional outcomes, with improvements to modified Rankin Scores (mRS), without increasing complications or costs (Matsui et al., 2010; Oyanagi et al., 2021). These results support early rehabilitation as a cornerstone of stroke care.

Trauma and multi-trauma care

Early rehabilitation models such as the Fast Track program*,* which integrates early coordination between trauma surgeons and rehabilitation physicians with early multidisciplinary treatment, accelerated functional recovery, achieving peak improvement at six months compared to nine months for conventional care (Bouman et al., 2017). Similarly, the Alfred Hospital's Allied Health Model of Care (AHMOC), significantly improved discharge home rates and return-to-work outcomes at 12 months, demonstrating the potential for early allied health involvement to reduce disability and enhance long-term independence (Kimmel et al., 2025). Early intensive rehabilitation for traumatic brain injury (TBI) patients produced substantial gains in motor function and Activities of Daily Living (ADLs), leveraging neuroplasticity during the critical recovery window (Fan et al., 2020; Choi et al., 2008; Lui et al., 2014). Fan et al.'s study on early intensive rehabilitation for Traumatic Brain Injury (TBI) demonstrated clinically significant improvements in Fugl-Meyer Assessment (FMA), and further improvements in both FMA and Barthel Index (BI) scores at six months for the intervention group (Fan et al., 2020). Similarly, Choi et al.'s multimodal early rehabilitation study reported that 63 per cent of participants achieved an extended Barthel Index (eBI) score of 30 or higher, and 32 per cent achieved independence with eBI scores between 90 and 100 (Choi et al., 2008). Lui et al.'s study at Singapore General Hospital, found statistically significant FIM gain of 18.4 points for the early integrated rehabilitation group (Lui et al., 2014). These findings underscore the importance of early, structured, multidisciplinary intervention for trauma populations, particularly those with traumatic brain injuries.

Intensive care unit and critical care survivors

Systematic reviews and quality improvement initiatives demonstrate that early rehabilitation in intensive care unit (ICU) settings is safe, feasible, and associated with improved short-term physical outcomes, including reduced ICU-acquired weakness and earlier mobilisation (Castro-Avila et al., 2015; Fuke et al., 2018; McWilliams et al., 2019). Castro-Avila et al.'s systematic review indicated that early rehabilitation primarily improved walking ability, with significantly more patients walking without assistance at hospital discharge (Castro-Avila et al., 2015). Another systematic review examining early rehabilitation on post-intensive care syndrome (PICS) found that early rehabilitation significantly improved short-term physical outcomes and reduced incidence of ICU-acquired weakness compared with standard care or no early intervention (Fuke et al., 2018). McWilliams et al.'s prospective quality improvement project reported positive outcomes, including increased rates of mobilisation in ICU, reduced time to first mobility, and higher mobility scores at discharge (McWilliams et al., 2019). Interventions such as twice-daily sessions for ventilated patients shortened mechanical ventilation duration and ICU length of stay, highlighting the potential for early rehab to mitigate complications and accelerate recovery (Dong et al., 2014).

Older adults, surgical cohorts and specialised populations

Early rehabilitation for frail older adults during acute hospitalisation can mitigate functional decline, particularly when programs include discharge planning and multidisciplinary input (Heldmann et al., 2019). Post-surgical interventions, such as early intensive rehabilitation combined with patient education, improved transfer ability and mobility after low back surgery reinforcing the value of early mobilisation and structured prescribed exercise programs (Bizheva et al., 2016). Neuro-oncology programs improved functional outcomes measured by United Kingdom Functional Independence Measure + Functional Assessment Measure (UK FIM FAM) scores, enhanced quality of life, and improved patient experience while supporting patient flow and reducing dependency (Lacey et al., 2018). Similarly, heart and lung transplant recipients benefited from structured in-reach rehabilitation, achieving clinically meaningful functional gains and higher rates of discharge home (Wu et al., 2025). Specifically, outcomes included a significant increase in median FIM score from 77 to 100 and 43.9 per cent of patients discharged directly home from acute care (Wu et al., 2025). Even in highly specialised cases, such as morbidly obese patients' post-sepsis, early rehabilitation facilitated mobility improvements, reducing care burden and supported discharge planning (Narayanan et al., 2020).

System-level benefits

Beyond individual outcomes, in-reach and early or acute rehabilitation models contribute to improved patient flow, reduced reliance on subacute inpatient rehabilitation, and potential cost savings. Screening tools such as the *Proactive Rehabilitation Screening (PReS) tool* play a critical role in enabling timely identification of patients who are likely to benefit from rehabilitation, thereby reducing delays and optimising resource allocation. Earlier conceptual work demonstrated this potential (Wu et al., 2021), and more recent evidence reinforces these system level benefits. The newly validated modified PReS tool has shown high predictive accuracy and uses simple, objective clinical variables to support earlier and more reliable identification of rehabilitation needs, thereby improving workflow efficiency and supporting streamlined patient transitions in acute care settings (Wu et al., 2026). While formal economic evaluations remain limited, emerging evidence continues to suggest that early rehabilitation may offer cost-effectiveness advantages, particularly for patients with moderate disability, by reducing care demands and easing staffing pressures (Angerova et al., 2020).

Overall evidence message

Collectively, these findings affirm that early and in-reach rehabilitation is feasible and clinically impactful across a range of patient populations. By improving functional outcomes, enhancing patient experience, and supporting efficient care transitions, these models represent a critical evolution in acute care delivery. Continued investment in early rehabilitation strategies, coupled with rigorous evaluation and standardisation, will be essential to maximise benefits.

2.3 Gaps in literature

Despite growing evidence supporting in-reach or early access rehabilitation models across acute care settings, as above, significant cross-cutting gaps remain. Most studies are observational or pilot trials, with few large-scale randomised controlled trials to establish causality and generalisability (Naess et al., 2020; Wu et al., 2019). Intervention protocols vary widely in timing, intensity, and content, limiting comparability and replication (Oyanagi et al., 2021; Langton-Frost et al., 2023). Outcome measurement lacks standardisation with studies using a variety of scores to monitor change and effectiveness, making it challenging to provide consistent comparison between studies. Furthermore, long-term outcomes such as return to work, quality of life, and caregiver burden are rarely assessed, creating a gap in understanding sustained impact (Bouman et al., 2017; Kimmel et al., 2025). Economic evaluations are sparse, leaving uncertainty about cost-effectiveness and resource allocation (Angerova et al., 2020; Sahota et al., 2017). Scalability and implementation across diverse hospital contexts remain underexplored, with most evidence drawn from single-centre studies (Lacey et al., 2018; Wu et al., 2025). Finally, while there is a novel model of care for in-reach care to spinal cord injury patients, this focuses on improving access to specialised SCI expertise rather than in increase in therapy intensity or dosage (Stoikov et al., 2025). Beyond this study, search results did not indicate further research available regarding early access or acute rehabilitation for spinal cord injury, or a variety of other conditions that are key for acute rehabilitation caseloads including amputations and other neurological condition such as Guillain-Barre Syndrome or Parkinson's disease. While emerging evidence is supportive for implementation of in-reach rehabilitation, further studies with rigorous design and outcomes would be beneficial in continuing to quantify the benefits of this model of care.

3. Benchmarking

Benchmarking was undertaken with a select group of existing in-reach services across Queensland and interstate to identify key themes related to staffing models, service capacity, referral processes, and outcome measures. Participating sites were those that agreed to contribute to the benchmarking survey; as such, the sample represents a subsection of in-reach services and is not intended to be an exhaustive representation of all in-reach or rehabilitation benchmarking sites nationally. The findings from this benchmarking activity have informed the development of the Queensland *In-reach Model of Care* and the associated resources contained within the *In-reach Rehabilitation Toolkit*.

Benchmarking data were collected via a Microsoft Forms survey and disseminated through ACI NSW, AROC Community of Practice networks, and established contacts from benchmarking activities completed in 2023 during the scoping of BIRRT (Seeto, 2023). Details of participating sites are provided in Appendix 8. The following section presents a summary of the key findings arising from the benchmarking.

3.1 Service design

3.1.1 Service size

Across the Queensland hospitals reviewed, the proportion of in-reach beds compared to total hospital beds varies significantly, see figure 3.1 below. Observed ratios range from approximately 1.1 per cent to 2.1 per cent, reflecting differences in service scope, patient complexity, and operational models. This variation indicates that there is no single standard currently applied across all sites; rather, services have been designed to meet local needs and contexts.

The lower end of the range (approximately 1.7 per cent) suggests a leaner model, potentially aligned with shorter lengths of stay or narrower inclusion criteria. The higher end (around 2.1 per

cent) may reflect broader service coverage or higher patient demand. Most services fall within this spectrum, demonstrating flexibility in how in-reach capacity is configured.

This range provides a snapshot of what is currently happening in practice and serves as a useful reference point for understanding the diversity of existing service designs.

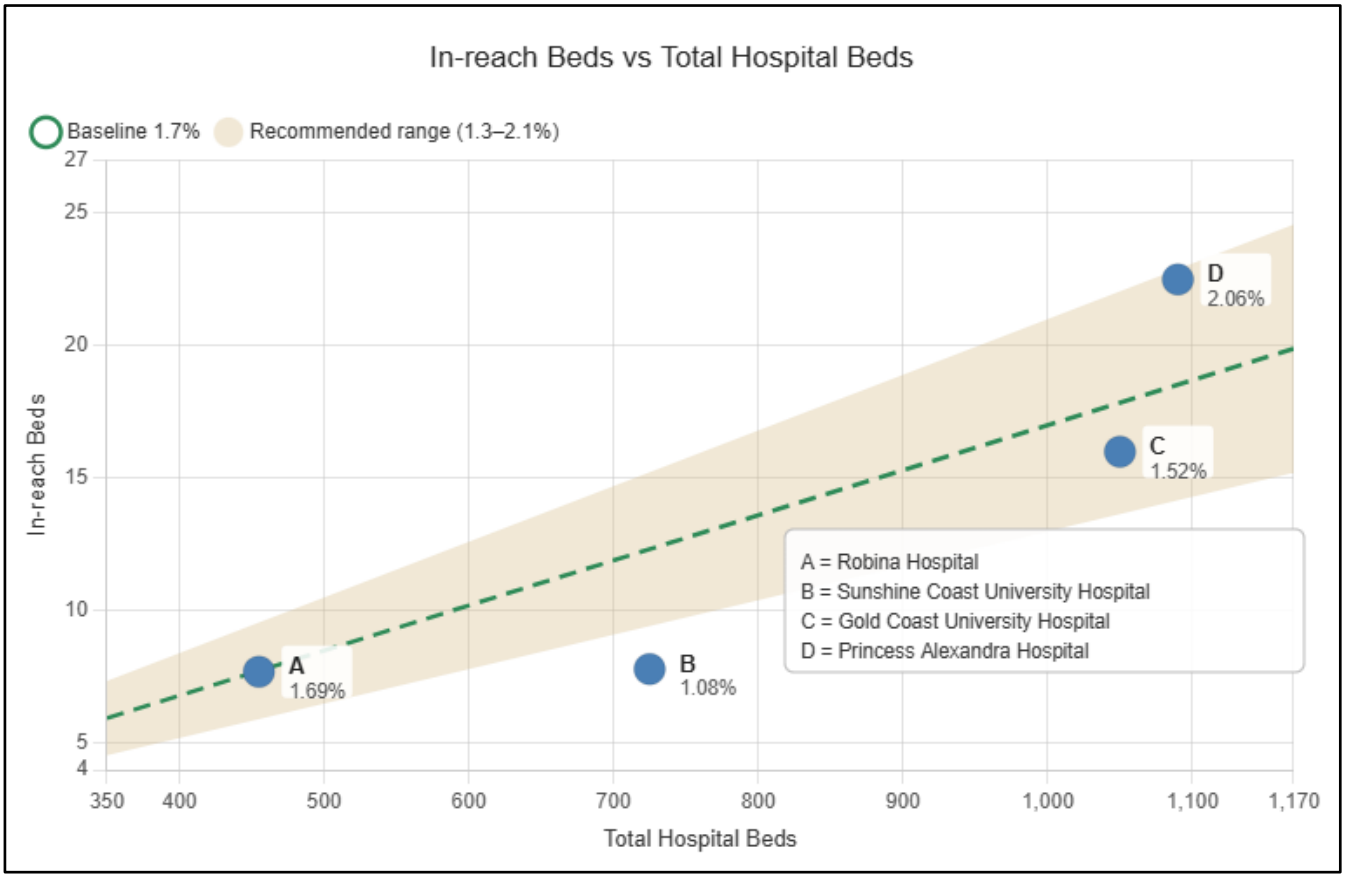

Figure 3.1 – In-reach service size compared to Queensland Health hospital size in 2025.

3.1.2 Workforce composition

Workforce overview

The workforce composition across in-reach services reflects a strong commitment to multidisciplinary care but also reveals variability in discipline coverage and staffing depth. The figures below, Figures 3.2, Figure 3.3, and Figure 3.4, highlight the workforce composition of in-reach services across the country. All surveyed services include allied health disciplines of physiotherapy and occupational therapy, alongside medical input and nursing coordination. However, the extent of representation differs significantly. Some teams operate with advanced and senior clinicians across multiple streams, while others rely on minimal coverage or shared roles.

Allied health assistants (AHA) are present in most services, supporting therapy delivery and patient engagement, though FTE allocation varies widely. Noting that many services advocated strongly for the inclusion of AHA workforce to ensure maintenance of rehab intensity and support workforce sustainability.

Speech pathology and psychology appear less consistently, with several services identifying these as critical gaps impacting holistic rehabilitation. Similarly, social work is common but not universal, and dietetics is rarely funded within in-reach teams.

Medical staffing typically includes a registrar or rehabilitation physician, but responses highlight limited availability of senior medical officers and the need for additional FTE to strengthen clinical governance and decision-making. Nursing roles are usually embedded in most services, providing coordination and patient flow oversight, yet some sites report variable or limited nursing capacity for optimal program management. Follow up discussions revealed that many services adopt job share models with nursing staff, often shared with inpatient rehabilitation units or services.

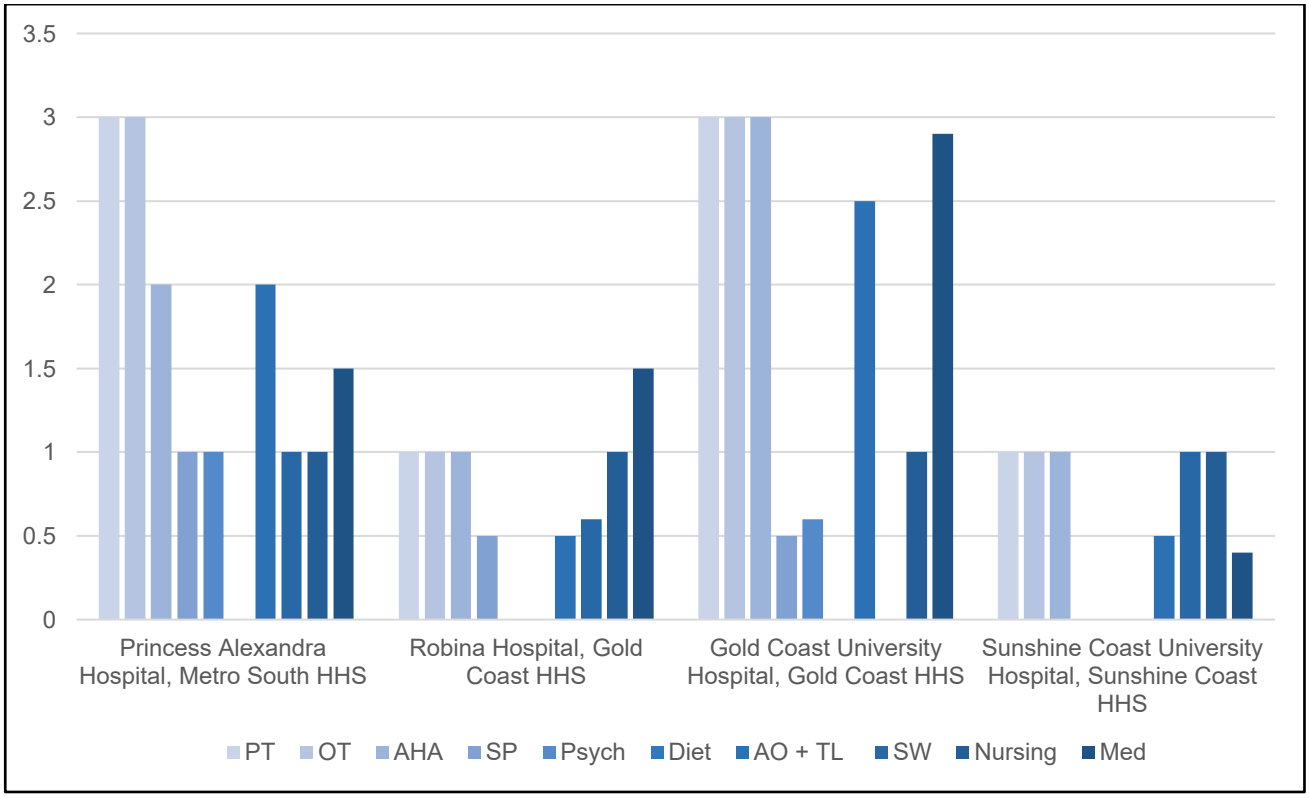

Figure 3.2 – In-reach rehabilitation workforce breakdown for Queensland 2025

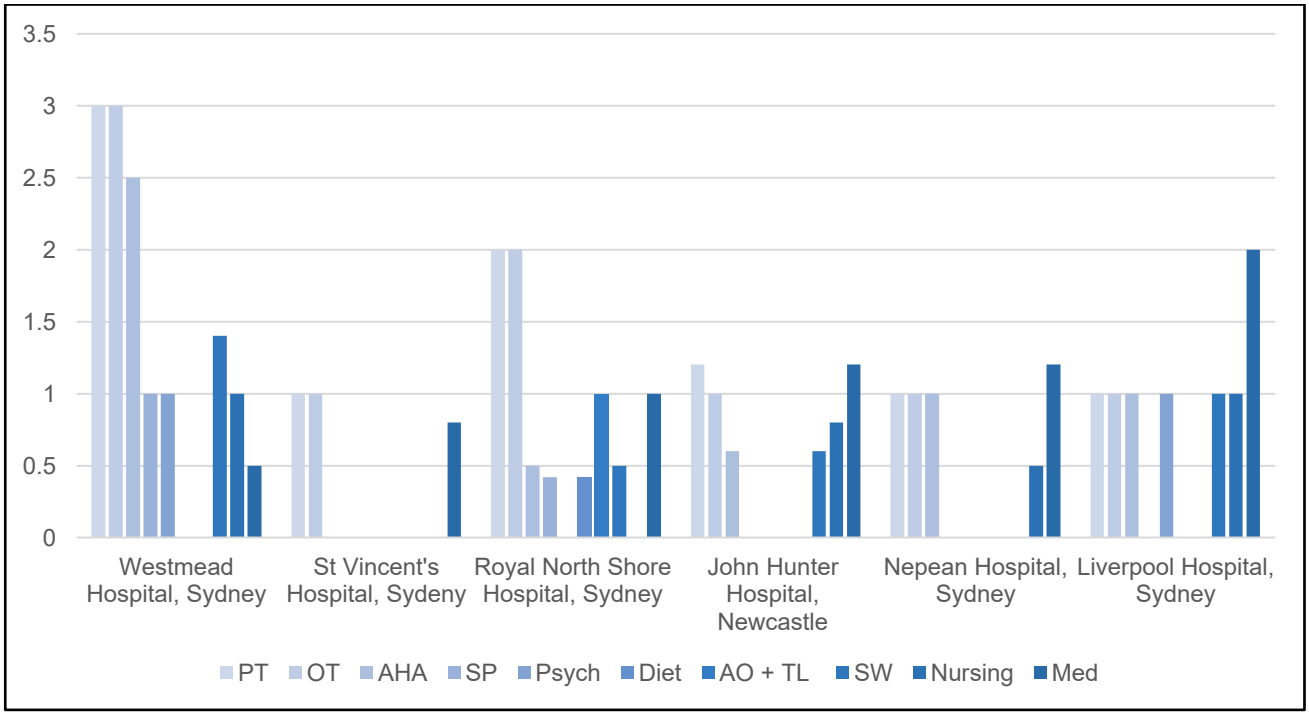

Figure – 3.3 – In-reach rehabilitation workforce breakdown for New South Wales 2025

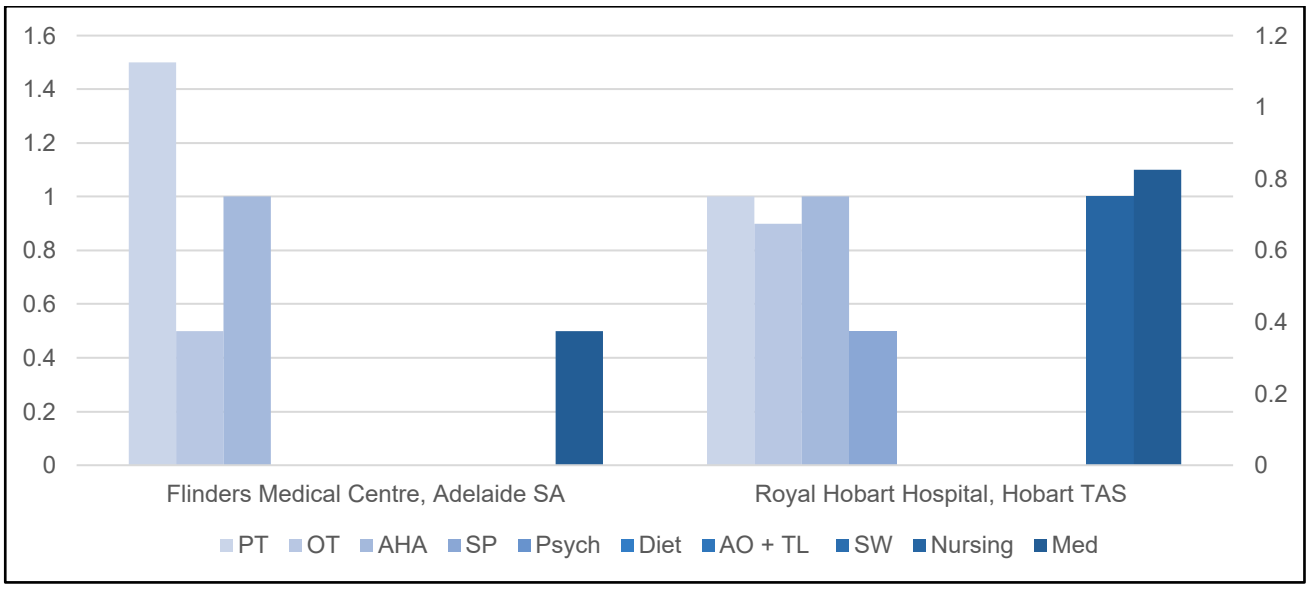

Figure 3.4 – In-reach rehabilitation workforce breakdown for South Australia and Tasmania 2025

Skill mix and seniority

The data shows a preference for senior-level clinicians in physiotherapy and occupational therapy, reflecting the complexity of patient needs and the requirement for autonomous practice in acute settings. Advanced practice roles and team leader positions are present in some services, supporting clinical leadership and operational oversight. However, inconsistencies in grade allocation and funding alignment were noted, with concerns that under-specification of levels (e.g., funding for HP4.1 when HP4.3 is required) can hinder recruitment, retention or budget management.

Capacity and workforce ratios

Workforce size relative to service capacity varies considerably as demonstrated in Figure 3.5, Figure 3.6 and Figure 3.7, below. Smaller teams manage caseloads of 6–10 patients concurrently, while larger teams support up to 23 packages. Ratios of staff to patient capacity suggest that services with broader discipline coverage and higher FTE allocations are better positioned to deliver intensive therapy and meet eligibility criteria (e.g., tolerance for two hours of therapy per day). Conversely, leaner teams may struggle to maintain therapy intensity, particularly when covering multiple wards or streams, however rationale appears driven by local context and clinical demands.

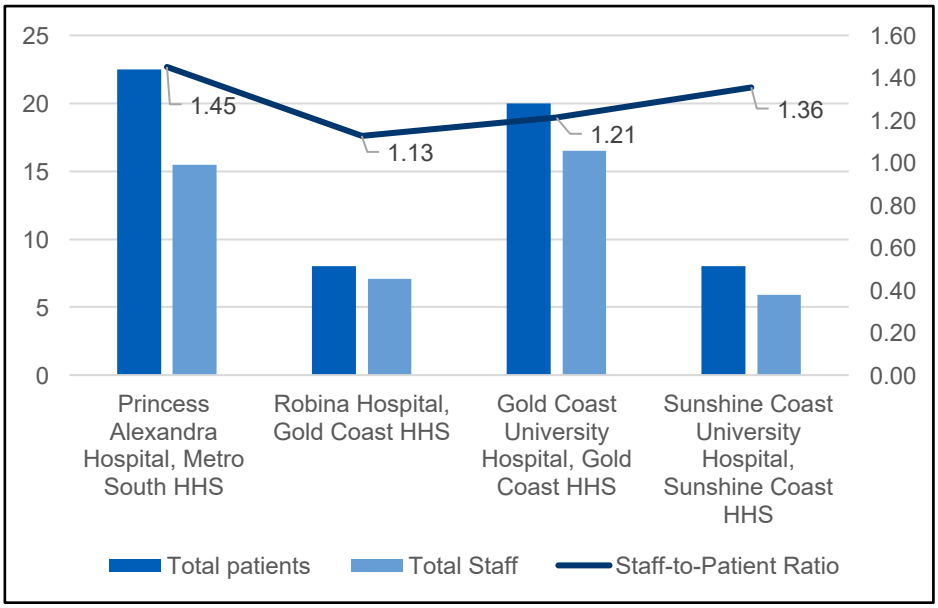

Figure 3.5 – Staff ratios for Queensland 2025

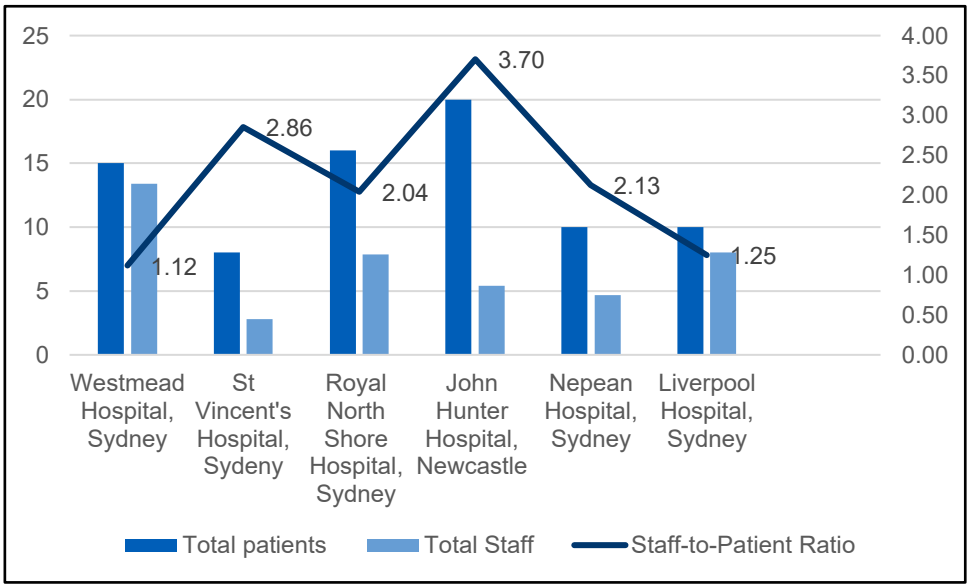

Figure 3.6 – Staff ratios for New South Wales 2025

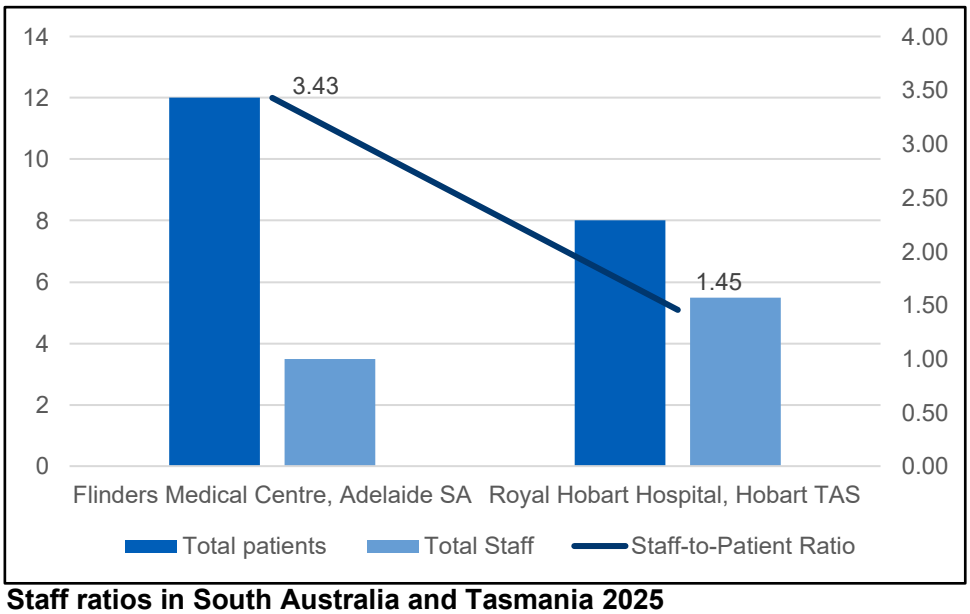

Figure 3.7 – Staff ratios in South Australia and Tasmania 2025

Common workforce challenges

Several themes emerged regarding workforce sustainability:

- Variable workforce capacity across disciplines with shortages in staffing for speech pathology, psychology, and medical roles
- Role drift, where allied health staff risk being pulled into acute workloads during shortages, compromising continuity of care
- Recruitment difficulties, linked to funding constraints and unclear career pathways
- Limited treatment spaces, which compound staffing challenges by reducing therapy efficiency.

Implications

A well-structured workforce is central to in-reach rehabilitation service success. Services that secure full multidisciplinary representation, protect roles from acute backfill, and align funding with appropriate seniority levels demonstrate greater capacity to deliver timely, intensive rehabilitation. Addressing gaps in speech pathology, psychology, and nursing coordination will be critical for achieving consistent outcomes across sites.

3.1.3 Referral pathway / patient cohorts

In-reach rehabilitation services receive referrals through a combination of electronic systems, automated triggers, and manual processes, often supplemented by proactive screening. Common inbound channels include:

- Electronic referral forms integrated with electronic medical record or hospital systems for structured triage.
- Automated or blanket referrals for predefined cohorts (e.g., stroke, trauma), ensuring early identification.
- Phone calls and paper-based forms, still used for urgent or ad hoc requests.
- Proactive screening by in-reach clinicians, particularly for high-priority streams such as stroke and neurosurgical patients.

Key patient cohorts targeted for in-reach rehabilitation include:

- Neurological conditions (stroke, brain injury, neurosurgery)
- Orthopaedic and trauma cases
- General medicine and surgical patients with functional decline
- Specialist streams (e.g., oncology, transplant, plastics/ear nose throat)

These cohorts share common eligibility criteria: medically stable, able to tolerate active therapy, and likely to benefit from early rehabilitation to reduce length of stay.

Discharge and onward referral options are diverse, reflecting the need for continuity across the rehabilitation spectrum. Common destinations include:

- On-site inpatient rehabilitation units, for patients requiring intensive therapy beyond acute care.
- Off-site subacute or slow-stream rehabilitation facilities often used when local bed capacity is limited.
- Day hospital or ambulatory outpatient programs, supporting patients who can transition to community-based therapy while still needing structured input.
- Community rehabilitation services, including publicly funded programs and home-based therapy for patients with lower complexity needs.
- Private rehabilitation providers, offering additional capacity or specialised programs for eligible patients.
- Specialist units (e.g., spinal injury, brain injury) for patients with highly specific rehabilitation requirements.

The breadth of outbound options varies by site, but most services maintain multiple pathways to avoid bottlenecks. Effective discharge planning and early engagement with downstream providers were repeatedly noted as critical for maintaining flow and preventing extended acute stays

3.1.4 Data management and outcome measures

Data collection overview

Most in-reach services report collecting a core set of patient flow and outcome data, with some variation in additional measures. Universally, services track hospital length of stay (LOS), in-reach LOS, and discharge destination, reflecting their importance for patient flow and system efficiency. These metrics are often used to demonstrate impact on acute bed utilisation and discharge planning. Several services also monitor waitlist indicators, such as time from referral to assessment and acceptance to service start, although formal key performance indicators (KPIs) for these intervals are less consistently applied. A few sites noted challenges with waitlist management due to fluctuating demand and resource constraints.

Outcome measures

Functional outcomes are a strong focus across all services:

- Functional Independence Measure (FIM) is collected at admission and discharge by every service, with most also calculating FIM change and FIM efficiency (change per day of in-reach stay).
- Some services supplement FIM with discipline-specific measures (e.g., Timed Up and Go (TUG), De Morten Mobility Index (DEMMI)) for granular tracking of mobility and functional progress.
- Patient-reported measures are emerging but less consistent:
    - Patient-Specific Functional Scale (PSFS) and Patient Reported Experience Measure (PREM) are used by a subset of services to capture goal attainment and patient experience.
    - Patient Reported Outcome Measures (PROMs) appear in a few responses, often linked to satisfaction surveys.

Benchmarking & external reporting

- Most services report outcomes to AROC (Australasian Rehabilitation Outcomes Centre), either via inpatient or in-reach datasets, supporting benchmarking and compliance. Follow up interviews have indicated that rationale was largely dependent on service funding and if inpatient data sets where already funded for on-site inpatient units. In Queensland, all existing in-reach rehabilitation services report to AROC Pathway 2 in-reach data set rather than inpatient.
- Sub-acute and non-acute (SNAP) data collection is less common, with only about half of services indicating they gather this dataset. This is largely driven by localised policy and funding metrics.
- Some services noted challenges with data completeness and consistency, particularly for FIM scoring and patient satisfaction surveys, citing time demands and skill variability.

3.2 Impact

3.2.1 Quantitative outcomes

Across four Queensland in-reach programs, Princess Alexandra Hospital (PAH), Gold Coast University Hospital (GCUH), Robina Hospital, and Sunshine Coast University Hospital (SCUH), the AROC benchmarking data show meaningful functional gains, efficient lengths of stay, and substantial community discharges despite different case mix profiles. The following data has been aggregated from the Financial Year (FY)24-25 AROC benchmarking reports from each of the individual Queensland in-reach rehabilitation services. Formal acknowledgement of these reports is embedded in the reference list. Site-level data are presented for internal benchmarking and service design purposes only and should not be interpreted as comparative performance rankings.

Functional outcomes

At an impairment level, the pattern is one of consistent functional improvement during time limited in-reach episodes, with site-specific strengths that mirror local case mix. Figure 3.8 below, indicates the mean FIM change per impairment between Queensland in-reach sites. Stroke is a clear example of divergence: SCUH records larger FIM gains than the national average (22.7 vs 12.9), indicating substantial change from a relatively short window of acute-based therapy, while PAH also performs above national for several neurological groupings, including brain injury (21.4 vs 18.1) and spinal cord (20.7 vs 14.5). GCUH tracks close to national comparators for common musculoskeletal streams (e.g., fractures), whereas Robina delivers steady gains aligned to its fracture dominant, older cohort. Overall, the data show that early, embedded MDT input produces measurable improvement across diverse impairments, and that differences between sites largely reflect case mix complexity, volumes, and local streams rather than inconsistent practice.

Where individual hospital names are shown, results should be interpreted descriptively rather than comparatively, and do not represent performance grading or benchmarking.

Impairment Group	All services (National Average)	Princess Alexandra Hospital	Sunshine Coast University Hospital	Gold Coast University Hospital	Robina Hospital
Stroke	12.9	15.8	22.7	10.4	-1.7
Brain	18.1	21.4	16.9	16.7	6.8
Neurological	14.6	17.2	8.8	15.9	7.0
Spinal Cord	14.5	20.7	15.1	7.4	-
Amputee	12.6	11.3	7.0	9.9	-
Arthritis	-	19.0	22.0	-	22.0
Pain	12.4	12.0	20.0	15.5	-
Ortho – fractures	16.2	15.5	18.7	17.7	16.7
Ortho – replacements	16.2	21.3	-	15.7	11.6
Ortho – soft tissue injury	15.4	16.8	-	4.0	15.0
Ortho – others	11.7	10.0	2.0	13.1	15.3
Cardiac	18.0	34.3	15.2	20.4	-
Pulmonary	17.5	4.0	-	16.1	29.0
Burns	-	-	-	-	-
Congenital deformity	-	-	-	-	-
Other disabling imp.	23.7	25.0	14.3	-	29.5
Multiple trauma	21.5	24.3	25.2	17.4	9.5
Developmental disability	-	-	-	79.0	-
Reconditioning	16.9	21.3	19.0	17.1	14.3
COVID-19 conditions	10.1	15.0	-	-	-
All episodes (total)	16.3	18.9	18.5	14.8	15.2

Figure 3.8 – Mean FIM change by impairment – Queensland services vs national
***Note 1: Episodes with invalid FIM scores are excluded from analysis.**
***Note 2: Where the episodes are <5 in all services data, details are not given for privacy and accuracy.**

Length of Stay (LOS)

Across impairments, LOS profiles reinforce that in-reach functions as a tight, efficient episode, typically ~9–14 days in aggregate, with predictable variation where case mix is more complex, as demonstrated in Figure 3.9. For stroke, PAH reports a length of stay below the national mean (10.8 vs 13.1), consistent with early, focused intervention in a tertiary setting. GCUH aligns closely with the national average (12.1), while SCUH records a longer stroke length of stay (20.0), likely reflecting greater clinical and operational complexity within its neurology streams. Robina's orthopaedic pathways are notably efficient (e.g., fractures 8.2 vs 9.1 national), aligning with its older, fracture weighted cohort and short, targeted episodes. In categories with very small sample sizes, extreme values (e.g., neurological LOS >40 days) should be treated as statistically unstable rather than indicative of usual practice. The overarching picture demonstrate that impairment aligned pathways can compress LOS without eroding functional gain, and that outliers are largely explainable by stream mix and sample size.

Impairment Group	All services (National Average)	Princess Alexandra Hospital	Sunshine Coast University Hospital	Gold Coast University Hospital	Robina Hospital
Stroke	13.1	10.8	20.0	12.1	5.8
Brain	12.3	12.5	11.5	13.1	7.8
Neurological	12.7	10.4	17.0	14.7	45.0
Spinal Cord	22.6	18.7	8.6	32.7	8.0
Amputee	13.7	13.4	4.0	17.2	-
Arthritis	-	7.0	8.0	-	16.0
Pain	7.8	6.0	7.0	14.0	-
Ortho – fractures	9.1	7.9	9.1	13.4	8.2
Ortho – replacements	10.1	10.7	-	16.9	5.9
Ortho – soft tissue injury	14.7	14.3	-	27.0	2.0
Ortho – others	11.3	6.0	1.0	16.8	17.0
Cardiac	11.6	16.3	9.8	13.4	-
Pulmonary	11.0	18.0	2.0	9.3	3.5
Burns	-	-	-	-	-
Congenital deformity	-	-	-	-	-
Other disabling imp.	11.9	10.9	17.7	-	21.0
Multiple trauma	10.7	11.0	9.4	11.8	10.5
Developmental disability	-	-	-	25.0	-

Impairment Group	All services (National Average)	Princess Alexandra Hospital	Sunshine Coast University Hospital	Gold Coast University Hospital	Robina Hospital
Reconditioning	11.7	10.4	10.9	14.3	10.5
COVID-19 conditions	9.5	11.0	-	-	-
All episodes (total)	11.8	11.6	11.8	14.0	9.1

Figure 3.9 – Mean Length of Stay (LOS) per impairment – QLD services vs National

***Note 1: Episodes with LOS>500 days are excluded from analysis.**
***Note 2: Where the episodes are <5 in all services data, details are not given for privacy and accuracy.**

Discharge pathways

The variance in discharge pathway after in-reach rehabilitation reflects clinical need and local service design, demonstrated below in Figure 3.0. Sites with higher neurological proportions (e.g., PAH, SCUH) appropriately funnel more patients to inpatient rehabilitation for ongoing intensity, while still achieving meaningful direct to community discharge. Low “back to acute” rates across all four services (approximately 2.9–7.1 per cent) indicate that few patients deteriorate or become unsuitable for rehabilitation, reflecting safe selection processes and sound shared-care governance during acute care. On balance, the impairment level discharge patterns confirm that earlier, acute-based rehabilitation helps move the right patients home sooner and prioritise subacute capacity for those who need it most, with differences between sites explained by stream composition rather than performance deficits.

Discharge Destination	All services (National Average)	Princess Alexandra Hospital	Sunshine Coast University Hospital	Gold Coast University Hospital	Robina Hospital
Discharged to final destination	29.2%	18.9%	31.2%	20.5%	22%
Discharged to interim destination	3.4%	1.2%	4.9%	1.9%	5.3%
Death	0.9%	0.7%	0.0%	0.0%	0.4%
Rehab intervention finished; remains in hospital	17.3%	13.9%	8.8%	29.6%	28.0%
Change in medical stability, no longer suitable for rehab; remains in hospital	6.1%	6.0%	2.9%	4.5%	7.1%
Transferred to inpatient rehab, same	32.9%	41.8%	46.3%	31.1%	29.4%

Discharge Destination	All services (National Average)	Princess Alexandra Hospital	Sunshine Coast University Hospital	Gold Coast University Hospital	Robina Hospital
org/district/health service					
Transferred to inpatient rehab, different org/district/health service	5.7%	9.5%	3.9%	5.5%	6.4%
Discharged at own risk	1.1%	0.9%	0.0%	0.4%	1.1%
Other and unspecified	3.3%	7.2%	2.0%	6.4%	0.4%

Figure 3.0 – Discharge destination – Queensland services vs national

Financial impact

The financial and cost impact analysis presented below draws on limited quantitative data while acknowledging that raw, service level financial data are inherently limited by availability, attribution complexity, and privacy constraints. This analysis therefore provides indicative rather than exhaustive evidence of the economic value generated by in-reach rehabilitation services.

The financial analysis from one of in-reach rehabilitation services, de-identified as Site A, provides a compelling early indication of the economic value generated by in-reach rehabilitation. In Calendar Year 2025, Site A calculated $2,478,011 in gross bed-day value saved through patients discharged home that were projected to require inpatient rehabilitation. The analysis compared actual in-reach length of stay against projected inpatient rehabilitation length of stay, calculated using the AROC ANSNAP methodology. Avoided bed-days were costed using the site's identified subacute bed-day cost, and full service operating costs were deducted to derive the net saving. After accounting for the full operating cost of the in-reach service, this translated to a net annual saving of $511,249.

To estimate the potential statewide cost impact of In-reach rehabilitation, Site A's bed-days-saved estimates were projected to the three other Queensland in-reach services using estimated patient throughput, AROC FY2024-25 discharge data, and the Queensland Health reference subacute bed-day cost of $2,072. Based on Site A's net annual saving of $511,249 the model estimates a potential combined net annual saving of $1,689,315 across the four Queensland In-reach services. These projected figures represent an indicative estimate of potential savings if comparable service models, patient throughput, and discharge outcomes are achieved. They do not imply that identical savings will be realised at every site, as local case mix, service maturity, and operational context will influence outcomes. Importantly, the $511,249 net saving at Site A represents a realised and evidenced financial outcome, whereas projections to other sites demonstrate potential value at scale rather than guaranteed savings. This is a conservative estimate capturing only avoided inpatient rehabilitation bed-days. Projections were made with the use of Site A's average LOS applied uniformly with no case mix adjustment. As such, sites with more or less complexity in impairment mix may have different projected

LOS. These results may understate or overstate the savings at various individual sites. The operating costs are accounted for in the cost savings and applied as a ratio to the other services and may not be representative of true net savings.

This calculation reflects only one element of the total value delivered by in-reach. It monetises a single outcome, avoided inpatient rehabilitation days, and does so conservatively. It does not capture avoided acute bed days, reductions in deconditioning related complications, the financial impact of stabilising medically complex patients who cannot access subacute wards, or the opportunity cost recovered when subacute beds become available earlier for other patients. Nor does it quantify the system level benefit of improved throughput, earlier discharge decision-making, or reduced downstream service usage. In this context, the Site A result should be understood as a minimum estimate, highlighting potential rather than defining the full scope of economic return.

Alternatively, other services have utilised activity-based funding (ABF) data. These services routinely change patient episodes of care to “Rehabilitation” on or following commencement to the in-reach service. This generates a number of episode separations and associated weighted activity units and generated ABF. In the context of in-reach rehabilitation, WAU and ABF reflect the funded activity associated with patients receiving rehabilitation input while remaining under acute care, rather than the avoidance of downstream subacute utilisation. As such, WAU/ABF provides insight into how in-reach activity is recognised within existing funding frameworks but does not directly quantify cost avoidance or savings.

As in-reach rehabilitation is delivered using a shared care model, ABF attribution occurs at the episode level and cannot be reliably separated by service contribution. WAU therefore represents the funded value of the overall episode during which in-reach input occurred, rather than activity generated exclusively by the in-reach team. For this reason, WAU/ABF data is presented as an indicative measure of system level financial contribution, rather than a precise estimate of in-reach specific savings.

The ABF/WAU data and bed-days saved modelling represent different lenses on financial impact. ABF reflects funded activity generated within the system, whereas bed-days saved estimates costs avoided through reduced inpatient rehabilitation utilisation. Neither method alone captures the full economic footprint of in-reach, but together they provide complementary insight into how in-reach contributes both to system funding and system efficiency. Cost effectiveness has also been challenging to capture in the literature, as identified in the gaps in literature section above. It is recommended to consider this for future scope and analysis to further quantify the known, anecdotal financial benefits of in-reach rehabilitation models.

3.2.2 Qualitative outcomes

Several high value impacts of in-reach rehabilitation are not readily visible in routine datasets and are therefore underrepresented in quantitative reporting. One such impact relates to indirect patient flow benefits. When a patient is discharged home from in-reach rather than transferring to inpatient rehabilitation, the subacute bed that would otherwise have been occupied becomes available earlier. Although this is rarely captured as a discrete metric at the originating site, it creates downstream benefits by allowing another patient to commence subacute rehabilitation sooner, reducing delays, limiting deterioration while waiting, and supporting overall system flow. These benefits are dispersed across multiple services and cost centres and cannot be easily attributed back to the original in-reach episode, despite their cumulative impact.

In-reach rehabilitation also plays a critical role in optimising patients for further rehabilitation, a benefit that is largely qualitative in nature. By delivering a graded introduction to rehabilitation intensity while patients remain in acute care, in-reach teams build tolerance, clarify goals, address barriers such as medical instability or equipment needs, and support readiness for more intensive programs.

Importantly, in-reach can function as a trial of rehabilitation, allowing teams to assess a patient's capacity to engage, sustain effort, and respond to therapy before committing to an inpatient rehabilitation admission. This early trial supports more appropriate pathway decisions, confirming suitability for inpatient rehabilitation, identifying patients better managed at home, or recognising when rehabilitation goals may be limited. This reduces mismatched admissions, aborted transfers, and inefficient use of scarce subacute resources. These pathway-shaping benefits are clinically significant but are not captured in standard outcome datasets.

In-reach rehabilitation further addresses equity and access gaps for patients who cannot easily transfer to subacute rehabilitation, including the following cohorts:

- hyperbariatric
- tracheostomies
- nasogastric feeding requirements
- other complex medical instabilities
- out of catchment
- Medicare ineligible or lacking funding for subacute rehab.

In these contexts, in-reach rehabilitation operates as a risk-mitigation strategy to support care continuity within existing policy and funding constraints. By embedding rehabilitation capability directly within the acute environment, in-reach enables early, coordinated intervention for patients who may be deemed too high-risk or resource intensive for transfer to inpatient rehabilitation. Access to in-reach rehabilitation services reduces inequity in access to recovery pathways and helps maintain functional potential during critical windows where deterioration is otherwise likely. Clinicians report that in-reach not only enhances patient dignity and autonomy but also supports caregivers and acute teams by offering specialised guidance, communication, goal setting, and continuity of care that would not otherwise be available. These experiences reflect the unique human value of the in-reach model supporting complex, vulnerable, and underserved cohorts in ways that quantitative data alone cannot convey. While these qualitative benefits are impactful, they prove challenging to capture with data or objective outcomes.

3.3 Key learnings

3.3.1 Enablers

Across the surveyed in-reach services, several common factors emerged as critical enablers for successful implementation and sustainability. Strong organisational and clinical leadership was consistently highlighted, with executive support and clear governance structures providing the foundation for service continuity. A collaborative multidisciplinary team (MDT) culture was another dominant theme, where effective communication and shared goals between allied health, nursing, and medical staff enabled smooth patient flow and high-quality care. Protected and dedicated funding streams were seen as essential to maintain staffing stability and prevent resource diversion to acute care demands. Data-driven practice and research orientation also featured prominently, with services leveraging outcome reporting and benchmarking (e.g., AROC datasets) to demonstrate value and secure ongoing support. Finally, streamlined referral pathways and proactive screening processes were identified as practical enablers, ensuring timely identification of suitable patients and reducing delays in program commencement.

3.3.2 Barriers

The most common barriers to implementing and sustaining in-reach services relate to structural and operational constraints. Current funding and incentive structures present challenges for optimising in-

reach rehabilitation when delivered in parallel with acute care models. Staffing availability challenges and skill mix gaps emerged as a significant challenge, particularly in disciplines such as speech pathology, psychology, and medicine, as well as difficulties maintaining adequate staffing coverage. Visibility and advocacy issues were noted where unclear reporting lines limited executive engagement and prioritisation. Physical space constraints on acute wards were another practical barrier, reducing therapy intensity and patient experience. Referral quality and timing problems, such as inappropriate or late referrals, were linked to limited awareness of eligibility criteria and rehabilitation processes. Finally, governance gaps and communication breakdowns, including unclear shared-care roles and misaligned expectations between acute and rehabilitation teams, were identified as factors that compromise continuity and efficiency.

3.3.3 Considerations

Responses emphasised the importance of establishing a strong foundation for new or emerging in-reach rehab services. Building a complete multidisciplinary team from the outset was the most consistent recommendation, with dedicated roles across allied health, nursing, medical, and support staff to ensure comprehensive care and prevent resource diversion. Securing adequate funding and capacity early, both in bed allocation and staffing levels, was highlighted as critical to avoid historical under-resourcing becoming entrenched. Governance clarity and well-defined reporting lines were seen as essential for maintaining service integrity and avoiding role confusion between acute and rehabilitation teams. Respondents also stressed the need for robust referral pathways and proactive stakeholder engagement, including education for referrers and integration of electronic screening tools. Finally, standardising data collection and KPI frameworks were viewed as a priority, enabling services to demonstrate outcomes, benchmark performance, and strengthen the case for ongoing investment.

4. Consumer feedback

Consumer interviews were conducted with two participants from two different in-reach rehabilitation sites; both patients had experienced significant acute stays with subsequent transfers to subacute inpatient rehabilitation following their in-reach rehabilitation. The participants varied in their rehabilitation needs and their impairments, with one patient presenting with considerable communication deficits, hence the inclusion of his family member. One patient was also of First Nations descent and relayed how the in-reach service addressed his cultural needs. Their accounts provide insight into how the in-reach rehabilitation model is experienced in practice, highlighting both strengths and areas for service refinement.

Both interviews described the in-reach team as a consistently positive presence during their acute admission. Consumers reported that staff engagement was supportive, respectful, and conducive to building confidence in the rehabilitation process. The team was described as approachable, clear in their communication, and effective in preparing patients and families for the transition to inpatient rehabilitation. For one patient, involvement from the in-reach team contributed to a noticeable shift in their engagement with therapy. Although initially limited by fatigue and anxiety, they gradually increased their participation and reported that the preparatory work undertaken by staff helped them understand what to expect in the next stage of care. Similarly, the family interview indicated that in-reach played a critical role in recognising rehabilitation potential and advocating for further assessments.

Therapy access and intensity were areas where consumers expressed mixed experiences. While the patient interview indicated that therapy interactions were meaningful and aligned with individual tolerance, the family interview described variability in therapy frequency, at times limited to weekly sessions for some disciplines. They also noted that competing acute demands and equipment needs at times reduced therapy opportunities. Both interviews highlighted the importance of clear links between

therapy activities and overall goals; when these were not evident, patients could find it difficult to understand the rationale for certain tasks. They also felt the in-reach team integrated well with the Aboriginal and Torres Strait Islander Advocates to ensure their cultural needs were met throughout their in-reach participation.

Across interviews, communication was a recurring theme. Consumers described the in-reach team as generally communicative and proactive in providing updates and explanations. However, communication with the broader acute team was less consistent. Family members reported that information could be difficult to access when they were not physically present, creating reliance on informal channels or requiring them to advocate strongly on the patient's behalf. Regarding care planning and goal setting, consumers reported feeling involved, although the degree of involvement varied. Support from individual clinicians, particularly in speech pathology and psychology, were identified as beneficial in facilitating participation in the goal setting process to support communication and anxiety management.

Preparation for transitions to inpatient rehabilitation was generally viewed positively. Patients felt well oriented to what the next stage would involve, and family members acknowledged the role of the in-reach team in coordinating assessments and advocating for appropriate placement. However, rapid or unanticipated transitions created challenges in some instances, particularly when communication gaps occurred or when the patient's communication needs were not fully considered.

Both interviews identified opportunities for service improvement. These included increased access, strengthened communication processes and more structured psychological and emotional support integrated into the model. Overall, the consumer feedback suggests that the in-reach rehabilitation service is highly valued for its clinical engagement, preparation for rehabilitation pathways, and supportive approach. These insights provide important considerations for the development of a standardised, high quality in-reach rehabilitation model of care.

5. Future state considerations

Looking ahead, the evolution of in-reach rehabilitation services in Queensland should focus on creating a model that is both standardised and adaptable, ensuring consistency in quality while allowing flexibility for local contexts. The future state must move beyond the current variability in service design and workforce composition to establish a clear minimum standard of care. This includes defining eligibility criteria that are transparent and equitable, supported by robust referral pathways that integrate seamlessly with electronic medical records and proactive screening processes. Automated triggers for high-priority cohorts are essential to ensure timely identification and reduce delays in commencing rehabilitation.

Workforce planning will be a cornerstone of future success. Dedicated funding for all core disciplines is critical to prevent resource drift into acute workloads. Aligning position classifications with the required level of seniority will help attract and retain skilled clinicians. Protecting these roles from being absorbed into acute care during staffing pressures will be vital for maintaining continuity and intensity of therapy.

Data and outcome measurement will need to be strengthened to support benchmarking and continuous improvement. Consistent reporting to AROC and integration with other performance frameworks will enable statewide comparability and inform funding decisions. As such, to maintain AROC reporting via Pathway 2, a minimum dataset would be required across all services, particularly with patient demographics, complexity data, FIM scores on admission and discharge and FIM efficiency, in addition to length of stay and discharge destination. Incorporating goal-based and patient-reported measures, such as PSFS and PREM, will provide a more holistic view of patient progress and experience. Any

further outcome measures would be specific to each service dependent on the goals of the services and the necessary reporting data.

Infrastructure planning must also be addressed. Many services currently operate within space-constrained acute wards, limiting therapy intensity and patient experience. Future models should include dedicated treatment areas or mobile therapy solutions, alongside appropriate equipment for complex cohorts such as bariatric or neuro-rehabilitation patients. Governance structures will need to be clarified, with defined reporting lines and accountability frameworks to strengthen visibility and executive support. The in-reach model of care is a useful tool in advocacy for patient outcomes, patient flow solutions and emphasising the importance of rehabilitation. While governance will be specific to each HHS, it is anticipated that governance pathways should be incorporated with existing rehabilitation services or departments to ensure consistency with HHS rehabilitation procedures. In future, consideration could be made for funding models to incentivise HHS adoption of early rehabilitation, recognising its impact on patient flow, reduced reliance on inpatient rehabilitation, and potential cost savings.

Finally, consumer-centred care and innovation should underpin all future developments. Engaging patients and carers in service design, providing education to support participation and goal setting, and leveraging digital health solutions will enhance accessibility, continuity of care and innovative intervention. Investment in implementation research will be essential to evaluate outcomes, cost-effectiveness, and scalability, ensuring that in-reach rehabilitation remains a sustainable and high-value component of acute care delivery.

The recommendations presented set the foundation for a more consistent and sustainable model across Queensland. The subsequent *In-reach Rehabilitation Toolkit* has been designed to address these future state considerations by providing practical guidance, minimum standards, and implementation resources. Its purpose is to support statewide adoption of best practice principles, enable benchmarking, and ensure that in-reach rehabilitation becomes an integrated, high-value component of acute care delivery across all Hospital and Health Services in Queensland.

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Appendices

Appendix 1. Search strategy/methodology

The search was completed by Princess Alexandra Hospital Library services using Clinical Knowledge Network databases with the following limiters:

Terms: in-reach rehabilitation, inreach rehabilitation, in-reach multidisciplinary

MeSH: Rehabilitation / methods*

Terms: model of care**,** early rehabilitation, stroke, brain injury, spinal cord injury, trauma, myelopathy, amputation, fracture, orthopaedic, Guillain–Barré syndrome (GBS) syndrome, Parkinson's, neurological conditions, transplant, deconditioning/reconditioning, respiratory illness, cancer

MeSH: Intensive Care Units **Phrases:** "early intensive rehabilitation" **Limit:** 2005<

Additional articles were identified using snowballing and cross references with previous bodies of work including the Brain In-Reach Rehab Team: Scoping and Model of Care Framework (2023) and literature reviews from the Agency for Clinical Innovation (ACI) NSW.

Initial search results yield 124 total number of articles and were synthesised to 31 articles.

Studies were excluded if they were deemed inappropriate for reference due to use of a subacute or inpatient rehabilitation setting, intervention or site specific that were unable to be extrapolated to a wider in-reach settings or were deemed irrelevant to analysis of the current state of in-reach rehabilitation.

Dimension	High	Moderate	Low
Evidence strength	RCTs, systematic reviews, large cohort studies with robust methodology	Pilot studies, observational studies with some limitations	Case reports, small sample studies, or studies with major design limitations
Clinical impact	Clear, measurable improvements in patient outcomes, discharge planning, or service efficiency	Potential benefits with limited scope or mixed results	Minimal or unclear impact on clinical practice or patient outcomes
Applicability to practice	Directly informs or supports current clinical practice, workforce planning, or service design	Relevant to specific populations or settings; may require adaptation	Limited generalisability or relevance to current practice settings

Appendix 2: Summary table of articles – In-reach rehabilitation specific studies

Author	Year	Study Design	Population	Intervention	Key Findings	Relevance to practice
Wu et al.	2017	RCT	214 patients admitted to four NSW trauma services (2012–2015) with LOS ≥5 days	Early involvement of an in-reach multidisciplinary in-reach rehabilitation team (rehab physician, nurse coordinator, physiotherapist, OT) providing therapy alongside usual care	- No significant difference in acute length of stay (median 15 vs 12 days, p=0.37) - No improvement in functional outcomes (FIM), psychological status (DASS-21), pain, or quality of life at discharge or follow-up - Subgroup analysis suggested possible psychological benefit for patients requiring inpatient rehab	**Evidence Strength:** High (RCT) **Clinical Impact:** Low (no measurable benefit for most patients) **Applicability:** Moderate (may inform targeted interventions for high-needs subgroups)
Wu et al.	2021	Quality Improvement Project (Service Redesign)	4,000 consecutive acute hospital admissions screened at a metropolitan Australian hospital	Proactive Rehabilitation Screening (PReS): systematic screening on day 5 of admission (or day 3 post-ICU transfer) to identify patients likely to need rehabilitation	- Screening took ~3.6 min per patient - Of those "ruled in," 86% received inpatient rehab - Of those "ruled out," 92% did not receive rehab - PReS identified 53.6% of patients needing rehab earlier than traditional referral - 24% of identified patients were ready for rehab transfer on the same day	**Evidence Strength:** Moderate (observational, service redesign) **Clinical Impact:** High (improved timeliness, reduced delays) **Applicability:** High (feasible, scalable in acute hospital settings)
Wu et al.	2023	Pragmatic Evaluation (Case Study)	229 hospitalised patients with high rehabilitation needs at a tertiary hospital in Sydney	**In-reach rehabilitation program**: early multidisciplinary rehab delivered in acute care by rehab physician, nurse, physiotherapist, OT	- Patients receiving in-reach rehab were **almost twice as likely** to be discharged home from acute care compared to waitlist controls (46% vs 24%, p=0.002) - Lower rates of transfer to	**Evidence Strength:** Moderate (observational, non-randomised) **Clinical Impact:** High (improved discharge outcomes, functional gains) **Applicability:** Moderate (requires specialist team

					subacute inpatient rehab (43% vs 62%) - Significant improvement in FIM scores (median +25 points) - Feasible to integrate into acute care for heterogeneous diagnoses	and resources; generalisability may vary)
Wu et al.	2025	Retrospective Cohort Study	223 heart and/or lung transplant recipients at a major Australian transplant center (2014–2023)	**In-reach rehabilitation:** early multidisciplinary rehab during acute care, coordinated by rehab physician, nurse, physiotherapist, OT	- Significant functional improvement: median FIM score increased from 77 to 100 ($p<0.001$) - 43.9% discharged directly home from acute care - Proactive screening (introduced in 2019) improved program effectiveness and reduced inpatient rehab reliance - Feasible even in medically complex cases	**Evidence Strength:** Moderate (observational, no control group) **Clinical Impact:** High (functional gains, improved discharge **outcomes)** **Applicability:** Moderate (relevant for high-acuity transplant patients)
Wu et al.	2019	Pilot Randomised Controlled Trial	66 critical care survivors (ICU stay ≥ 5 days) at a tertiary hospital in Sydney	**In-reach rehabilitation:** early multidisciplinary rehab (rehab physician, nurse, physiotherapist, OT) delivered on acute ward in addition to usual care	- Feasible to deliver early, structured rehab soon after ICU discharge - Intervention group received significantly more therapy sessions per week (median 8.2 vs 4.9, $p<0.001$) - Median total LOS shorter in intervention group (31 vs 41 days), but not statistically significant ($p=0.57$) - No significant differences in functional, psychological, or quality-of-life outcomes at discharge or follow-up	**Evidence Strength:** Low (pilot RCT, underpowered) **Clinical Impact**: Low (no significant outcome differences) **Applicability:** Moderate (feasible model, but requires further consideration for patient outcomes given no significant differences between control group.

Shiner et al.	2025	Retrospective Observational Study	967 hospitalised adults (heterogeneous diagnoses) receiving in-reach rehab at a tertiary hospital (2015–2023)	**In-reach rehabilitation:** multidisciplinary rehab delivered in parallel with acute care (rehab physician, nurse, physiotherapist, OT)	- Median program duration: 11 days - Significant functional improvement: median FIM gain 22 points (mean gain 24, p<0.001) - High goal attainment: 90.5% achieved goals - Younger age, earlier commencement, and certain diagnoses (lung transplant, cardiac, traumatic brain injury) associated with greater gains	**Evidence Strength:** Moderate (large real-world cohort, but no control group) **Clinical Impact:** High (functional gains, goal achievement) **Applicability:** High (feasible across diverse diagnoses; scalable in general hospital settings)
Narayanan et al.	2020	Retrospective Case Reports	2 morbidly obese patients (>250 kg) hospitalised for severe sepsis in Sydney, Australia	**In-reach rehabilitation (IR):** intensive multidisciplinary therapy (1–2 hrs/day) delivered in acute care alongside medical management	- Both patients achieved significant functional improvement despite minimal FIM gains (Case 1: none; Case 2: +8) - Case 1: progressed from hoist transfers to walking 80 m with assistance; discharged to subacute rehab - Case 2: progressed to independent walking with 4-wheel walker; discharged home - Both lost ~45 kg during hospitalisation (~20% body weight)	**Evidence Strength:** Low (case reports) **Clinical Impact:** Moderate (functional gains, weight loss, discharge facilitation) **Applicability:** Limited (highly specialised cases; requires bariatric-specific resources)
Parker & you ***Abstract only – presented at Stroke 2023 – The Combined Stroke Society of Australasia***	2023	Service Evaluation (6-month data)	Stroke patients admitted to Royal North Shore Hospital (RNSH)	**SSIR Model of Care:** Multidisciplinary in-reach rehab delivered in acute hospital; two streams: Full (home discharge) and Supplementary	- Average program start: 8.9 days post-admission - Program duration: 7.8 days - Length of stay: Full = 7.2 days; Supplementary = 10.1 days - Discharge destinations:	**Evidence Strength**: Low–Moderate (observational, short-term, single site), abstract only article. **Clinical Impact:** High (demonstrates feasibility and effectiveness of SSIR in improving flow and

and Smart Strokes Nursing and Allied Health Scientific Meeting				(transfer to inpatient rehab)	39% home, 49% inpatient rehab, 12% acute ward - Mean FIM efficiency: 1.6 (Full = 2.2; Supplementary = 1.1) - FIM efficiency >0.66/day = clinically significant → achieved across all streams	functional outcomes) **Applicability:** High for hospitals with acute stroke caseloads.
Wu et al.	2026	Prospective observational cohort study conducted across two Australian public hospitals. The study involved validation of the original PReS tool and development/testing of a modified version using regression modelling.	1,600 admitted patients in the development cohort and 800 in the validation cohort; adult inpatients (≥18 years), excluding geriatrics, psychiatry, detoxification, and palliative care units.	Use of the Proactive Rehabilitation Screening (PReS) tool, both original and modified versions, to screen hospitalised patients for likelihood of needing formal inpatient rehabilitation programs. Screening performed via EMR review on day 5 of admission.	• Five key variables improved predictive accuracy: age, number of allied health sessions in 5 days, assistance required to mobilise, new personal care impairment, and discharge barriers. • Modified PReS tool showed strong predictive performance: Sensitivity 81.1%, Specificity 88.0%, Accuracy 86.9%. • Performance was best when medium-likelihood cases also involved clinician input.	**Evidence Strength**: Moderate (large observation cohort, rigorous statistical analysis) **Clinical Impact:** Moderate – High (High predictive accuracy and clear potential to improve early rehabilitation identification, workflow efficiency) **Applicability:** High (simple objective tool for use by non-specialists, integrates seamlessly, validated across sites).

Appendix 3: Summary table of articles - Caseload specific studies: Stroke

Author	Year	Study Design	Population	Intervention	Key Findings	Relevance to practice
Langton-Frost et al.	2023	Descriptive Implementation Study	Hospitalised stroke patients at a comprehensive stroke center (Johns Hopkins)	**ARISE Model**: Enhanced early rehabilitation in acute care with up to 6 therapy sessions/day (PT, OT, SLP), physiatry	- Multidisciplinary model implemented successfully in acute care setting - Patients received up to 2 sessions per discipline daily (PT, OT, SLP) - Focus on impairment + function-based sessions - Improved coordination and	**Evidence Strength:** Low (implementation study, no control group, no patient outcomes) **Clinical Impact:** Moderate (addresses gaps in early rehab intensity and coordination)

				involvement, daily rehab huddles	communication via daily huddles and EHR enhancements - Emphasis on early intervention for motor, cognitive-linguistic, and swallowing deficits	**Applicability:** High (scalable to other acute stroke programs with helpful program design principles)
Angerova et al.	2020	Prospective Pragmatic Study	87 stroke patients transferred to early rehab units in 3 Czech hospitals (median 11 days post-stroke)	**Early inpatient rehabilitation:** 3–4 hrs/day multidisciplinary therapy after acute care	- Average cost per hospitalisation: CZK 114,489 (€4,348); daily cost CZK 5,103 (€194) - Costs increased with disability severity (immobile patients cost 2.4× more than self-sufficient) - Main cost driver: nursing care - Cost-effectiveness best for partly self-sufficient patients (category 2) - Motor scales (Barthel Index, FIM motor) more sensitive for economic analysis than cognitive scales	**Evidence Strength:** Moderate (real-world, multi-center, but no control group) **Clinical Impact:** High for resource planning and policy **Applicability:** High for evidence to support cost-effectiveness of early rehabilitation with aim to reduce cost associated with immobility / severe disability.
Matsui et al.	2010	Nationwide Retrospective Cohort Study	5,482 patients with acute ischaemic stroke admitted to 294 hospitals in Japan	**Very Early Intervention (VEI):** rehabilitation (PT/OT) initiated within 3 days of admission.	- VEI significantly associated with better functional outcome at discharge (mRS ≤ 1) - Adjusted analysis using instrumental variable (Friday admission) showed VEI improved chance of reduced disability by **15.3% (p<0.001)** - No significant association between VEI and in-hospital mortality - Training intensity had inconsistent effects; likely influenced by selection bias	**Evidence Strength:** Moderate (large sample, advanced statistical correction, but observational**)** **Clinical Impact:** High (supports early rehab initiation for functional recovery) **Applicability:** High for acute stroke care settings with multidisciplinary teams

Oyanagi et al.	2021	Retrospective Cohort Study	1,759 acute stroke patients admitted to a Japanese acute-care hospital (2013–2016)	High-frequency rehabilitation (>2 sessions/day) vs. normal frequency (<2 sessions/day)	- High-frequency group had shorter time to first rehab (median 19h vs. 24.7h, p<0.001) - Despite higher baseline severity, high-frequency group had better functional outcomes at discharge (mRS ≤2; adjusted OR 1.89, 95% CI 1.25–2.85, p=0.002) - No significant difference in immobility-related complications or total medical costs between groups - Length of stay slightly longer in high-frequency group (24.1 vs. 20.9 days)	**Evidence Strength:** Moderate (large sample, adjusted analysis, but single-center retrospective) **Clinical Impact**: High (supports frequent rehab for improved outcomes without added cost) **Applicability:** High for services with acute stroke units.
Wang et al.	2021	Prospective Longitudinal Study	76 patients with acute ischemic stroke admitted to an acute care ward in Taiwan	**Early rehabilitation program**: up to 2 short sessions/day (15 min each), 5 days/week during acute hospitalisation	- Barthel Index (BI) change during acute care significantly predicted BI at 3 months (explained additional 20.3% variance) - Higher therapy density and greater improvement in Postural Assessment Scale for Stroke Patients (PASS) were associated with larger BI gains - Patients with moderate initial dependence benefited most from higher therapy density	**Evidence Strength:** Moderate (prospective design, but single-center and small sample) **Clinical Impact:** High (supports early, frequent, short sessions for better long-term functional recovery) **Applicability:** Moderate (requires structured early rehab program)
Yoshikawa et al. ***Abstract only.***	2018	Prospective Cohort Study	227 acute stroke patients admitted to hospital	**PROr Model:** Physiatrist-led assessment + therapist-delivered early mobilisation (>1	- Mortality: 5.7% overall; VEM group 4.3% (safe) - GCS improved significantly in all groups; greatest improvement in VEM group - FIM gains (total and motor	**Evidence Strength:** Low (prospective design with no randomisation) – abstract only. **Clinical Impact:** High (supports very early

				hr/day); groups based on start time: VEM (<24h), EM (24–48h), OM (>48h)	subscale) significantly higher in VEM group compared to EM and OM - Early mobilisation within 24h associated with better ADL recovery	mobilisation for functional recovery) **Applicability:** High – emphasises role of Physiatrist (rehab physician).

Appendix 4: Summary table of articles - Caseload specific articles: Intensive care

Author	Year	Study Design	Population	Intervention	Key Findings	Relevance to practice
Castro-Avila et al.	2015	Systematic Review & Meta-Analysis	774 critically ill adult patients in ICU/HDU across 7 trials	**Early rehabilitation/ mobilisation during ICU stay** vs. usual care (e.g., passive ROM, bed positioning)	- **No significant effect** on functional status, muscle strength, quality of life, or healthcare utilisation - **Significant improvement in walking ability**: more patients walked without assistance at hospital discharge (RR 1.42; 95% CI 1.17–1.72) - Non-significant trend toward reduced ICU-acquired weakness and improved walking distance - No consistent effect on ICU/hospital LOS or duration of mechanical ventilation	**Evidence Strength:** High (systematic review, meta-analysis) but heterogeneous interventions **Clinical Impact:** Moderate (benefit mainly in walking ability, not overall function) **Applicability:** High for HHS with ICU ward with consideration for inclusion in In-reach Model of Care.
Dong et al.	2014	Randomised Controlled Trial	60 ICU patients on mechanical ventilation (≥48 hrs, <72 hrs)	**Early rehabilitation therapy: twice daily sessions including head-up, sitting, standing, and bedside**	- **Days to first out of bed**: 3.8 ± 1.2 vs. 7.3 ± 2.8 (P=0.00) - **Duration of mechanical ventilation**: 5.6 ± 2.1 vs. 12.7 ± 4.1 days (P=0.005) - **ICU length of stay**: 12.7 ± 4.1 vs. 15.2 ± 4.5 days (P=0.01)	**Evidence Strength:** Moderate (RCT, but single-center, small sample) **Clinical Impact:** High (significant reduction in ventilation duration and ICU stay) **Applicability:** High for

				ambulation vs. routine care	- No significant difference in APACHE II score, FiO_2, PaO_2/FiO_2, or hospital mortality - No serious adverse events reported	HHS with ICU ward with consideration for inclusion in In-reach Model of Care.
Fuke et al.	2018	Systematic Review & Meta-Analysis	709 critically ill adult ICU patients across 6 RCTs	**Early rehabilitation (within 7 days of ICU admission)** vs. standard care/no early rehab	- **Short-term physical outcomes improved**: • MRC score ↑ (SMD 0.38; 95% CI 0.10–0.66; p=0.009) • ICU-acquired weakness ↓ (OR 0.42; 95% CI 0.22–0.82; p=0.01) - **No significant effect** on: • Cognitive outcomes (delirium-free days) • Mental health (HADS score) • Long-term quality of life (EQ-5D, SF-36 PF)	**Evidence Strength:** Low (due to small sample sizes, heterogeneity, moderate risk of bias) **Clinical Impact:** Moderate (benefit limited to short-term physical function) **Applicability:** High for HHS with ICU ward with consideration for inclusion in In-reach Model of Care.
McWilliams et al.	2019	Prospective Before/After Quality Improvement Project	209 patients admitted to a 7-bed mixed dependency critical care unit (≥4-day stay)	**Structured early rehabilitation program** introduced via QI approach (4E's model: Engage, Educate, Execute, Evaluate)	- Mobilised in ICU: **92% vs. 73%** (p=0.003) - Time to first mobilisation: **2 vs. 3.5 days** (p<0.001) - Higher mobility at ICU discharge (Manchester Mobility Score: **5 vs. 4**, p=0.019) - Subgroup ventilated ≥4 days: time to mobilise reduced from **14 to 3 days** - No significant differences in ICU/hospital LOS or mortality	**Evidence Strength:** Moderate (real-world QI, but non-randomised) **Clinical Impact:** High (demonstrates feasibility and sustained improvement in mobility) **Applicability:** High for HHS with ICU ward with consideration for inclusion in In-reach Model of Care.
Sosnowski et al.	2015	Integrative Literature Review	Adult ICU patients receiving mechanical ventilation	**Early rehabilitation interventions** (physical therapy,	- Early exercise in ICU **prevents neuromuscular complications** and improves functional status	**Evidence Strength:** Moderate (synthesis of RCTs, cohort studies, case-controlled studies)

				mobility, exercise programs, sometimes combined with sedation management)	- Associated with **shorter delirium duration** and improved independence at discharge (e.g., Barthel Index, FIM scores) - Safe and feasible when strict physiological and neurological criteria are applied - Barriers: ICU culture, staffing shortages, sedation, physiological instability	**Clinical Impact:** High (supports early rehab as standard care to improve outcomes) **Applicability:** High for HHS with ICU ward with consideration for inclusion in In-reach Model of Care.
Wahab et al.	2016	Retrospective Before/After Study	8145 ICU admissions across 5 ICUs (medical, surgical, cardiac) in two academic hospitals	**Multi-ICU early rehabilitation program:** PT/OT initiated promptly after stabilisation; multidisciplinary approach	- Rehabilitation treatments per ICU patient-day increased **4.5-fold** (0.16 → 0.72; p<0.001) - Patients ambulated at least once during ICU stay: **15% → 50%** (p<0.001) - Mean ICU LOS decreased by **0.4 days (6.9%)** (5.8 → 5.4 days; p<0.001) - Mean hospital LOS decreased by **0.8 days (5.4%)** (14.7 → 13.9 days; p<0.001) - No change in mortality or discharge destination	**Evidence Strength:** Moderate (large sample, multi-ICU, but observational) **Clinical Impact:** High (demonstrates scalability and LOS reduction) **Applicability:** High for HHS with ICU ward with consideration for inclusion in In-reach Model of Care.

Appendix 5: Summary table of articles - Caseload specific articles: Trauma / TBI

Author	Year	Study Design	Population	Intervention	Key Findings	Relevance to practice
Kimmel et al.	2025	Quasi-experimental before–after study	3,376 trauma patients admitted to Alfred Hospital trauma ward (1,644 baseline; 1,732 AHMOC group)	Allied Health Model of Care (AHMOC): early, intensive therapy across 8 disciplines, 7-day service	- 53% higher odds of discharge home - 65% higher odds of return to work at 12 months - 6% reduction in adjusted LOS	**Evidence Strength:** Moderate – Large sample size and registry linkage, but non-randomised design

						limits robustness. **Clinical Impact:** High – Clear improvements in discharge destination and RTW outcomes, plus LOS reduction. **Applicability:** High – Directly informs service design and workforce planning; scalable to similar settings.
Fan et al.	2020	Prospective, assessor-blinded, randomised controlled trial	81 patients with moderate TBI (GCS 9–12), aged 18–60	**Early intensive rehabilitation**: start at day 7 post-injury, 7 days/week, 4 sessions/day, 1 hour/session for 4 weeks vs. ordinary rehab starting day 14, 5 days/week, 2 sessions/day	- At 3 months: significantly higher motor function (FMA) in early intensive group - At 6 months: higher FMA, Barthel Index (ADL), and Glasgow Outcome Scale scores in early intensive group - No complications reported - Early intensive rehab safe and feasible	**Evidence Strength:** Moderate – RCT design but single-center and small sample size. **Clinical Impact:** High – Clear improvements in motor function and ADL at 6 months. **Applicability:** Moderate to High – Protocol feasible; may require adaptation for resource/funding-limited models.
Choi et al.	2008	Prospective observational cohort study	135 survivors of severe TBI (GCS ≤ 8), mean age 40 years, treated in a Level I trauma center	**Multimodal early rehabilitation:** interdisciplinary approach including physiotherapy, occupational therapy, speech therapy, psychological care, and medical monitoring; average 1.5–3 hrs/day	- After ~72 days in early rehab unit, 63% achieved good outcome (eBI ≥ 30), 32% achieved independence (eBI 90–100) - Temporal contusion (OR 2.6) and brainstem contusion (OR 13.8) were strong predictors of poor outcome - Age and ICU length of stay also predicted poor outcome - Demonstrated feasibility and	**Evidence Strength:** *Moderate* – Large sample size, prospective design, but no randomisation. **Clinical Impact:** *High* – Significant functional gains and identification of prognostic factors. **Applicability:** *High* – Supports early

					benefit of early multimodal rehab	interdisciplinary rehab in severe TBI.
Lui et al.	2014	Prospective cohort study with historical comparison	298 patients with TBI (all severities), screened within 72 hours of neurosurgical admission; 68 patients received inpatient rehab (TREATS group)	**Early integrated TBI rehabilitation:** multidisciplinary team reviews twice weekly in acute neurosurgical unit; early transfer to dedicated inpatient rehab unit (TREATS)	- TREATS group showed significant functional improvement (FIM gain, $p < 0.001$) - Regression analysis: TREATS intervention associated with 18.4-point FIM gain ($p = 0.03$) - TREATS group had shorter acute LOS (20.5 vs. 24.3 days) and longer rehab LOS - Most common TBI cause: falls (77.5%), predominantly in elderly	**Evidence Strength:** Moderate – Prospective design, large cohort, but non-randomised and historical control**.** **Clinical Impact:** Moderate to High – Demonstrated feasibility and functional benefit of early integrated rehab. **Applicability:** High – Model is practical for acute hospitals; emphasises early screening and coordinated rehab for all TBI severities.
Naess et al.	2020	Systematic review of 4 studies (1 RCT, 3 observational)	409 patients with traumatic brain injury (TBI); no eligible studies for trauma without TBI	**Early Interdisciplinary Rehabilitation (EIR):** defined as starting within 1 week of admission; team-based approach including physiatrist, PT, OT, speech therapy, psychology, social work	- Limited evidence suggests EIR may improve functional outcomes and reduce socioeconomic costs for severe TBI - No significant differences for return to work, LOS, complications, or quality of life in most studies - Evidence quality rated **low** due to small sample sizes and high risk of bias - No studies found for trauma patients without TBI	**Evidence Strength:** Low – Few studies, methodological limitations, high risk of bias. **Clinical Impact:** Moderate – Some indication of benefit for severe TBI; unclear for other trauma. **Applicability:** Moderate – Supports interdisciplinary approach but requires more robust evidence before widespread adoption.

Steiner, Murg-Argeny, & Steltzer,	2016	Prospective cohort (early rehab) + retrospective controls	62 patients with severe TBI (GCS ≤ 8), aged 16–70; divided into 3 groups: A (early rehab, n=16), B (standard rehab after work accidents, n=34), C (standard rehab after home accidents, n=12)	**Early rehabilitation:** immediate transfer from ICU to specialised rehab center; interdisciplinary team (neurologists, physiotherapists, occupational therapists, speech therapists, psychologists, nurses)	- Group A had shorter time to rehab admission (39 vs. 81 days; p<0.001) - Better GOSE scores for early rehab group vs. controls (p=0.004) - FIM at discharge similar across groups, but early rehab group achieved comparable outcomes despite more severe injuries - CIQ at 12 months showed trend toward better community integration in early rehab group	**Evidence Strength:** Moderate – Prospective design for intervention group, but small sample and retrospective controls. **Clinical Impact**: High – Early rehab linked to improved functional and long-term outcomes. **Applicability:** High – Supports early, continuous rehab chain; feasible in systems with integrated trauma and rehab services.
Bouman et al.	2017	Prospective, multi-center, non-randomised controlled trial	132 adult multi-trauma patients (ISS ≥16 or complex injuries); Fast Track (n=65) vs. Care as Usual (n=67)	**Fast Track Program:** Early integrated coordination between trauma surgeon & rehab physician; earlier transfer to specialised rehab unit; early multidisciplinary treatment (psychologist, social worker); early non-weight-bearing mobilisation; structured protocols	- Both groups improved significantly in FIM and SF-36 scores over 12 months - Fast Track achieved maximum functional recovery earlier (6 months vs. 9 months for Care as Usual) - No significant differences between groups at 12 months - QoL remained below pre-trauma baseline at 12 months - Anxiety/depression (HADS) improved similarly in both groups	**Evidence Strength:** Moderate – Non-randomised design; adjusted analyses. **Clinical Impact:** Moderate – Faster recovery in Fast Track group; long-term outcomes similar**.** **Applicability:** High – Supports integrated, early multidisciplinary rehab for multi-trauma patients; concept adaptable to other settings.

Appendix 6: Summary table of articles - Caseload specific articles: Other

Author	Year	Study Design	Population	Intervention	Key Findings	Relevance to practice
Heldmann et al.	2019	Systematic review of 24 RCTs	Acutely hospitalised older patients (≥65 years), multimorbid, frail	**Early inpatient rehabilitation**: physical exercise interventions or multidisciplinary programs during acute hospital stay	- 33 different primary outcome measures identified across studies - Mobility measures were most sensitive to detect intervention benefits - Functional status measures often mismatched intervention content and showed inconsistent results - Hospital outcomes (LOS, discharge destination) improved only when interventions included discharge planning - Psychological and cognitive outcomes rarely showed significant effects	**Evidence Strength:** Moderate – Based on multiple RCTs but heterogeneous methods and outcome measures. **Clinical Impact:** Moderate – Mobility-focused interventions show benefit; functional outcomes less consistent. **Applicability:** High – Highlights need for tailored outcome measures and early rehab strategies in acute geriatric care.
Sahota et al.	2017	Pragmatic randomised controlled trial with health economic analysis	250 frail older adults (≥70 years) admitted as acute medical emergencies in a UK teaching hospital	**CIRACT service: community in-reach team (senior OT "transition coach," senior physiotherapist, assistant practitioner)** linked to social services vs. Traditional hospital-based rehab (THB-Rehab)	- No significant difference in **hospital length of stay** (median 8 vs. 9 days; mean ratio 0.90, 95% CI 0.74–1.10) - No significant difference in **readmission rates** at 28 or 91 days - No significant difference in functional ability (Barthel ADL), quality of life (EQ-5D), or comorbidity scores - Cost-effectiveness analysis: CIRACT may be cost-effective (ICER	**Evidence Strength:** Moderate – Well-designed RCT but single-center and underpowered for small differences. **Clinical Impact:** Low to Moderate – No clear improvement in LOS or readmissions; possible small benefit (<2.3 days**) cannot be excluded.** **Applicability:** Moderate – Highlights challenges in implementing integrated discharge

					£2,022/QALY), but results uncertain	models; requires larger trials and inclusion of community medical input.
Bizheva et al.	2016	Randomised control trial	30 patients post low back surgery (EG n=20; CG n=10)	**Early intensive rehabilitation:** daily physical therapy (30 min), mild-to-moderate intensity, sitting position from day 1, gait training, PNF, plus educational booklet for ADLs vs. standard PT with oral instructions	- Both groups improved significantly in transfers, TUG, and walking speed ($p<0.001$) - EG showed greater improvement in **transfer ability** at discharge and 1 month ($p<0.05$ and $p<0.01$) - EG had better TUG performance at 1 month ($p<0.05$) - Walking speed improved similarly in both groups	**Evidence Strength:** Moderate – Small sample size but randomised design. **Clinical Impact:** Moderate to High – Early rehab plus written education accelerates functional recovery. **Applicability:** High – Practical for inpatient and home programs; emphasises patient education.
Lacey et al. ***Abstract only.***	2018	Service evaluation (initial 6-month review)	25 patients with brain and spinal tumors requiring intensive neuro-oncology rehabilitation in acute setting	**Neuro-oncology Rehab Service (NORS):** Dedicated OT and PT delivering intensive rehab in acute setting; dedicated inpatient beds; MDT collaboration; benchmarked against other rehab services	- Improvements in functional outcomes (UK FIM+FAM), neurological impairments, QoL, and length of stay - Positive patient experience reported by all - Service well received by MDT - Financial benefits through reduced care needs	**Evidence Strength:** Low – Early service evaluation, no control group, abstract only article. **Clinical Impact:** High – Demonstrates feasibility and positive early outcomes. **Applicability:** High – Model can be replicated in other acute settings; supports integrated MDT approach.

Appendix 7: In-reach Rehab Toolkit Clinical Advisory Group

Group Member	Role
Dr Amanda Baker	Advanced Physiotherapist- Rehabilitation, Co-Chair of Queensland Rehabilitation Clinical Network, Allied Health – Service Delivery Model, *Sunshine Coast HHS*
Dr Teresa Boyle	Senior Medical Officer, Rehabilitation Response Team, Gold Coast University Hospital, *Gold Coast HHS*
Damiane Clifford	Advanced Physiotherapist – Rehabilitation, Cairns Hospital, *Cairns & Hinterland HHS*
Georgina Clowes	Clinical Nurse Consultant, Rehabilitation Response Team, Gold Coast University Hospital, *Gold Coast HHS*
Elishia DeKoning	Advanced Physiotherapist - AHP team leader – RIISE Sunshine Coast University Hospital, *Sunshine Coast HHS*
Dr Chau Do	Senior Medical Officer, In-reach Rehabilitation Team, Princess Alexandra Hospital, *Metro South HHS*
Sarah Frisby	Director of Occupational Therapist, Redcliffe Hospital, *Metro North HHS*
Julie Harding	Clinical Nurse Consultant, Sunshine Coast University Hospital, *Sunshine Coast HHS*
Tamsin Mahoney	Director of Occupational Therapy, Surgical Treatment and Rehabilitation Service (STARS) Hospital, *Metro North HHS*
Hannah McGhee	Principal Project Officer, Qld Rehabilitation Clinical Network, Healthcare Improvement Unit, *Department of Health*
Jenna Scott	Allied Health Team Leader, Rehabilitation Response Team, Gold Coast University Hospital, *Gold Coast HHS*
Treena Seeto	Advanced Physiotherapist – In-reach Rehab Team, Princess Alexandra Hospital, *Metro South HHS*
Andrew Statham	Senior Physiotherapist, Royal Brisbane and Women's Hospital, *Metro North HHS,* Trauma Network
Matthew Taylor	Allied Health Director Rehabilitation, Gold Coast University Hospital, *Gold Coast HHS*
Mary Williams	Director of Physiotherapy, Toowoomba Base Hospital, *Darling Downs HHS*

Note: Participation in the Clinical Advisory Group does not imply individual endorsement of all findings or recommendations.

Appendix 8: In-reach services – Benchmarking

In-reach rehabilitation services from the following hospital's participated in benchmarking surveys:

- Flinders Medical Centre
- Gold Coast University Hospital and Robina Hospital
- John Hunter Hospital
- Liverpool Hospital
- Nepean Hospital
- Princess Alexandra Hospital
- Royal Hobart Hospital
- Royal North Shore Hospital
- St Vincent's Hospital
- Sunshine Coast University Hospital
- Westmead Hospital

Abbreviations

ADL	Activities of Daily Living
AHA	Allied Health Assistant
AHMOC	Allied Health Model of Care
ARISE	Acute Rehabilitation Intensive Services
AROC	Australasian Rehabilitation Outcomes Centre
BI	Barthel Index
CIRACT	Community In-reach Rehabilitation and Care Transition
CNC	Clinical Nurse Consultant
DEMMI	De Morton Mobility Index
FAC	Functional Ambulation Classification
FIM	Functional Independence Measure
FMA	Fugl-Meyer Assessments
GCS	Glasgow Coma Scale
GOSE	Glasgow Outcome Scale – Extended
HADS	Hospital Anxiety and Depression Scale
ICER	Incremental Cost-Effectiveness Ratio
ICU	Intensive Care Unit
IRT	In-reach Rehabilitation Team
LOS	Length of Stay
MDT	Multidisciplinary Team
PASS	Postural Assessment Scale for Stroke Patients
PReS	Proactive Rehabilitation Screening
PREM	Patient Reported Experience Measure
PROM	Patient Reported Outcome Measure
PSFS	Patient Specific Functional Scale
PT / OT / SLP	Physiotherapy / Occupational Therapy / Speech and Language Pathologist
QoL	Quality of life
RCT	Randomised Control Trial
RITH	Rehab in the Home
RTW	Return to Work
SMO	Senior Medical Officer
SNAP	Subacute and Non-acute Patient data set
SSIR	Stroke-Specific In-Reach Rehabilitation
TBI	Traumatic Brain Injury
TUG	Timed Up and Go Test
VEI	Very Early Intervention

Glossary

Activities of Daily Living (ADL)	Basic self-care tasks such as bathing, dressing, eating, and mobility, used to assess functional independence.
Allied Health Assistant (AHA)	Support staff who assist allied health professionals in delivering therapy and patient care under supervision.
Australasian Rehabilitation Outcomes Centre (AROC)	National benchmarking body for rehabilitation services, collecting and reporting standardised outcome data.
Barthel Index (BI)	A scale measuring performance in activities of daily living, commonly used to assess functional independence.
Clinical Nurse Consultant (CNC)	A senior nursing role responsible for clinical leadership, coordination, and patient flow management.
Functional Ambulation Classification (FAC)	A tool used to classify a patient's walking ability and level of assistance required.
Functional Independence Measure (FIM)	A standardised tool to assess a patient's level of functional independence across motor and cognitive domains.
Goal Attainment Scaling (GAS)	A structured method for setting and evaluating individualised patient goals.
Length of Stay (LOS)	The duration of a patient's admission in hospital or within a specific program (e.g., In-reach).
Multidisciplinary Team (MDT)	A group of healthcare professionals from different disciplines working collaboratively to deliver patient care.
Patient Reported Outcome Measure (PROM)	A questionnaire completed by patients to assess health status, symptoms, or functional outcomes from their perspective.
Patient Reported Experience Measure (PREM)	A tool capturing patient feedback on their experience of care and service delivery.
Patient Specific Functional Scale (PSFS)	A patient-reported measure where individuals rate their ability to perform specific activities important to them.
Physiatrist	A medical specialist in physical medicine and rehabilitation, often leading rehabilitation programs.
Proactive Rehabilitation Screening (PReS)	A systematic process for identifying patients likely to benefit from rehabilitation early in their acute admission.
Rehabilitation in the Home (RITH)	A model of care providing rehabilitation services in a patient's home environment after hospital discharge.
SNAP (Subacute and Non-Acute Patient) Dataset	A standardised dataset used to monitor activity and performance in subacute and rehabilitation services.
Timed Up and Go (TUG)	A quick mobility test measuring the time taken for a patient to stand up, walk a short distance, and return to sitting.
De Morton Mobility Index (DEMMI)	A validated tool assessing mobility across a range of functional tasks, suitable for older adults and rehabilitation settings.
Team Leader (TL)	A senior allied health professional responsible for operational oversight and clinical leadership within the In-reach team.