

Development of a ‘fit-for-purpose’ Hospital in the Home program for patients following low trauma hip fracture: using data to identify the pressure points

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Background & Aim: Care pathways incorporating Hospital in the Home (HITH) programs are available for people following low-trauma (osteoporotic) hip fracture (LTHF) as a strategy to reduce total length of stay (LOS),^{1,2} but there is no published evidence supporting the development of key components of such programs for this specific population. As a precursor to program implementation, a multidisciplinary team devised criteria for both HITH eligibility and readiness for HITH transfer. This study aimed to describe the rates and timing of suitability for HITH when these criteria were applied prospectively to older adults admitted with LTHF.

Method: Prospective, five-month audit of patients undergoing surgery for LTHF admitted at a single facility. Criteria for HITH inclusion/exclusion (**Box 1**) and three time-based safety criteria (**Box 2**) potentially signaling readiness for HITH transfer [time (post-operative day, POD) to first complication, time to medical stability, time to mobilization threshold] were applied to patient-level data routinely available in the medical record.

Box 1. Inclusion and Exclusion criteria	
Inclusion	
• Community-dwelling (private dwelling or independent in retirement village)	
• ≥ 50 years old	
• Frailty score ≤ 6 using the Clinical Frailty Score ¹⁴	
• Anticipated to return to the community	
• Permitted to weight-bear as tolerated	
• Presence of a carer	
Exclusion	
• Presence of other fractures that would delay discharge	
• Catastrophic complication perioperatively	
• Residential location outside the Liverpool and Fairfield Local Government Area	
• Private health insurance	
• Active end-of-life management or palliative care	
• Presence of other impairments which preclude early return home (e.g. significant hemiparesis, complex or disruptive renal dialysis needs, history of daily falls pre-admission)	
• Fracture occurred whilst in hospital for another reason	

Box 2. HITH Transfer criteria	
Time to (what post-operative day) first complication experienced	“Complication” includes any of the following: Urinary tract infection; Surgical site infection; pneumonia; Blood stream infection; Infections or inflammatory complications associated with peripheral/central venous catheters; Multi-resistant organism; Infection associated with prosthetics/implantable devices; Gastrointestinal infections; Other high impact infections; pressure injuries; falls resulting in fracture or head injury; surgical complications requiring return to theatre; unplanned intensive care admission; venous thromboembolism; renal failure requiring dialysis; GIT bleeding; medication complications; delirium; death; cerebrovascular accident; respiratory failure, aspiration pneumonia, pulmonary oedema; urinary or fecal incontinence; malnutrition; hypoglycemia; heart failure, arrhythmias, cardiac arrest, STEMI, NONSTEMI, unstable angina, infarction, infective endocarditis; motor neuropraxia
Time to (what post-operative day) medical stability achieved	<ul style="list-style-type: none"> • Eating and drinking • No medical emergency team calls within last 24hr • Pain adequately controlled • No intravenous lines
Time to (what post-operative day) achieve acceptable mobility level	Able to mobilize with maximum assistance of one person +/- walking aid

Results: *Eligibility:* Of 114 patients screened, 61 (54%) were initially eligible with 41 (36%) remaining eligible over the episode-of-care (**Fig 1**). *Transfer considerations (Figs 2-4):* 75% of those who experienced a complication did so by POD4; 75% achieved medical stability by POD5; 75% achieved the mobility criterion by POD7, and; 75% of patients met all criteria by POD7.

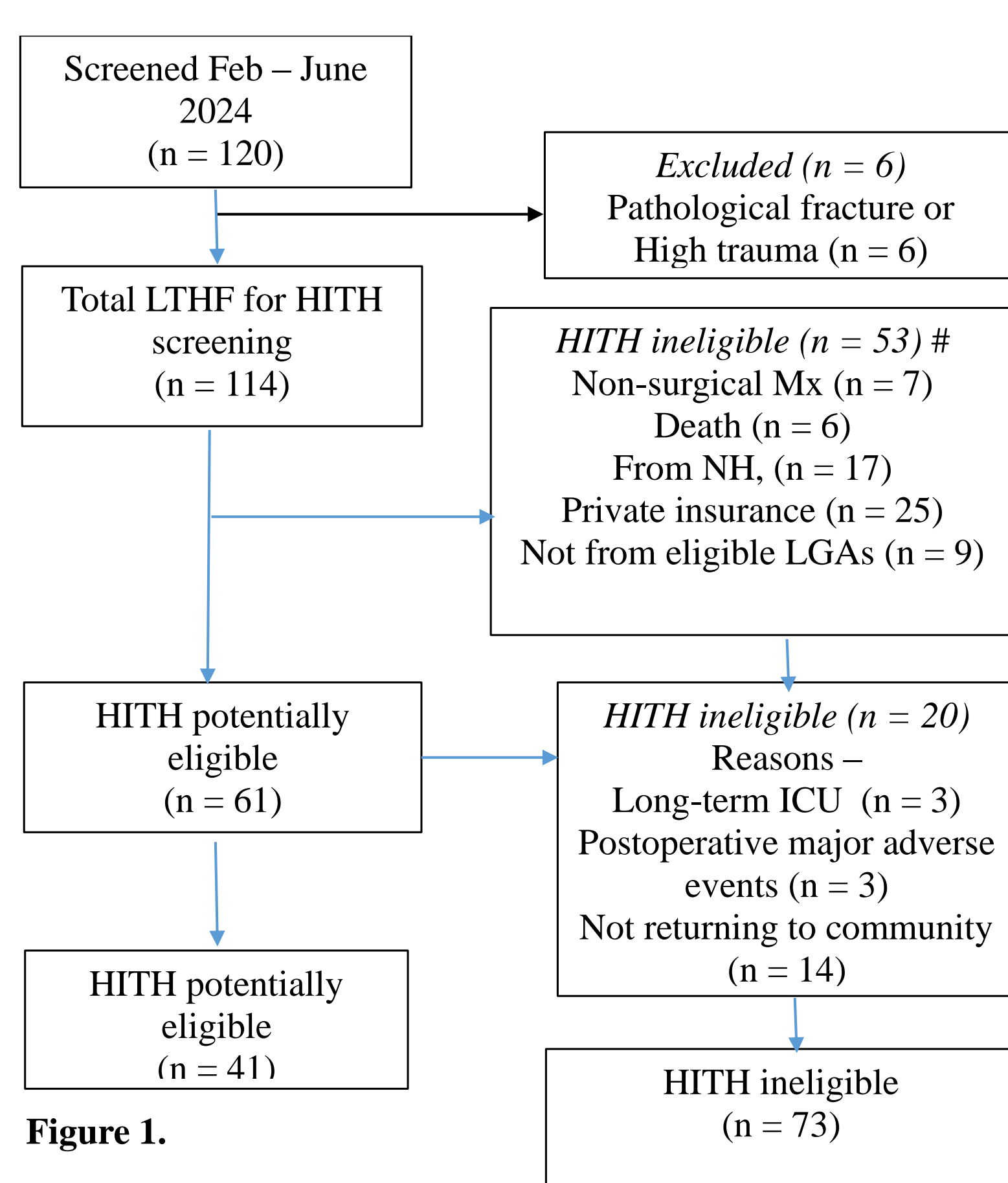


Figure 1.

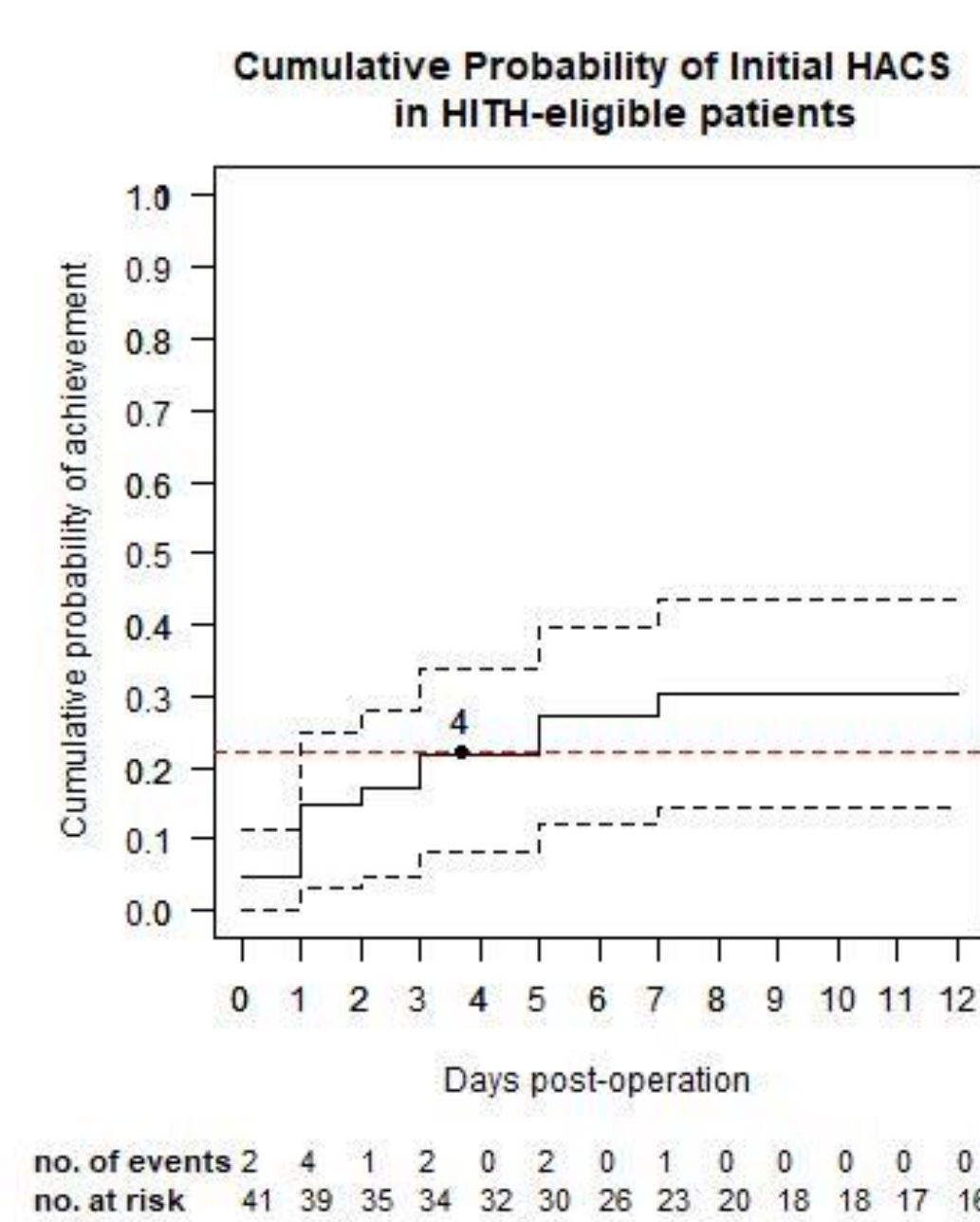


Figure 2. Hospital acquired complications

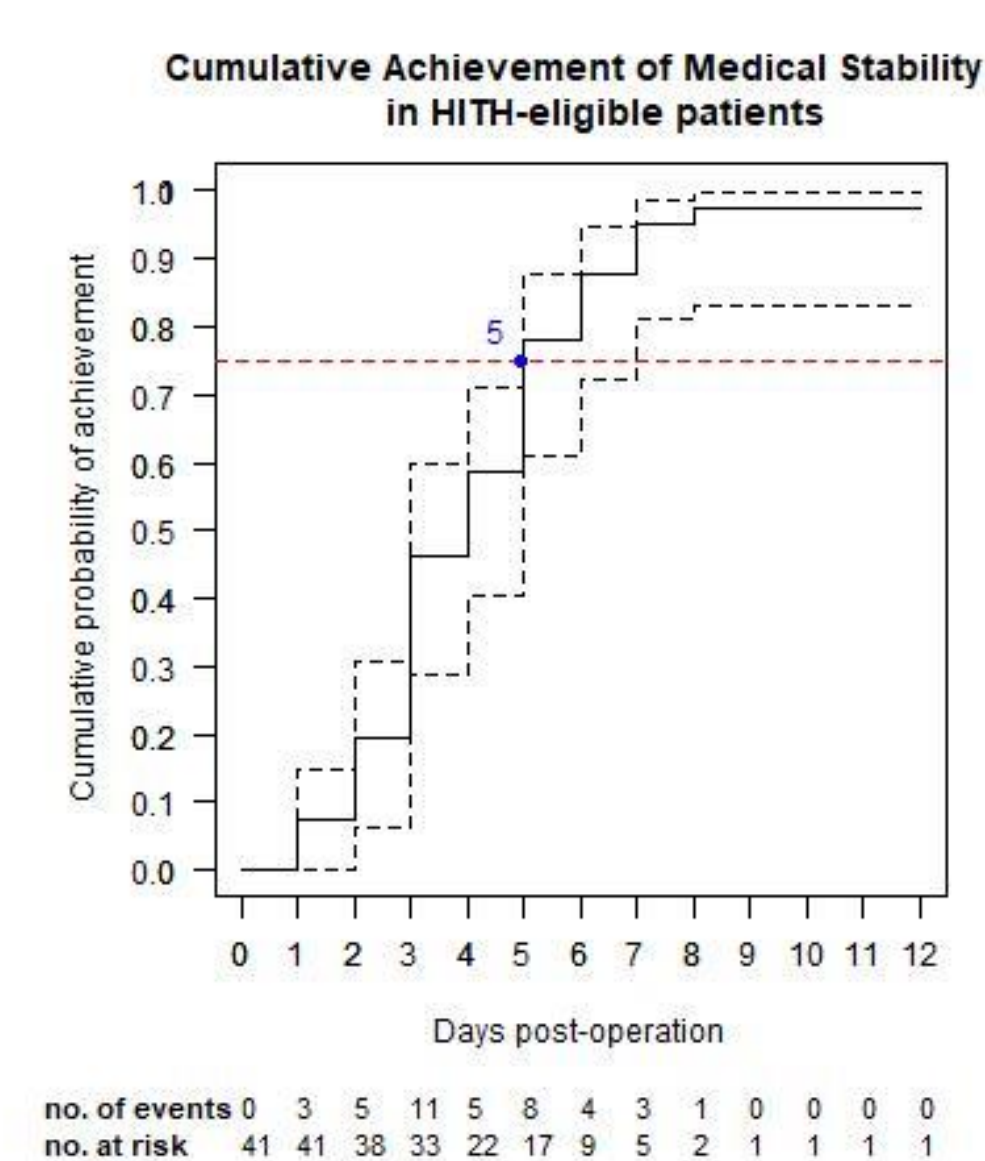


Fig 3. Achievement of medical stability

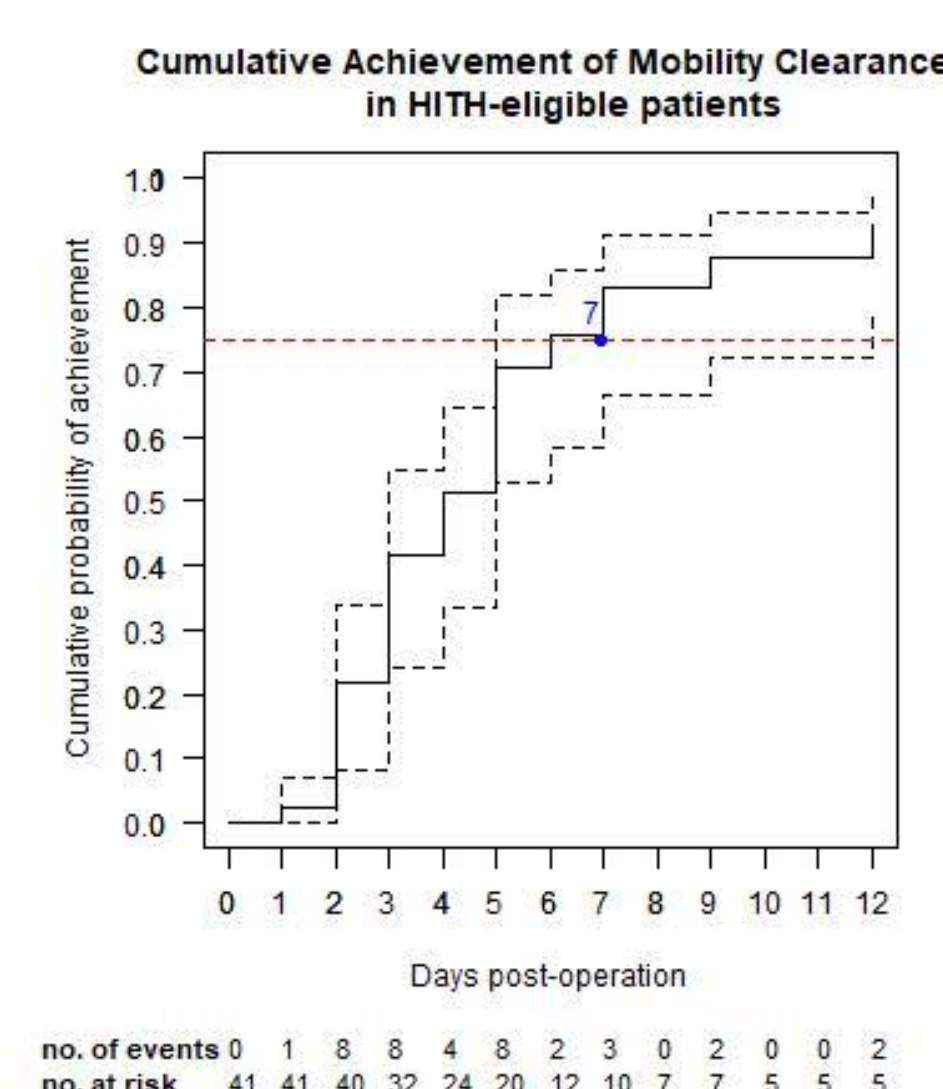


Fig 4. Achievement of mobility clearance

Conclusion: Using data-informed criteria, we estimate that approximately one-third of LTHF will be eligible for HITH with most ready for transfer within a week post-surgery. A HITH program using safety-focused criteria may help reduce LOS for patients with LTHF.