

Rapid

Review



NORTH AMERICAN
OBSERVATORY
on Health Systems and Policies

Alternate Level of Care and Delayed Discharge: Lessons Learned from Abroad

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February 2020

This report was produced by the North American Observatory on Health Systems and Policies. The views expressed by the authors are not intended to represent the views of reviewers or partners in the North American Observatory on Health Systems and Policies.



Suggested citation:

Bhatia, D., Peckham, A., Abdelhalim, R., King, M., Kurdina, A., Ng, R., Allin, S., & Marchildon, G. (2020). Alternate Level of Care and Delayed Discharge: Lessons Learned from Abroad. Toronto: North American Observatory on Health Systems and Policies. *Rapid Review* (No. 22).

Acknowledgements:

We would like to gratefully acknowledge the editing and production support of Patrick Farrell and Monika Roerig. We also thank Marco Inzitario for offering expert opinions on a variety of promising policies and programs. Finally, we would like to gratefully acknowledge Michael Church Carson and Mariana Morales Vazquez for their support with citation screening and data extraction.

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Introduction and Background

Delayed discharge, also known as alternate level of care (ALC), is a longstanding challenge facing health systems globally. In Canada, ALC is a designation used to identify “patients that are receiving care in a setting where the intensity and type of care offered is no longer appropriate for their current needs” (Cancer Care Ontario, 2009). According to the Canadian Institute for Health Information (CIHI), the percentage of patient days in hospitals that were designated ALC in 2017-2018 ranged across the provinces from 12% in British Columbia and 15% in Ontario to 21% in Prince Edward Island (CIHI 2019). Patients at risk of prolonged hospital stay include older adults, those with functional or cognitive impairments, those with multiple comorbidities, and those of marginalized sociodemographic status (Moore et al., 2018; Turcotte et al., 2019). In addition to using limited and expensive inpatient resources, ALC stays expose the often already frail patients to iatrogenic harms, such as hospital-acquired infections, functional decline, and social isolation (CIHI, 2009).

Delayed discharge is associated with a variety of factors, including individual patient circumstances, delayed assessment, lack of coordination and communication between hospitals and community settings, and limited supply of long-term care options (i.e., in the community and in facilities). Addressing these problems thus requires changes to both care delivery and policies that impact care (e.g., methods of funding, regulation, and other policy levers). The challenge of delayed discharge and ALC is not unique to Canada, and a number of comparable jurisdictions have introduced policy programs that have had some impact on reducing delayed discharge in recent years. For example, the implementation of the 2014 Care Act in the United Kingdom (UK) led to multiple country-specific policies across England, Wales, and Scotland, aimed at collectively reducing delayed discharges across the UK. The focus of this rapid review is to draw on published academic and grey literature from outside Canada to develop insight into some of the policy options governments may consider as they address the persistent challenge of delayed discharge/ALC. We are particularly interested in describing how policy programs have worked to reduce delayed discharge/ALC by implementing approaches to transfer people out of hospital to community-based settings rather than facility-based long-term care options.

Methods

Rapid Scoping Review

Information sources

We searched MEDLINE (Ovid), EMBASE (Ovid), CINAHL-Plus (EBSCO), and PsycINFO (Ovid) using a combination of database-specific syntax (e.g., Medical Subject Headings, MeSH) and text-words related to delayed discharge/ALC.¹ The following limits were applied to the search strings: publication year 2016-2019, English-language, and human subjects. CINAHL also allowed us to exclude sources indexed in MEDLINE, to minimize inclusion of duplicates. The database search was first developed in MEDLINE and subsequently translated into other database-specific syntax. All final electronic database searches were conducted and exported on July 31, 2019. The full electronic database search strategy is available in Appendix A. The database search was supplemented by snowballing and scanning of reference lists of the included studies.

Study selection and data extraction process

Records were imported from each electronic database into a reference management software (Mendeley Desktop v1.19.5) to remove duplicates. To pilot the selection criteria, the titles and abstracts of the first 100 records were screened for eligibility by five independent reviewers (AP, DB, MCC, MK, MMV). Disagreements were addressed through discussion between the reviewers, where selection criteria were finalized. The remaining titles and abstracts were split evenly between the same set of reviewers for screening. To verify the quality of the title and abstract screening process, one reviewer (MMV) re-screened a 5% random sample of all references. No inappropriate exclusions were detected. Studies that passed title and abstract screening were split evenly between four reviewers for full-text screening (DB, MCC, MK, MMV). The full-text articles of studies whose eligibility was uncertain were reviewed by the lead team members and final inclusion decisions were made by their consensus (AP, DB, RA).

Studies were excluded if: (1) they were focussed exclusively on Canada; (2) they were not original, primary, or peer-reviewed sources (e.g., literature reviews, editorials, conference proceedings, case studies and series, thesis dissertations); (3) the focus of the intervention was not to reduce delayed discharges, ALC or hospital length-of-stay; (4) the intervention involved discharge to other care settings, such as nursing homes, rather than the patient's home; (5) the intervention involved discharge from other settings, such as palliative care facilities, rather than acute care hospitals; (6) the study design was not evaluative (where evaluative studies were defined as those assessing the impact of the intervention on specific outcomes, chosen a priori); (7) the study used quality-improvement methodology (e.g., lean six-sigma, plan-do-study-act cycles); (8) the intervention did not reduce ALC, length-of-stay, or delayed discharge; (9) the study involved a practice change within a single unit (e.g., internal process changes in a

¹ Similar to the concept of ALC (used in Canada), delayed discharge (or delayed transfer of care) refers to a patient who no longer requires the intensity of resources or services provided in a hospital, but nonetheless continues to occupy bed space while waiting to be safely transferred to a home, community, or long-term care centre ("Delayed transfers of care: a quick guide," 2018). Prolonged length-of-stay is also a related concept measured by some jurisdictions. Given this heterogeneity in terminology, we will use "delayed discharge/ALC" as an umbrella term throughout this report. However, when discussing specific studies and programs, we will use the original terminology provided by the sources.

single hospital); (10) the full-text of the source was not accessible through the university library or could not be located. The detailed selection process is presented in the PRISMA flow diagram in Appendix B.

Data abstraction was completed by three reviewers (DB, MK, MMV) with cross-checking by two others (AP, RA). Data items included a description of the intervention or policy of interest, comparison group (if applicable), intervention setting, study design and methodology, target population characteristics, and intervention impacts on outcomes (e.g., delayed discharge, ALC days, length-of-stay, patient health, functional status, quality-of-life, and caregiver experience). Data collation and thematic analysis was completed by three reviewers (AP, DB, RA). A summary of the studies retrieved in the scoping review is available in Appendix C.

Rapid Jurisdictional Review

The scoping review was supplemented by brief targeted reviews of comparable jurisdictions to identify existing initiatives aimed at reducing delayed discharge from hospital, ALC days, or length-of-stay. To identify jurisdictions that may have shown some promise in impacting these outcomes, we drew on the Organization for Economic Cooperation and Development (OECD) report “Health at a Glance: Europe 2018,” which cited notable approaches to reduce delayed discharge/ALC in Denmark, the Netherlands, Norway, Scotland, Sweden, and the UK. Of these, only jurisdictions with accessible publicly available information were included in this review. We were able to find publicly available information on policies that demonstrated some success in reducing delayed discharge/ALC in England, Scotland, and Wales; as such, these became the focus of our jurisdictional review. Once the jurisdictions of interest were identified, we performed a broad scan of grey literature (e.g., government and independent evaluation reports), government websites, media releases, and websites of other relevant international bodies (e.g., European Observatory on Health Systems & Policies, OECD, World Health Organization & the World Bank) to gather evidence about policies impacting delayed discharge/ALC in each relevant jurisdictional context. A summary of the jurisdictional review is available in Appendix D.

Limitations

A number of limitations of this review should be acknowledged. Our scoping review only included studies published in the past three years (2016-2019); as such, evaluations published outside of this range have not been captured in our search (e.g., older interventions or very recent interventions that have not yet undergone evaluation). Our search was also limited to studies written in English; however, according to a previous comprehensive review by evidence synthesis experts, the use of language restrictions is unlikely to result in systematic biases that would meaningfully alter the interpretation of the findings (Morrison & Canadian Agency for Drugs and Technologies in Health, 2009). Caution is warranted about inferring causality between the described interventions and the reported study outcomes in observational study designs. Other contemporaneous policy changes (historical bias), natural changes over time (maturation bias), and confounding by other unmeasured contextual and population-related factors may also contribute to the observed changes. Further, a critical appraisal of the literature included in this review was not completed. The conclusions and implications associated with the findings of the literature should thus be interpreted with caution, as the quality of study methodology affects the strength and robustness of the evidence. Finally, the jurisdictional review was selective; as such, we may not have captured all the promising initiatives aimed at reducing delayed discharge/ALC.

Analytic Overview

Of the 110 articles pulled for full-text review, 13 were excluded because they did not reduce delayed discharge/ALC (Appendix B). In this rapid scoping review, we describe six studies on policy programs that were successful at reducing delayed discharge/ALC (Appendix C). Each study targets a different jurisdiction, including France (Gandré et al., 2017a), Germany (Ignatyev et al., 2019), Scotland (Taylor et al., 2016), Switzerland (Pletscher, 2016), South Korea (Shin et al., 2017), and Australia (Osborne et al., 2018).

Populations of interest

The populations in the included studies were described as patients living with complex long-term needs, including the following groups: those with mental and cognitive illnesses (n = 4; (Gandré et al., 2017a); Ignatyev et al., 2019; Pletscher, 2016; Taylor et al., 2016), elderly patients at risk of prolonged hospitalization due to complex psychosocial needs (n = 1; Osborne et al., 2018), and cancer patients requiring palliative care (n = 1; Shin et al., 2017).

Interventions

The articles profiled six different interventions that were grouped into three categories. The first category involved building long-term care supply and spaces in ambulatory or community care settings (Gandré et al., 2017a; Ignatyev et al., 2019; M. Taylor et al., 2016). The second category included interventions on payment reforms (Pletscher, 2016; Shin et al., 2017). Finally, the third category highlighted the creation of transition navigator roles overseeing patient discharge (Osborne et al., 2018). These interventions are described in detail below, with an emphasis on their impact on delayed discharge/ALC.

Ambulatory and community setting interventions

Three policy programs from France, Germany, and Scotland were designed to shift care outside the hospital into ambulatory and community settings by targeting those who live with long-term mental health issues.

In France, an alternative to full-time hospitalizations (AFTH) strategy was introduced by the government in the early 2000s in response to the global movement of de-institutionalization of psychiatric patients (Gandré et al., 2017b; Leguay & Boyer, 2012; Ministère des Solidarités et de la Cohésion Sociale & Ministère du Travail, de L'Emploi et de la Santé, 2011; Taylor Salisbury et al., 2016). The AFTH strategy aims to provide an alternative care setting to long-term psychiatric patients not requiring acute inpatient care. These settings include ambulatory care; part-time hospital care (e.g., day or night care, part-time therapy centers, and therapeutic workshops); care integrated in the community (e.g., Hospital at Home programs); and stays in therapeutic apartments, crisis centers, or rehabilitation centers. Alternatives to hospital care also require interdisciplinary approaches and often involve psychiatrists working with other healthcare providers, such as doctors, nurses, nursing auxiliaries, psychologists, physiotherapists; social and educational staff; as well as administrative staff (Mossé et al., 2013). Gandré et al. (2017a) evaluated the impact of AFTH models and found that they were associated with a significant reduction in hospital length-of-stay.

In Germany, flexible and integrative treatment (FIT64b) models are offered by hospital-based teams to psychiatric inpatients with both acute and chronic severe mental illness. Each team of service providers involved in this program receives a total budget for all forms of inpatient and hospital-based outpatient care (capitation principle). A total of 20 FIT64b projects can be found across Germany. Each differs considerably with regard to the duration of services, care setting, service providers, and treatment structures and processes. However, all FIT64b projects offer continuous and flexible outpatient care (extending over time and across settings to meet the unique needs of patients and caregivers) as well as access to a variety of professional expertise (multiple provider types cooperating under one budget to provide care) (Johne et al., 2018). In 2018, Ignatyev et al. evaluated the impact of FIT64b on the average length-of-stay in older people with mental illness, relative to the traditional model of care. They found that the average hospital length-of-stay of older people with mental illness was reduced. Length-of-stay was shorter in centres exclusively providing FIT64b, compared those providing FIT64b alongside traditional models of care. The FIT64b model was particularly effective among patients with schizophrenia, mood, neurotic, stress-related, and somatoform disorders (Ignatyev et al., 2019).

In Scotland, community compulsory treatment orders (CTOs) were introduced under the Mental Health (Care and Treatment) Act, 2003. Community CTOs in Scotland are unique in that, unlike most CTOs in other settings, they can be initiated in the community, rather than in the hospital. The provision of powers to compel in the community have been quite controversial, with limited evidence demonstrating reductions in hospital bed use or improved clinical effectiveness (DeRidder et al., 2016; Maughan D, Molodynski A, Rugkåsa, Burns T, 2014; Swartz MS, Swanson JW, Wagner HR, Burns BJ, Hiday VA, Borum R, 1999). However, psychiatrists remain positive about CTOs and their use continues to increase. Community CTOs are aimed primarily at patients who have been discharged, but who, for a variety of reasons, are at risk of rehospitalization (e.g., fail to engage with necessary services, stop taking medication) (Lawton-Smith, 2007; Scotland & Scottish Executive, 2005). The most common conditions written into CTO care plans involve orders to take medication and to see healthcare providers. A nationwide evaluation of the impact of CTOs on length-of-stay found that the average length-of-stay dropped from 66 days (before CTO) to 39 days (after CTO). This evaluation also showed that middle-aged patients and those with longer psychiatric care histories derived the most benefit from CTOs, in terms of shortened length-of-stay (Taylor et al., 2016).

Payment reform interventions

Two reimbursement reforms, implemented in Switzerland and South Korea, were shown to reduce prolonged hospital stay. In Switzerland, the health administration in Zurich introduced a mixed reimbursement system at the state-run Psychiatric University Hospital in 2009. Under the new system, tariff payments consisted of a higher per diem rate for the first five days, a per-case payment on day six, and a lower per diem rate for subsequent days. The results indicated that the marginal revenue per inpatient day can affect length-of-stay and that a switch from per diem to per-case, or a mixed reimbursement system, can reduce length-of-stay even if the average revenue remains similar (Pletscher, 2016).

In the other reform example, a Palliative Care Demonstration (PCD) project using a per diem payment system (PDPS) was implemented by the Korean government in 2008 across seven hospitals. This system decreased hospitalization charges for cancer patients by 50% when hospitalized for more than 16 days.

When comparing patients in the seven PDPS hospitals to those in seven traditional fee-for-service hospitals, both the length-of-stay and the total medical costs declined by 2.56% and 0.76%, respectively, in a PDPS hospital (Shin et al., 2017).

Transition navigator interventions

In Australia, a large tertiary teaching hospital in metropolitan Southeast Queensland implemented a new discharge planning process targeting patients who require psychosocial support. This approach involved the implementation of a referral system where ward-based social workers could flag and refer patients to a highly trained specialist social worker. The specialist social worker and a social work assistant were responsible for entering and monitoring patients at risk of a prolonged stay in a clinical case management reporting system. This tracking system acted as a real-time dashboard, recording each patients' length-of-stay duration and tracking patient-specific psychosocial and systemic barriers to discharge. This multi-tier structure offered opportunities to not only appropriately address the needs of at-risk patients, but to also engage team members and key stakeholders in identifying patients facing psychosocial barriers to discharge. In contrast to the preceding model of care, this new model was more proactive and adopted a systematic approach to identifying and continuously monitoring long-stay patients or those at risk of a prolonged stay. The evaluation of the new model found that the average length-of-stay was reduced by 33 days, with 9,999 bed days released over 12 months. Despite the upfront costs of implementation and operation of the new model, it was still shown to be cost-effective (Osborne et al., 2018).

Jurisdictional Review: A Focus on the United Kingdom

As of August 2018, there was an average of 4,818 delayed patient hospital transfers per day in England alone (*Delayed transfers of care*, 2019). The Community Care Act, ratified in the UK on April 8, 2003, outlined two main courses of action: (1) to implement tariffs on social service authorities for every delayed discharge due to unavailable community care services, and (2) to provide certain community care services free of charge. Social Services Departments (SSDs) would be charged if they failed to provide care services within 48 hours of a patient's discharge notice (Bryan, 2010). Subsequently, a total of £150 million spanning from 2003 to 2006 was distributed to SSDs as delayed discharge grants, to support the transfer of patients out of hospital and to encourage joint investment planning by hospitals and the National Health Service (NHS) Primary Care Trusts (PCTs) (Bryan, 2010).

The Community Care Act was later updated with corresponding legislation in 2014. The Act implemented two main accountability approaches: assessment notices and discharge notices. For an assessment notice, the NHS is required to (1) notify local authorities of a patient's likely care and support needs that would contribute to a safe hospital discharge at the time of admission or before the date of expected admission, and (2) estimate the date of discharge (Bate, 2014; The Care and Support (Discharge of Hospital Patients) Regulations 2014, 2014). Once a patient is ready for discharge, NHS bodies must provide a discharge notice to local authorities at least one day in advance. If, after receiving both notices, local authorities do not carry out an assessment to address patient care and support needs, the NHS body can claim reimbursement of £155 per day in London or £130 elsewhere for every day the patient's discharge is delayed (Bate, 2014). The assessment focuses on patient needs and potential impact on well-being, involves the patient or appropriate caregiver, and considers both health and social care needs.

With the Community Care Act being the overarching legislation for the UK, countries within the UK have introduced policies to ensure that their healthcare systems are working to achieve the overall goal of reducing delayed discharges. Each country has legislated specific initiatives to reduce delayed discharge. Below, we describe how these programs have been implemented and adapted across England, Wales, and Scotland.

England

The Better Care Fund is a recent policy initiative that offers a pooled budget for local authorities and NHS organizations to collaborate to plan and deliver services. The goal is to reduce delayed transfers by integrating health and social care services; while there has been some promise, evidence demonstrating its success has been limited (Forder et al., 2018).

The High Impact Change Model was developed to support local systems in the reduction of delayed discharge (Department for Communities and Local Government, 2017). The model identifies eight system changes to improve delayed discharge: (1) early discharge planning; (2) systems to monitor patient flow; (3) multi-disciplinary/multi-agency discharge teams, including the voluntary and community sector; (4) home first/Discharge to Assess; (5) seven-day service; (6) trusted assessors; (7) focus on choice; and, (8)

enhancing health in care homes. This model has led to several local initiatives across England. Two such models (Discharge to Assess and Flow Cost Quality Program) are detailed in the subsequent sections.

Box 1. Defining terms

Commissioning: Similar to purchasing of services; in England, Clinical Commissioning Groups (CCGs) purchase most health care, including mental health services, urgent and emergency care, elective hospital services, and community care; local governments (local authorities) purchase a range of publicly funded practical support services to meet needs that arise from ageing, disabilities, and ill-health, such as residential and nursing care, adaptations, meals, and home care.

Clinical Commissioning Groups (CCGs): Clinically-led statutory NHS bodies responsible for the planning and commissioning of health care services for their local area; they are membership bodies, with local general practitioner (GP) practices as the members, led by an elected governing body comprising GPs, other clinicians, and lay members; CCGs are responsible for approximately 2/3 of the total NHS England budget.

Local authority: Organisation of local government; the most common type of local authority are councils made up of councillors elected by the public in local elections; they are responsible for a range of services including adult social care, education, planning, housing, waste disposal, recycling and collection, environmental health, etc.

(Sources: National Audit Office, 2018; NHS Clinical Commissioners, 2019)

Discharge to Assess

Discharge to Assess (D2A) provides short-term (≤ 6 weeks) funded home or community care to patients no longer requiring acute inpatient care, but still requiring some care services (NHS England, 2014). Implementation has varied across jurisdictions; below, we highlight the efforts of Warwickshire and Sheffield.

Warwickshire

The Warwickshire council implemented the D2A program to provide community services across Warwickshire and acute services in Warwick Hospital (South Warwickshire). The CCG and the Hospital Trust (NHS England, 2014) provide D2A program funding, which is then funneled through the Warwickshire County Council (Warwickshire County Council, 2014). In the Warwickshire D2A program, patients are discharged from the hospital along three pathways: (1) to intermediate care and “reablement”² services in their own home; (2) to residential care or community-based hospital settings for rehabilitation first, followed by a return to home; and (3) to a residential setting offering continuing care (NHS England, 2014). The development of the Warwickshire D2A program included commissioning two GP practices to provide clinical input for 30 temporary community nursing home beds that support discharge through Pathway 3 (NHS England, 2014).

By 2014, 112 patients have benefited from Pathways 1 (40 patients discharged through this pathway per week), 2 (23 patients discharged per week), and 3 (85 patients discharged per week) (Warwickshire

² A concept similar to rehabilitation that is defined in the UK as “a short and intensive service, usually delivered in the home, which is offered to people with disabilities and those who are frail or recovering from an illness or injury” (see: Social Care Institute for Excellence (2012, March). At a glance 54: Reablement: a guide for families and carers. Available at: <https://www.scie.org.uk/publications/atagance/atagance54.asp>. Last accessed: March 10, 2020).

County Council, 2014). Pathway 1 was also shown to have averted 0.5 million net long-term costs in Year 1 of the program (NHS England, 2014). The program led to shorter length-of-emergency stay for adult inpatients and shorter length-of-hospital stay for those over age 75, due to reduced emergency visits and reduced patient transfers between specialty units within the hospital (Monitor, 2015). The program uses care coordinators who support patients and their families throughout the discharge process. Each pathway is intended to offer care for six weeks, after which patients shift to their GPs' care, self-funded care, local authority-funded care, or NHS continuing healthcare (CHC)³. Care coordinators assess patients prior to the end of the Warwickshire D2A program and ensure that continuous support is offered as needed (NHS England, 2014).

Sheffield

The Sheffield Hospital implemented the D2A program using an incremental improvement approach, starting with one patient per week and building up to 185 per week on average. The hospital received no additional funding to implement the D2A program. In the Sheffield D2A program, a patient's immediate needs are assessed by a ward multidisciplinary team, while ongoing needs are assessed in the community by an integrated health and social care team called "Active Recovery". Prior to discharge, a "Transfer of Care" form is used to ensure that a trusted assessor is arranged. To date, over 9,000 older inpatients have been discharged through the program (NHS Foundation Trust, n.d.). The Sheffield D2A program has also led to a 37% increase in the number of patients discharged on their day of admission or the following day. These positive changes have been attributed to the flexibility of the Sheffield D2A program's patient assessments, as well as weekly multi-agency and multidisciplinary meetings, where leaders and care providers share information and work towards program improvement (NHS England, 2014). Program flexibility is evidenced by the multidisciplinary of the community integrated health and social care team, as ongoing needs assessments are conducted social workers, nurses, physiotherapists, and occupational therapists; as well as by the variety of settings needs assessments could be conducted in, including the patient's home, a care home, a rehabilitation facility, or a community hospital (NHS Foundation Trust, n.d.). The Sheffield D2A program trains its staff on their patient assessment approach ("Generic Assessment" model) at the Sheffield Hallam University to enable its effective use (NHS England, 2014).

Flow Cost Quality Programme

The Health Foundation introduced the Flow Cost Quality Programme in 2010 (The Health Foundation, 2013). This program was inspired by the Institute for Healthcare Improvement's Impacting Cost + Quality program in the United States, and was developed in response to England's Quality, Innovation, Productivity, Prevention (QIPP) policy agenda (Smith, 2012).

The program ran in two NHS trusts: South Warwickshire and Sheffield Teaching Hospitals. The team in Sheffield focused on care for frail patients, while South Warwickshire focused on emergency care for all adult patients (The Health Foundation, 2013).

³ A long-term social services arrangement for individuals with complex needs, funded solely by the NHS, at no out-of-pocket cost to the patient (see: National Health Service (2018, January). NHS continuing healthcare. Available at: <https://www.nhs.uk/conditions/social-care-and-support-guide/money-work-and-benefits/nhs-continuing-healthcare/>. Last accessed: March 10, 2020).

The Flow Cost Quality Programme incorporated systematic quality improvement (lean⁴) processes to identify concerns around patient flows and address them through an interdisciplinary team (The Health Foundation, 2013). It also applied the “Big Room” approach, as key stakeholders from across the care pathway were involved, including clerks, secretaries, managers, and clinicians from acute, primary, and social care settings (The Health Foundation, 2013).

Both sites identified the need to change work practices to enable real-time availability of practitioners and services (Oliver et al., 2014; The Health Foundation, 2013). The team at Sheffield introduced a frailty unit consisting of specialist medical, nursing, and therapy staff. The availability of senior staff was increased, as the team identified that two-thirds of frail patients arrived at the medical assessment unit after 6 pm when there were fewer senior staff available to perform assessments (Oliver et al., 2014). The team at South Warwickshire similarly matched consultant availability to variation in demand and conducted senior clinical assessments at an earlier time (The Health Foundation, 2013).

The Flow Cost Quality Programme produced encouraging results in both trusts. In Sheffield, admission rates for patients over 65 had fallen and bed occupancy had reduced by 60 beds within 6 months (Oliver et al., 2014). Further, in-hospital mortality fell by 15%, with readmission rates staying the same (Oliver et al., 2014). Over the same period, the length of acute stay for all patients fell from 7.7 to 6.2 days (change of 1.5 days), while the reduction for patients aged over 75 was even greater, falling from 12.6 to 9.5 days (change of 3.1 days). However, the reduction in length-of-stay was not associated with a change in readmission rates (The Health Foundation, 2013).

Wales

In 2005, the Welsh government introduced the Welsh Health Circular: Hospital Discharge Planning Guidance, which outlined a set of regulations requiring local health boards to be responsible for the development of hospital discharge policies and GPs to be aware of their role in ensuring effective and timely discharge arrangements (Age Cymru, 2018). Supporting legislation includes the Social Services and Well-being Act (2014) (“the Act”), which included regulations previously shown to positively impact hospital discharge (Age Cymru, 2018). In this legislative context and with England’s ongoing efforts to reduce delayed discharge, Wales introduced the 1,000 Lives Patient Flow Programme.

The 1,000 Lives Improvement Patient Flow Programme

Inspired by the Flow Cost Quality approach (described above), the Health Foundation collaborated with 1,000 Lives Improvement (part of Public Health Wales) in an attempt to expand the “flow” approach and determine its effectiveness across multiple organizations (rather than implemented in individual trusts) (Crisp, 2017). These efforts were overseen by the Unscheduled Care Steering Board and evaluated by the Health Foundation.

⁴ The lean methodology was used for quality-improvement efforts. The lean approach encompasses the following components: description of the scope of the issue and measures for improvement; obtaining providers’ and customers’ perspectives; analysis of data around the nature of the problem; development of a future plan and smoother flow; implementation using “plan, do, study, act” (PDSA) cycles; and continual monitoring (The Health Foundation, 2013).

This program was part of a nationwide initiative to improve flow management of patients approaching hospitals for unscheduled care. Implemented in six local health authorities, it incorporated education initiatives consisting of workshops, seminars, and online training, along with a defined “action period” for application of learning into local improvement projects (Crisp, 2017). Between 2013-2015, there were 45 projects focused on different parts of the patient pathway, from unscheduled hospital admission to discharge. Some focused on a single condition (e.g., stroke pathway), while others focused on specific hospital settings (e.g., emergency departments, wards, diagnostic departments) (Crisp, 2017).

Based on the information reported by 20 of the 45 projects carried out, there were improvements in pharmacy processes, chemotherapy processes, discharge transport, mental health capacity assessments, reduced waits in the emergency department, and reduced length-of-stay in rehabilitation centres (Crisp, 2017). The shortfalls of the program were the limited timeframe (the 2-year duration was insufficient for addressing issues and building relationships across organizational boundaries), inadequate staff resources (more managers were requested to provide ongoing support), and education activities that weren’t adapted for the local context and thus not viewed to be valuable (Crisp, 2017). Future considerations include amplifying opportunities for shared learning within and between the local health authorities, directing work to focus on system-level changes, developing stronger leadership and central coordination, and providing access to information technology and expert data analytics support (Crisp, 2017).

Scotland

Within the analytic overview section we presented an intervention from Scotland that focused on individuals living with mental health conditions (Taylor et al., 2016). Here we offer a broader overview of the policy programs introduced in Scotland to reduce delayed discharge.

Joint Action Plans

Scotland developed “Joint Action Plans” to address the management of delayed discharge in 2002. An additional £20M was allocated to NHS Boards to create local health authority-NHS Scotland partnerships to develop initiatives aimed at reducing the number of patients awaiting hospital discharge. This funding was calculated based on catchment area, needs, costs, and the number of residents served (DDEG, 2012; Technical Advisory Group on Resource Allocation, 2008). Partnerships needed to incorporate the following elements: community care services and support, such as using extra home care institutions and NHS continuing care beds; increased number of discharge assessments; and strengthened pre-admission processes (DDEG, 2012). A collaborative problem-solving network was also created where “learning and sharing” events took place to engage providers from across the healthcare system (DDEG, 2012).

The Scottish Executive Report of the Joint Future Group 2000 recommended three initiatives to tackle delayed discharges: single shared assessments, intensive home supports, and rapid response teams (Hubbard, Huby, Wyke, & Themessl-Huber, 2004; Inverclyde Council, 2019). Single shared assessments involve an evaluation of patient community care needs carried out by one professional, with involvement from other health, social care, and housing specialists as necessary. These assessments were standardized across care settings. Increasing home care capacity and investing in community-based initiatives to provide intensive home care packages was identified as important for individuals with complex needs wishing to continue living independently in the community. Hospital- or community-based teams, called

rapid response or early supported discharge teams, were created to assess and refer individuals to community-based care services, that way preventing unnecessary admissions to hospital or facilitating timely discharge (Hubbard et al., 2004).

In less than six weeks after the issue of the Action Plan, the target of reducing total number of delayed discharges by 1,000 was achieved, decreasing from 3,116 to 2,066 (DDEG, 2012). In October 2001, the average discharge delay was 153 days, where 2,162 patients were delayed for over six weeks. In April 2011, the average discharge delay decreased to 22 days, with only 12 patients delayed for more than six weeks (DDEG, 2012).

Conclusion

Delayed hospital discharge, ALC, and prolonged hospital stays are common policy struggles across OECD countries. The findings of this rapid scoping review highlight the complex problem of delayed discharge/ALC and suggest that while many jurisdictions have attempted to reduce these outcomes, (1) they are frequently unsuccessful at accomplishing this (13 studies were excluded from this review specifically because the intervention was unsuccessful), and (2) very few jurisdictions have implemented jurisdiction-wide approaches (six articles were excluded from this review because the intervention was implemented within a single organization). While we presented two studies that implemented some form of payment reform, the evidence remains mixed on the overall success of this type of intervention (Fonarow, 2018; Gaughan et al., 2017; Jha, 2018; Johnson et al., 2015).⁵ Nonetheless, there is a clear understanding in the literature of patient-level characteristics (e.g., complex psychosocial needs) that may impact a patient's risk of delayed discharge/ALC.

The jurisdictional review presents a summary of the initiatives undertaken within the UK that have been able to reduce delayed discharge/ALC. These jurisdictions implemented a variety of policy, legislative, and organizational initiatives attempting to improve discharge processes and provide care at the appropriate levels and care settings (e.g., transitional care units or in the patients' private homes).

The evidence from our rapid scoping review and jurisdictional review of UK policy programs suggest that a single approach may be insufficient to tackle the delayed discharge/ALC challenge. Based on the most recent available evidence, attempts to reduce delayed discharge/ALC rates should be multi-component, tailored to the local context, and employing the following elements:

1. **High-level policy implementation:** Comprehensive jurisdiction-wide policy implementation.
2. **Expert transition navigators and assessment procedures:** Early identification and on-going assessment protocols with highly educated and specialized discharge personnel (assessing beyond medical needs).
3. **Cross-sectoral access to information:** Electronic access to information within and across organizational and health sector boundaries, recognizing patient complexity and competing needs.
4. **Facilitating partnerships:** Establishing networks of care with shared accountability and communication efforts.
5. **Expanding supply and use of ambulatory and community care settings:** Expanding the supply of and spaces for ambulatory and community alternatives to in-hospital care.

Financial incentives alone are likely insufficient for achieving jurisdiction-wide reductions in delayed discharge/ALC rates. It is evidenced by the scoping and jurisdictional reviews that policy level interventions need to be implemented while also allowing for local innovations in adapting both within-organizational approaches (e.g., specialized transition coordinators and interdisciplinary collaborations), as well as cross-organizational and health sector approaches (e.g., shared accountability and cross-sectoral communication).

⁵ Studies that did not demonstrate reductions in ALC or delayed discharge days were excluded from the analytic overview.

References

- Age Cymru. (2018). *Factsheet 37w: Hospital discharge arrangements for older people in Wales*. Retrieved from <https://www.ageuk.org.uk/globalassets/age-cymru/documents/information-guides-and-factsheets/fs37w.pdf>
- Bate, A. (2014). *Delayed transfers of care in the NHS* (No. 7415).
- Bryan, K. (2010). Policies for reducing delayed discharge from hospital. *British Medical Bulletin*, 95(1), 33–46. Retrieved from <https://doi.org/10.1093/bmb/ldq020>
- Canadian Institute for Health Information (CIHI). (2009). *Analysis in Brief: Alternate Level of Care in Canada*. Ottawa, ON; CIHI. <https://secure.cihi.ca/estore/productFamily.htm?pf=PFC3264&lang=en&media=0>
- Canadian Institute for Health Information (CIHI). (2019). *Explore your health system [Website]*. <https://yourhealthsystem.cihi.ca/hsp/indepth?lang=en#/>
- Cancer Care Ontario. (2009). *Provincial Alternate Level of Care (ALC) Definition*. Retrieved from <https://archive.cancercare.on.ca/cms/One.aspx?portalId=1377&pageId=43214#def>
- Crisp, H. (2017). *Delivering a national approach to patient flow in Wales*. The Health Foundation.
- DDEG. (2012). *Delayed Discharge: Report of the Expert Group*. Retrieved from <https://www2.gov.scot/Resource/0039/00397908.pdf>
- Delayed transfers of care*. (2019, January 15). Retrieved from Nuffield Trust website: <https://www.nuffieldtrust.org.uk/resource/delayed-transfers-of-care>
- Department for Communities and Local Government, D. of H. (2017). *Integration and Better Care Fund planning requirements for 2017-19*. Retrieved from <https://www.england.nhs.uk/wp-content/uploads/2017/07/integration-better-care-fund-planning-requirements.pdf>
- DeRidder, R., Molodynski, A., Manning, C., McCusker, P., & Rugkåsa, J. (2016). Community treatment orders in the UK 5 years on: A repeat national survey of psychiatrists. *BJPsych Bulletin*, 40(3), 119–123. <https://doi.org/10.1192/pb.bp.115.050773>
- Fonarow, G. C. (2018). Unintended harm associated with the hospital readmissions reduction program. *Journal of the American Medical Association*, 320(24), 2539. <https://doi.org/10.1001/jama.2018.19325>
- Forder, J., Caiels, J., Harlock, J., Wistow, G., Malisaukaite, G., Peters, M., ... Jones, K. (2018). *A system-level evaluation of the Better Care Fund: Final Report*. Quality and Outcomes of Person-Centred Care Policy Research Unit. Retrieved from Quality and Outcomes of Person-Centred Care Policy Research Unit website <https://www.pssru.ac.uk/pub/5424.pdf>
- Gandr e, C., Gervais, J., Thillard, J., Mac e, J.-M., Roelandt, J.-L., & Chevreur, K. (2017a). The development of psychiatric services providing an alternative to full-time hospitalization is associated with shorter length of stay in French public psychiatry. *International Journal of Environmental Research and Public Health*, 14(3), 325. <https://doi.org/10.3390/ijerph14030325>

- Gandré, C., Gervais, J., Thillard, J., Macé, J.-M., Roelandt, J.-L., & Chevreul, K. (2017b). Involuntary Psychiatric admissions and development of psychiatric services as an alternative to full-time hospitalization in France. *Psychiatric Services, 68*(9), 923–930. <https://doi.org/10.1176/appi.ps.201600453>
- Gaughan, J., Gravelle, H., & Siciliani, L. (2017). Delayed Discharges and Hospital Type: Evidence from the English NHS: Delayed discharges and hospital type. *Fiscal Studies, 38*(3), 495–519. <https://doi.org/10.1111/j.1475-5890.2017.12141>
- Health at a Glance: Europe 2018. State of Health in the EU Cycle.* (2018). OECD Publishing. Retrieved from <https://www.oecd.org/health/health-at-a-glance-europe-23056088.htm>
- Hubbard, G., Huby, G., Wyke, S., & Themessl-Huber, M. (2004). Chapter 1: Introduction. In *Health and community care. A research review on tackling delayed discharge*. Scottish Executive Social Research. Retrieved from <https://www.webarchive.org.uk/wayback/archive/20180517010323/http://www.gov.scot/Publications/2004/10/20042/44602>
- Ignatyev, Y., Mundt, A. P., Peter, S., & Heinze, M. (2019). Hospital length of stay among older people treated with flexible and integrative psychiatric service models in Germany. *International Journal of Geriatric Psychiatry, 34*(11), 1557-1564. <https://doi.org/10.1002/gps.5165>
- Inverclyde Council. (2019, March 12). *What is a Single Shared Assessment?* Retrieved July 29, 2019 from Inverclyde Council website <https://www.inverclyde.gov.uk/health-and-social-care/adults-older-people/older-peoples-services/assessment-of-care/what-is-a-single-shared-assessment>
- Jha, A. K. (2018). To Fix the Hospital Readmissions Program, Prioritize What Matters. *Journal of the American Medical Association, 319*(5), 431. <https://doi.org/10.1001/jama.2017.21623>
- Johne, J., von Peter, S., Schwarz, J., Timm, J., Heinze, M., & Ignatyev, Y. (2018). Evaluation of new flexible and integrative psychiatric treatment models in Germany- assessment and preliminary validation of specific program components. *BMC Psychiatry, 18*(1). <https://doi.org/10.1186/s12888-018-1861-1>
- Johnson, J., Smith, G., Jp, M., Icu, Gc., & Wilkinson, A. (2015). *Factors that influence the decision-making of an interdisciplinary rehabilitation team when choosing a discharge destination for stroke survivors.* 37(2), 9. <https://www.ncbi.nlm.nih.gov/pubmed/26647491>
- Lawton-Smith, S. (2007). *Community-based compulsory treatment orders in Scotland: The early evidence.* King's Fund.
- Leguay, D., & Boyer, P. (2012). The organization of psychiatric care in France: Current aspects and future challenges. *International Review of Psychiatry, 24*(4), 363–368. <https://doi.org/10.3109/09540261.2012.703953>
- Maughan D, Molodynski A, Rugkåsa, & Burns T. (2014). A systematic review of the effect of community treatment orders on service use. *Soc Psychiatry Psychiatr Epidemiol, 49*, 651–63.

- Ministère des Solidarités et de la Cohésion Sociale, & Ministère du Travail, de L'Emploi et de la Santé. (2011). *Plan Psychiatrie and Sante Mentalé 2011-2015*. https://solidarites-sante.gouv.fr/IMG/pdf/Plan_Psychiatrie_et_Sante_Mentale_2011-2015.pdf
- Monitor. (2015, September). *Moving healthcare closer to home case studies: Enabling early discharge*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/459231/Case_study_collection_-_Enabling_early_discharge.pdf
- Moore, G., Hartley, P., & Romero-Ortuno, R. (2018). Health and social factors associated with a delayed discharge amongst inpatients in acute geriatric wards: A retrospective observational study: Frailty and delayed discharge. *Geriatrics & Gerontology International*, 18(4), 530–537. <https://doi.org/10.1111/ggi.13212>
- Morrison, A., & Canadian Agency for Drugs and Technologies in Health. (2009). *English-language restriction when conducting systematic review-based meta-analyses: Systematic review of published studies*. Canadian Agency for Drugs and Technologies in Health. Retrieved from <http://www.deslibris.ca/ID/217227>
- Mossé, P., Maury, C., Daumerie, N., & Roelandt, J.-L. (2013). Mental health in France, policies and actors: Developing administrative knowledge in a segmented world. *The International Journal of Health Planning and Management*, 28(3), e242–e255. <https://doi.org/10.1002/hpm.2158>
- NHS England. (2014). *Discharge to Assess: South Warwickshire NHS Foundation Trust*. Moving healthcare closer to home: Case studies. Retrieved from <https://www.nhs.uk/NHSEngland/keogh-review/Documents/quick-guides/background-docs/1-south-warwickshire-D2A-model.pdf>
- NHS England & Social Care England. *The Care and Support (Discharge of Hospital Patients) Regulations 2014*. 2823 § (2014).
- NHS Foundation Trust. (n.d.). *Sheffield Teaching Hospitals*. Retrieved from <https://www.sth.nhs.uk/>
- Oliver, D., Foot, C., & Humphries, R. (2014). *Making our health and care systems fit for an ageing population*. The King's Fund. Retrieved from https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/making-health-care-systems-fit-ageing-population-oliver-foot-humphries-mar14.pdf
- Osborne, S., Harrison, G., O'Malia, A., Barnett, A. G., Carter, H. E., & Graves, N. (2018). Cohort study of a specialist social worker intervention on hospital use for patients at risk of long stay. *BMJ Open*, 8(12), e023127. <https://doi.org/10.1136/bmjopen-2018-023127>
- Pletscher, M. (2016). Marginal revenue and length of stay in inpatient psychiatry. *The European Journal of Health Economics*, 17(7), 897–910. <https://doi.org/10.1007/s10198-015-0735-4>
- Scotland, & Scottish Executive. (2005). *The new Mental Health Act: A guide to compulsory treatment orders: information for service users and their carers*. Scottish Executive.
- Shin, J. Y., Yoon, S. J., Ahn, H. S., & Yun, Y. H. (2017). Effects of Per-diem payment on the duration of hospitalization and medical expenses according to the palliative care demonstration project in

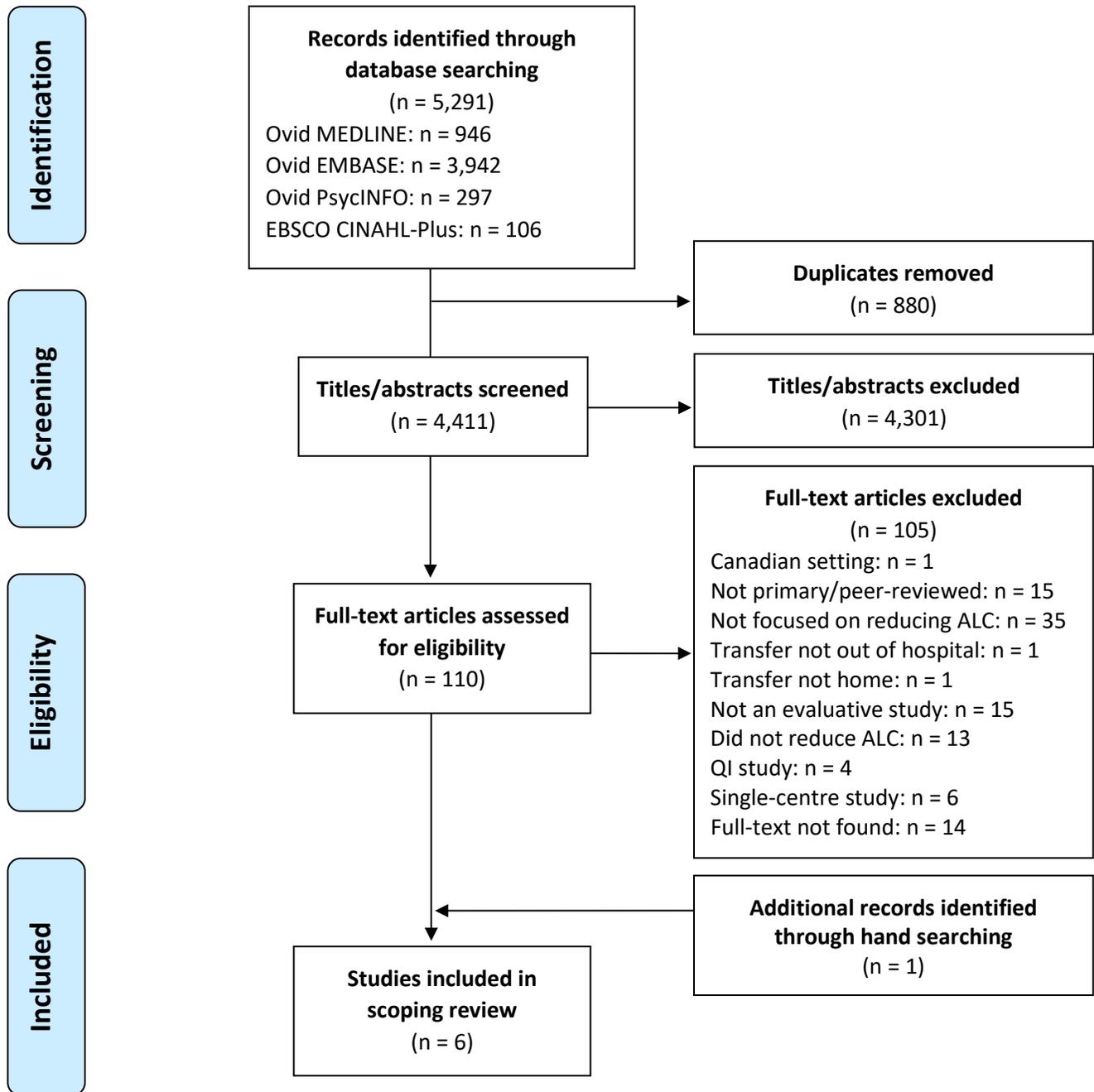
- Korea: Effects of Per-diem Payment. *The International Journal of Health Planning and Management*, 32(2), e206–e217. <https://doi.org/10.1002/hpm.2366>
- Smith, S. (2012, March 29). *QIPP Programme (Quality, Innovation, Productivity and Prevention)*. The Lancet UK Policy Matters. Retrieved from <http://ukpolicymatters.thelancet.com/qipp-programme-quality-innovation-productivity-and-prevention/>
- Swartz, M.S., Swanson, J.W., Wagner, H.R., Burns, B.J., Hiday, V.A., & Borum, R. (1999). Can involuntary outpatient commitment reduce hospital recidivism? Findings from a randomised trial with severely mentally ill individuals. *The American Journal of Psychiatry*, 156, 1968–1975.
- Taylor, M., Macpherson, M., Macleod, C., & Lyons, D. (2016). Community treatment orders and reduced time in hospital: A nationwide study, 2007–2012. *BJPsych Bulletin*, 40(3), 124–126. <https://doi.org/10.1192/pb.bp.115.051045>
- Taylor Salisbury, T., Killaspy, H., & King, M. (2016). An international comparison of the deinstitutionalisation of mental health care: Development and findings of the Mental Health Services Deinstitutionalisation Measure (MENDit). *BMC Psychiatry*, 16(1). <https://doi.org/10.1186/s12888-016-0762-4>
- Technical Advisory Group on Resource Allocation. (2008). *TAGRA paper on the history of Arbuthnott/NRAC* (No. TAGRA(2008)01; p. 6). NHS Scotland. Retrieved from <http://www.tagra.scot.nhs.uk/wp-content/uploads/docs/meeting%20papers/meeting1/TAGRA%20-%201st%20meeting%20-%2019%20August%202008%20%20Paper%20TAGRA%282008%2901%20-%20history5.doc>
- The Health Foundation. (2013). *Improving patient flow*. Retrieved from https://www.health.org.uk/sites/default/files/ImprovingPatientFlow_fullversion.pdf
- Turcotte, L. A., Perlman, C. M., Fries, B. E., & Hirdes, J. P. (2019). Clinical predictors of protracted length of stay in Ontario Complex Continuing Care hospitals. *BMC Health Services Research*, 19(1). <https://doi.org/10.1186/s12913-019-4024-2>
- Warwickshire County Council. (2014, February 21). *Discharge to Assess project update*. Warwickshire Health and Wellbeing. Retrieved from <http://hwb.warwickshire.gov.uk/2014/02/21/discharge-to-assess-project-update/>

Appendix A: Search Strategy

Database	Syntax	Results
Ovid MEDLINE (n = 946)	1. exp Patient Discharge/	27,345
	2. (alternat* level* adj2 care).mp.	74
	3. (bed* adj2 block*).mp	189
	4. exp "Length of Stay"/ or (delay* adj3 discharg*).mp	83,411
	5. ((prolong* or inappropriat* or extend* or protract* or nonmedical or non medical or non-medical or social) adj3 (stay* or hospital*)).mp	15,954
	6. ((community or home*) adj2 discharg*).mp	10,427
	7. (transition* adj5 (hospital* adj2 (community or home*))).mp	658
	8. ((step down or stepdown or step-down) adj2 care).mp	112
	9. exp Intermediate Care Facilities/	681
	10. (intermed* adj2 care).mp	2,135
	11. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10	126,805
	12. (legislat* or regulat* or polic* or law* or legal* or act).mp	3,008,998
	13. 11 and 12	7,003
	14. limit 13 to (English language and humans and yr="2016-Current")	946
Ovid EMBASE (n = 3,942)	1. exp hospital discharge/	113,953
	2. exp "length of stay"/	170,929
	3. (alternat* level* adj2 care).mp.	110
	4. (bed* adj2 block*).mp	291
	5. (delay* adj3 discharg*).mp	2,324
	6. ((prolong* or inappropriat* or extend* or protract* or nonmedical or non medical or non-medical or social) adj3 (stay* or hospital*)).mp	26,145
	7. ((community or home*) adj2 discharg*).mp	23,924
	8. (transition* adj5 (hospital* adj2 (community or home*))).mp	1,003
	9. ((step down or stepdown or step-down) adj2 care).mp	185
	10. (intermed* adj2 care).mp	2,674
	11. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10	307,084
	12. (legislat* or regulat* or polic* or law* or legal* or act).mp	3,672,027
	13. 11 and 12	14,604
	14. limit 13 to (human and English language and yr="2016-Current")	3,942
Ovid PsycINFO (n = 297)	1. exp hospital discharge/	3,149
	2. exp Treatment Duration/	8,730
	3. (alternat* level* adj2 care).mp.	18
	4. (bed* adj2 block*).mp	20
	5. (delay* adj3 discharg*).mp	153
	6. ((prolong* or inappropriat* or extend* or protract* or nonmedical or non medical or non-medical or social) adj3 (stay* or hospital*)).mp	2,577
	7. ((community or home*) adj2 discharg*).mp	1,107
	8. (transition* adj5 (hospital* adj2 (community or home*))).mp	269
	9. ((step down or stepdown or step-down) adj2 care).mp	34
	10. (intermed* adj2 care).mp	457
	11. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10	15,677
	12. (legislat* or regulat* or polic* or law* or legal* or act).mp	505,271
	13. 11 and 12	2,152
	14. limit 13 to (human and English language and yr="2016-Current")	297

<p>EBSCO CINAHL- Plus (n = 106)</p>	<p>S1. TI (((alternat* level* N2 care) or (bed* N2 block*) or (delay* N3 discharg*) or ((prolong* or inappropriat* or extend* or protract* or nonmedical or non medical or non-medical or social) N3 (stay* or hospital*)) or ((community or home*) N2 discharg*) or (transition* N5 (hospital* N2 (community or home*))) or ((step down or stepdown or step-down) N2 care) or (intermed* N2 care)) and (legislat* or regulat* or polic* or law* or legal* or act)) or AB (((alternat* level* N2 care) or (bed* N2 block*) or (delay* N3 discharg*) or ((prolong* or inappropriat* or extend* or protract* or nonmedical or non medical or non-medical or social) N3 (stay* or hospital*)) or ((community or home*) N2 discharg*) or (transition* N5 (hospital* N2 (community or home*))) or ((step down or stepdown or step-down) N2 care) or (intermed* N2 care)) and (legislat* or regulat* or polic* or law* or legal* or act))</p>	<p>912</p>
	<p>S2. Limiters - Published Date: 20160101-20190731; English Language; Exclude MEDLINE records; Human</p>	<p>106</p>

Appendix B: PRISMA Diagram



Abbreviations: ALC, alternate level of care; QI, quality improvement

Adapted from: Moher, D., Liberati, A., Tetzlaff, J., & Altman, D.G., The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Medicine* 6(7): e1000097. doi:10.1371/journal.pmed1000097

Appendix C: Summary of the Literature

Author, Year	Country	Target Population	Intervention, Comparison	Outcome(s)
Gandr�e et al., 2017	France	Full-time hospitalized mental health patients.	Alternative to full-time hospitalizations (AFTH) model for inpatients including ambulatory care, part-time hospital care, care that is integrated in the community, stays in therapeutic apartments, crisis centers, or rehabilitation centers.	Reduction in length-of-stay was significantly associated with greater degree of AFTH development ($\beta = -0.0034$, $SE = 0.0017$, $p\text{-value} = 0.0493$).
Ignatyev et al., 2019	Germany	Elderly individuals with mental health needs.	Psychiatric flexible and Integrative Treatment (FIT64b) models offered by hospital-based teams to patients with both acute and chronic conditions. Comparison: Centres providing mixed model of care (i.e., FIT64b alongside the traditional model of care).	Length-of-stay was shorter in centres exclusively providing FIT64b, compared to centres providing FIT64b alongside the traditional model of care: respectively, 3.2 (SD = 6.4) vs 8.4 (SD = 17.8) days, $p\text{-value} = 0.001$. Most effective among patients with schizophrenia spectrum disorders, mood disorders, and neurotic, stress-related, and somatoform disorders.
Osborne et al., 2018	Australia	Hospitalized medically stable patients with complex health and social needs.	Specialist social worker patient navigator and clinical case management database (Pathfinder) for identification and tracking of patients at risk of prolonged hospital stay. Comparison: Matched historical control that received care in the same settings before the intervention was implemented.	Average length-of-stay reduced by 33 days, with 9,999 bed days released over 12 months. Even after accounting for the upfront costs of implementation and operation of the new model, it was still shown to be cost-effective.
Pletscher, 2016	Switzerland	Hospitalized mental health patients.	Mixed reimbursement system (tariff payments consisted of a higher per diem rate for the first 5 days, a per-case payment on	A switch from per diem to per-case or a mixed reimbursement system significantly reduced length-of-stay, while the average revenue remained similar.

Author, Year	Country	Target Population	Intervention, Comparison	Outcome(s)
			day 6, and a lower per diem rate for subsequent days). Comparison: Single group, before and after implementation of mixed reimbursement system.	
Shin et al., 2017	South Korea	Cancer patients requiring palliative care.	Palliative Care Demonstration (PCD) demonstration project: per diem payment system (PDPS). Comparison: Traditional fee-for-service (FFS) hospitals.	Length-of-stay declined by 2.56% ($\beta = 0.026$; p-value = 0.0001) in PDPS hospitals, compared to FFS hospitals. Total medical costs declined by 0.76% ($\beta = 0.013$; p-value = 0.0001) in PDPS hospitals, compared to FFS hospitals.
Taylor et al., 2016	Scotland	Frequently hospitalized patients with mental health needs.	Community-based compulsory treatment orders (CTO). Comparison: Single group, before and after CTO implementation.	Average length-of-stay decreased from 66 days (before CTO) to 39 days (after CTO). Middle-aged patients and those with longer psychiatric history derived the most benefit from CTOs, in terms of shortened length-of-stay.

Commonly used acronyms: AFTH (Alternative to full-time hospitalizations); CTO (Community-based compulsory treatment order); FFS (fee-for-service); FIT64b (Flexible and integrative treatment model); PCD (Palliative Care Demonstration); PDPS (per diem payment system)

Appendix D: Summary of Jurisdictional Review

Table D1. United Kingdom: England

Healthcare Intervention	Intervention Features	Setting, Population	Associated Policies & Funding Sources	Outcome(s)	Practices to Achieve Outcomes
Discharge to Assess (D2A)					
<ul style="list-style-type: none"> - Provides funded support for people who do not require an acute hospital bed but still require care service - Support is short-term and may include home care services or care service in community setting - Provides simple rules (e.g. easy access to services, effective assessment of patient needs, formal networks of care that emphasis persons need rather than organizational boundaries etc.) that can work for different healthcare systems 					
Warwickshire Discharge to Access Program	<p>Program operates across all departments of the hospital¹)</p> <p>Care and rehabilitation support lasts up to 6 weeks¹</p> <p>Patients are discharged from hospital along three different pathways¹:</p> <ol style="list-style-type: none"> 1) To intermediate care and reablement services provided in their own homes 2) To residential care within the independent and community sector 3) To nursing care within the private sector 	Services across Warwickshire and acute services to South Warwickshire hospital ²	<p>Funded by Clinical Commissioning Group (CCG) and Hospital Trust¹</p> <p>Nursing home beds are commissioned by Warwickshire County Council (WCC) on behalf of the CCG³</p>	<p>2014 results show that 112 patients have benefited from Pathway 1 and 2 and 85 patients have been through pathway 3</p> <p>Pathway 1 (intermediate care and reablement services provided in patients own home) achieved 0.5m net long-term costs averted in Year 1 for¹</p> <p>Proportion of patients on Pathway 3 receiving CHC funds has fallen from 40% of eligible patients to 20% in a year²</p> <p>Improved A&E performance²</p>	<p>Trusted assessor model where a validated assessment is conducted between health and social care, in-house reablement and rehabilitation¹</p> <p>Care coordinators in place to help support patients and their families throughout discharge¹</p>

Healthcare Intervention	Intervention Features	Setting, Population	Associated Policies & Funding Sources	Outcome(s)	Practices to Achieve Outcomes
	Links with primary care, including two GP practices which have been commissioned to provide clinical input for 30 nursing home beds ¹			Shorter length-of-stay for emergency inpatient adults ² Shorter length-of-stay for people over 75 from fewer emergency visits and fewer patients affected by three ward moves ²	
Sheffield Discharge to Access Program	<p>Patients immediate needs are assessed by ward multi-disciplinary team¹</p> <p>On-going needs are assessed in community by an integrated health and social care team called 'Active Recovery'¹</p> <p>Micro-system service improvement approach has been used, starting with one patient per week and building up to 185 on average¹</p> <p>Staff are released to attend training and team meetings, referred to as 'Big Room' meeting¹</p> <p>Transfer of care form in place to ensure trusted assessor arrangement¹</p>	Across Sheffield hospital ¹	No additional funding ¹	<p>37% increase in patients who can be discharged on their day of admission or the following day¹</p> <p>Over 9,000 older people in hospital have been able to be discharged within the model⁴</p>	<p>Weekly multi-agency and multidisciplinary 'Big Room' meetings where leaders can contribute and share¹</p> <p>'Generic Assessment' model used after training sessions developed with Sheffield Hallam University¹</p> <p>Team of social workers, nurses, physiotherapists and occupational therapists assess people in their own home, a care home, a rehabilitation facility or a community hospital⁴</p>

Healthcare Intervention	Intervention Features	Setting, Population	Associated Policies & Funding Sources	Outcome(s)	Practices to Achieve Outcomes
Flow Cost Quality Program					
<ul style="list-style-type: none"> - Examine flow within hospitals and develop ways in which capacity can be better matched to demand; align availability of staff to patient flows - Program initially run by the Health Foundation - Emphasis on lean methodology and 'Big Room' approach - Opportunity to decrease length-of-stay for patients and improve outcomes 					
Flow Cost Quality program	<p>Program examined emergency care pathways as a means to improve quality, use capacity effectively, and produce cost savings⁵</p> <p>Redesigned hospital flows; matched availability of staff to patient flows and arrival times⁵</p>	South Warwickshire and Sheffield Teaching Hospitals in England ⁵	<p>In response to the Quality, Innovation, Productivity, Prevention (QIPP) policy agenda⁶</p> <p>Led by the Health Foundation⁵</p>	<p>Sheffield: admission rates for patients over 65 had fallen, bed occupancy reduced by 60 beds, in-hospital mortality fell by 15 per cent, with readmission rates stayed the same (6-month period)⁷</p> <p>South Warwickshire: reduced mortality rates, decreased length of acute stay from 7.7 to 6.2 days, and specifically for patients over 75, from 12.6 days to 9.5 days, without increases in readmission rates⁵</p>	<p>Lean methodology approach that provides a systematic approach to problem identification and project implementation⁵</p> <p>'Big Room' approach incorporating an interdisciplinary team⁵</p> <p>Changed work practices to enable real-time availability of practitioners and services⁵</p>

¹Department of Health, n.d.; ²Monitor, Government of UK, 2015; ³Warwickshire County Council, 2014; ⁴NHS Foundation Trust, n.d.; ⁵The Health Foundation, 2013; ⁶Smith, 2012; ⁷Oliver et al., 2014

Table D2. United Kingdom: Wales

Healthcare Intervention	Intervention Features	Setting, Population	Associated Policies & Funding Sources	Outcome(s)	Practices to Achieve Outcomes
1000 Lives Improvement Patient Flow Programme					
<ul style="list-style-type: none"> - Incorporates education initiatives consisting of workshops, seminars, online training and a defined 'action period' for application of learning into local patient flow improvement projects - Inspired by Flow Cost Quality approach - Part of nationwide initiative to improve flow management of patients approaching hospitals for unscheduled care 					
1000 Lives Improvement Patient Flow Programme	<p>Nationwide initiative to improve flow management of patients approaching hospitals for unscheduled care⁸</p> <p>Led workshops, seminars, and online training, followed by an 'action period' whereby local improvement projects were implemented⁸</p> <p>There were 45 projects, each focused on different parts of the patient pathway, from unscheduled admission to discharge⁸</p>	Six local health boards in Wales ⁸	<p>Supported by the Unscheduled Care Programme that worked to integrate health and social care in Wales⁸</p> <p>Designed and delivered by 1000 Lives Improvement (part of Public Health Wales) with activities overseen by the Unscheduled Care Steering Board⁸</p> <p>Evaluated by the Health Foundation⁸</p>	<p>There were some improvements in pharmacy processes, chemotherapy processes, discharge transport, mental health capacity assessments, reduced waits in the emergency department, and reduced length-of-stay in rehabilitation centres⁸</p> <p>Overall, projects performed below expectations⁸</p>	<p>Shortfalls included the limited timeframe, inadequate staff resources, and education activities that were not adapted for the local context⁸</p> <p>Improvements moving forward include more opportunities for shared learning, a focus on system-wide changes, stronger leadership, and access to IT and analytics support⁸</p>

⁸Crisp, 2017

Table D3. United Kingdom: Scotland

Healthcare Intervention	Intervention Features	Setting, Population	Associated Policies & Funding Sources	Outcome(s)	Practices to Achieve Outcomes
Delayed Discharge Action Plan					
- Issued in March 2002					
Delayed Discharge Action Plan	Whole system improvement capacity by <i>Joint Improvement Team</i> through creation of <i>JIT Action Group</i> (health and social care practitioners, managers, and information experts across Scotland) ⁹	Each partnership implemented a variety of initiatives aimed at reducing delayed discharge, including approaches in hospital settings and those in various community-based care services and support ⁹	£20M would be allocated to NHS Boards for Local Authority/NHS Partnerships ⁹	(i) target of reducing total number of delays by 1000 was achieved in less than 6 weeks from Action Plan issue date (March 2002), from 3116 to 2066 ⁹ (ii) target of reducing the number of patients delayed over 6 weeks by 20% by April 2006 was achieved with a 21.7% reduction ⁹ (iii) in October 2001, average delay of discharge was 153 days and 2162 patients were delayed for more than 6 weeks. In April 2011, average delay of discharge was reduced to 22 days and only 12 patients were delayed for more than 6 weeks ⁹	18 Joint Action Plan Partnerships in Scotland (15 local authority and Health Board Partnerships, 3 Grampian Partnerships) ¹⁰

⁹DDEG, 2012; ¹⁰Hubbard et al., 2004



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The North American Observatory on Health Systems and Policies (NAO) is a collaborative partnership of interested researchers, health organizations, and governments promoting evidence-informed health system policy decision-making. Due to the high degree of health system decentralization in the United States and Canada, the NAO is committed to focusing attention on comparing health systems and policies at the provincial and state level in federations.