

Rapid Review

Policy options for emergency department diversion

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Economics

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About

The North American Observatory on Health Systems and Policies (NAO) is a collaborative partnership of interested researchers, research organizations, governments, and health organizations promoting evidence-informed health system policy decision-making.

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List of Abbreviations

| | |
|------|--|
| ECAP | Emergency Care Access Point |
| ED | Emergency department |
| EMCC | Emergency Medical Coordination Centre (Denmark) |
| EMR | Electronic medical record |
| EMS | Emergency Medical Services |
| GP | General practitioner |
| LTC | Long-term care |
| LTCH | Long-term care homes |
| MTC | Maccabi Telecare Centre (Israel) |
| NHS | National Health Service |
| OECD | Organization for Economic Co-operation and Development |
| OOP | Out-of-pocket |
| PCCs | Primary Care Cooperatives |
| PCMH | Patient-Centred Medical Home |
| PCP | Primary Care Provider |
| PHN | Primary Health Network |
| UCC | Urgent Care Centre/Clinic/ Collaboration |
| UK | United Kingdom |
| USA | United States |
| WHO | World Health Organization |

Executive Summary

Emergency and urgent care systems in high-income countries face major challenges related to overcrowding, long wait times, and rising demand. Internationally, and across Canada, healthcare systems have experimented with various policies to promote access to health services for unplanned acute conditions while reducing avoidable visits to hospital emergency departments (EDs). By diverting urgent low-acuity cases from EDs to more appropriate venues of care, policymakers aim to improve the efficiency, effectiveness, access, and patient experiences. This rapid review presents an overview of selected ED diversion initiatives in seven selected jurisdictions, including six countries (Australia, Belgium, Denmark, Israel, the Netherlands, and England) and one Canadian province (Ontario).

Findings from the reviewed literature and discussions with local experts reveal a wide range of policy options for ED diversion implemented in different organizational and governance contexts. There are clear policy trends, including urgent care centres, the co-location of general practitioners at EDs, and remote triage via telecare. Policies are often introduced at the same time or form one of several overlapping initiatives, making it difficult to evaluate or disentangle the impact of one policy from another concurrent one. There is limited, and sometimes inconclusive, evidence of the effectiveness of these efforts in terms of ED diversion. Further research is needed to understand how, and in what ways, these initiatives have had an impact on ED presentation, and what their implications are for efficiency, effectiveness, access, cost reduction, and the patient and/or caregiver experience.

We offer four considerations for practitioners and policymakers involved in ED diversion reforms:

- 1. Expand access through robust primary care to enable ED diversion:** There are efforts to improve primary care services to alleviate pressures on EDs in all jurisdictions. Strengthening access to primary care may be a desirable strategy to encourage ED diversion.
- 2. Enhance appropriate care through service integration in innovative models of care:** In most jurisdictions, there are policy initiatives to encourage both the integration of primary and urgent care and the expansion of virtual services, as a mechanism for ED diversion. Policymakers considering such ED diversion strategies should note that the evidence of these measures to reduce ED visits and the potential to induce efficiency gains are limited and inconclusive.
- 3. Support organizational changes for closer coordination and collaboration among health professionals:** ED diversion reforms often require changes in the structure and organization of services and the work practices of health professionals. This entails a shift in pathways or care and service organization, alongside changes in the values and expectations among health care workers. Policymakers should consider the impact of such organizational changes on policy outcomes.
- 4. Enable role substitution, health workforce improvements, and changing advanced practice roles:** There is some evidence that growing demand for health services across the spectrum of primary to urgent and emergency care can be addressed through role substitution and advanced practice roles of health professionals (e.g., expanded roles for paramedics alongside mental health specialists for those requiring urgent care related to mental health crisis). Developing training programs and pathways for professional development for such roles may be a desirable policy option as an integral part of an ED diversion strategy.

Introduction & Background

Emergency departments (EDs) and urgent care systems in high-income countries face major challenges related to overcrowding, long wait times, and rising demand. Added to these organizational challenges are safety concerns. EDs are considered higher risk venues for those seeking care due to the potential for adverse events, such as medication errors due to the nature of their activity, which are characterized by rapid turnover, frequent transitions of care, constant interruptions, large variation in patient volumes, and unfamiliar patients (Farley et al., 2013; Pini et al., 2021). Additionally, the work environment of the ED presents unique challenges to infection control and prevention. The risk of cross infection in a busy ED is often a serious public health concern (Hertzberg et al., 2018; Liang et al., 2018).

Despite these risks, according to the findings of a 2021 survey among 11 high-income countries, adults in Canada were the third most likely (34%) to have sought care in an ED in the previous two years. Older adults in Canada were also the second most likely (54%) to have had difficulty receiving after-hours care without going to the ED. Finally, 10% of adults in Canada used the ED for non-urgent care in the past two years—the highest share among all countries surveyed (Doty et al., 2021). International systematic reviews encompassing health systems across the globe have reported that avoidable visits to EDs vary from 10% to 90% of all ED visits; the large variation possibly due to the lack of a single standardized definition of an "avoidable visit" (Morris et al., 2018). Up to 40% and 56% of all ED visits in the United Kingdom (UK) and Belgium respectively are considered to be potentially avoidable (Baier et al., 2019; Morris et al., 2018). In the United States (US), it is estimated that two-thirds of annual ED visits by privately insured individuals (18 out of 27 million visits) are avoidable, meaning these patients can be treated safely and effectively in primary care settings, thus saving US\$32 billion annually systemwide (UnitedHealth Group, 2019).

A systematic review of studies published between 2005 and 2019 found that the prevalence of avoidable ED visits in Canada ranged from 4.3% to 59.1% and were associated with younger age, low education, low income, rural residence, and worse self-rated health. Analysis of data from the *2015–2016 Canadian Community Health Survey* found that almost 40% of adults with a regular healthcare provider considered their last ED visit to be preventable (Lau, 2020). One in three ED visits among seniors who live in long-term care (LTC) institutions were identified as potentially preventable (24%) or classified as “low acuity” without a need for inpatient admission (10%) (CIHI, 2014).

Reducing pressures on EDs and providing better access to services and supports in the community are policy priorities across Canada. In Alberta, there have been a range of strategies introduced since the restructuring of the health system into a single health authority, Alberta Health Services, in 2008. For example, a provincial medical help line (Health Link) was set up alongside a wide range of strategies to reduce ED wait times (Krebs et al., 2017). Alberta has urgent care centres (UCCs) in both rural and urban locations to provide extended-hours access for unexpected but non-life-threatening health conditions

(Warkentin et al., 2020).¹ Despite these reforms, low-acuity and potentially avoidable ED visits persist as a major health policy issue.

Strategies to reduce barriers to primary care access in Alberta have been introduced with limited impact on ED presentation. These may have been hampered by an undersupply of family physicians (Krebs et al., 2017), for example, based on 2016 data, 30% of patients in Alberta used an ED for a condition that could have been treated by their usual physician had they been available (Warkentin et al., 2020). Additionally, already pressured EDs have witnessed considerable increases in the volume of visits during the COVID-19 pandemic (Alberta Medical Association, n.d.). According to 2016 data, against this backdrop, the government of Alberta launched its *Healthcare Action Plan* in November 2022: a comprehensive strategy consisting of programs that ensure rapid improvements in key areas of healthcare delivery, among them Emergency Medical Services (EMS). Improving EMS response times and decreasing ED wait times are two of the main targets of the provincial government (AHS, 2023).

There is widespread policy interest in improving pathways to health services for unplanned but acute conditions while reducing avoidable visits to hospital EDs (Boushy & Dubinsky, 1999; National Institute for Health and Care Excellence, 2018; Warkentin et al., 2020). There are a range of initiatives in practice that are designed to expand access to urgent and emergency care around the world. This rapid review draws on the literature and expert informants to explore international evidence about ED diversion initiatives that capture the range of policy options available. Broadly, we identify policy innovation exemplars for ED diversion that may hold promise for Canadian provinces and territories seeking policy options to expand access or address unmet needs for urgent and emergency care.

¹ Hours of operation of UCCs may vary by location. For example, according to the AHS website, East Edmonton Health Centre is open 17:00–22:30 Monday to Friday and 15:00–22:30 on Saturdays, Sundays, and statutory holidays. South Calgary Health Centre is open 08:00–20:00 every day of the week, and Airdrie Community Health Centre is open 24 hours seven days a week including statutory holidays. Please see:

<https://www.albertahealthservices.ca/findhealth/service.aspx?id=1003853> [accessed April 27, 2023].

Regular work hours of primary care physicians may also vary, usually spanning mornings to afternoons, for example, 09:00 to 14:00 or 17:00 and sometimes 18:00 (according to Alberta Find a Doctor website). Please see:

<https://albertafindadoctor.ca/> [accessed April 27, 2023].

Methods

An environmental scan was conducted between January and April 2023, consisting of a targeted and iterative search of peer-reviewed and grey literature in bibliographic databases and search engines (Google, Google Scholar, PubMed, ProQuest). Search terms were related to ED diversion, or its equivalents, in combination with concepts related to the case studies. Searches were limited to the selected jurisdictions – Australia, Belgium, Denmark, Israel, Netherlands, Ontario (Canada), and England – from January 2008 to April 2023. Sources included but were not limited to studies by the European Observatory on Health Systems and Policies, the Commonwealth Fund, government policy documents, health organization reports and websites, and databases of the Organisation for Economic Co-operation and Development (OECD) and the World Bank. **Appendix A** includes the detailed methodology, including search terms and the full inclusion and exclusion criteria.

To identify models of ED diversion that held promise and/or documented positive impacts in each of the selected countries (with the exception of Canada where the review of Ontario's Senior Campuses was our intended purpose), we captured studies describing each model across domains, such as overall impetus, facilitators, barriers, challenges, target population, and evidence of impact. We also extracted background information, such as demographic data and regulatory, financial, structural, or organizational attributes, to contextualize our understanding of the relevant health system and ED model.

We developed a case study template to structure the data and organize the findings while maintaining uniformity among the case studies. The template includes four sections (with the exception of Ontario): 1) a brief overview of the country's healthcare system; 2) the impetus for reform (i.e., the challenges to the emergency care system); 3) a summary of key measures of ED diversion; and 4) an overall assessment and lessons learned. The template supports our analysis by facilitating comparison across jurisdictions, specifically in identifying notable forms of ED diversion policies in each country, their aims, and evidence of their impact. We also draw on a framework by Tan and Mays (2014) to categorize ED diversion strategies into three broad types of initiatives: 1) new provision; 2) adaptation of conventional ED services; and 3) enhancement of existing services (Tan & Mays, 2014). The template and framework for analysis allows us to draw out overarching themes based on general observations that emerge from the case studies.

After the completion of a case study draft, we consulted 1–2 local expert informants from each of the seven jurisdictions to review and supplement the identified information. We validated our selection of policies that looked promising with the expert informants. The expert informants, including healthcare providers and academics, were invited to connect at their convenience via email, phone, teleconference, or videoconference (i.e., Zoom, Microsoft Teams).

We shared draft case study findings with local experts for review in advance. The research team discussed findings to identify important policy lessons and cross-cutting themes such as challenges and facilitators of ED diversion policy implementation, target populations, and the extent and quality of evidence of impact of these strategies and initiatives.

Limitations

This rapid review provides a snapshot of current ED diversion policies in seven jurisdictions. There are three limitations to this review. First, across cases there is a lack of evidence derived from robust,

empirical evaluation on ED diversion reforms. Research and evaluations are usually performed on an ad hoc basis, if at all, rather than systematically on a national level. Second, there are analytic limitations concerning our ability to compare across domains, such as healthcare resources and capacities, models of provider remuneration, and population and geographic size. Lastly, given the nature of rapid reviews, this research was conducted in a short timeframe, and findings are based on publicly available data from government documents, academic literature, and research evaluations in English (with several sources in Hebrew in the Israeli case).

Despite the limitations and the rapid nature of this review, a strength of this study is that we consulted healthcare experts to validate and expand on our findings. Further, this rapid review provides a high-level examination of trends in ED diversion across a sample of high-income countries to draw out some policy lessons for Canadian jurisdictions from a wide range of comparable contexts.

Analytic Overview

This rapid review presents high-level findings across a range of ED diversion policies in six high-income countries and one Canadian province (Ontario) to highlight trends and patterns in urgent and emergency care and to draw out potential lessons for provincial and territorial governments in Canada or similar federal health systems. We explore the implications of reforms over the last 15 years. The key findings and policy considerations from this review are summarized and discussed below. Detailed case summaries are found in **Appendix B**.

Challenges to urgent and emergency care

The countries examined in this rapid review are experimenting with policy measures to address a number of ED issues, including the growing demand for urgent care, patient volumes, complexity of medical cases, overcrowding and long wait times, disproportionately high utilization by an aging population, and increasing prevalence of non-communicable diseases and associated morbidity (Friesen et al., 2011; Kirkland et al., 2018; Kremers et al., 2019; Lin et al., 2015; Mason et al., 2014; Van den Heede & Van de Voorde, 2016). Drivers of ED use varies across age groups, with the youngest and oldest being higher users. Policy responses vary across our study cohort to address ED diversion.

There are common and growing challenges for countries with aging populations. The share of the older adult population (aged 65+) in the Netherlands is among the highest of OECD countries (The World Bank, 2022) and is projected to rise from 20% in 2021 to 23% in 2030, with an even sharper increase of those aged 80+ (The World Bank, 2022). An aging population is expected to increase demand for urgent and emergency care (Kremers et al., 2019). In Belgium, in 2021 adults aged 65+ made up about 19.5% of the total population, up from 14% in 1980 (OECD, 2023). Their share is projected to rise to 27% in 2050, which is expected to increase pressure on already overcrowded EDs nationwide (Morreel et al., 2020; OECD/European Observatory on Health Systems and Policies, 2019). To address the challenges of this demographic transition in England, policymakers have targeted urgent and emergency care system reforms by expanding access through the introduction of the Acute Frailty Network to develop care pathways alongside geriatricians and nurses for older or frail persons in existing acute settings (NHS Acute Frailty Network, 2022; Porath et al., 2017).

Pressures on EDs are also evident in countries with a much younger population structure. In Israel, for example, the elderly (65+) constitute just 12% of the population which is among the lowest in the OECD. Nevertheless, there is an average 4-hour waiting time and about 100% occupancy rate annually in EDs nationwide (OECD, 2022b). The Israeli healthcare system is characterized by a low amount of acute care hospital beds (around 2.2 beds per 1,000 population) and a high acute care hospital bed occupancy rate (above 90% annually) which creates "bottlenecks" in the transfer of patients from the ED to other hospital departments (OECD, 2022b; Weiss, 2020). Thus healthcare organizations have developed initiatives to alleviate pressures on EDs such as community-based UCCs and remote emergency medicine services (Clalit Health Services, 2023; Haklai et al., 2021; OECD, 2023; Zimmerman, 2013).

Workforce shortages and gaps in coverage can also contribute to demand on ED. In Australia, with the exception of 2019–2020, ED presentations have increased annually by 2.3% per year over the past five years (2019–2020 saw a decrease in ED presentations due, in part, to COVID-19 restrictions in ED care). In part due to ED care being accessible 24/7, utilization is on the rise due to long wait times to see a general

practitioner (GP), exacerbated by GP unavailability after-hours. Additionally, patients unable to pay out-of-pocket (OOP) for medical care also utilize EDs (Daniel, 2022; Mazza et al., 2018).

Non-urgent visits constitute a considerable share of ED presentations across cases. In Belgium, the proportion of non-urgent visits is 56% of total ED visits (Baier et al., 2019). Similarly, in Australia, a notable number of visits are avoidable: across all ED visits in 2021–2022, 45.3% were assigned as semi-urgent or non-urgent, and over one-third of ED patients had been treated outside a hospital by a primary care physician (Daniel, 2022; Mazza et al., 2018). Non-urgent cases place a heavy and potentially avoidable burden on emergency care systems; thus, motivating health systems to divert such cases from EDs to non-emergency settings. However, the implementation of diversion initiatives can be challenged by various factors, such as opposition from medical associations concerned about increased workload and loss of GPs' autonomy (Belgium), increased competition between providers (Australia), and a national shortage of GPs who constitute a central sector in the ED diversion efforts (Denmark) (Australian Medical Association, 2022; Nexøe, 2019; Van den Heede et al., 2017a). In Ontario, senior campuses face several barriers to achieving their full potential, including the fragmented nature of the provincial health system, healthcare human resource shortages and inequities, and the underfunding of health and social services (Morton-Chang et al., 2021; Williams & Morton-Chang, 2020).

These examples illustrate that demographic trends contribute to pressure on health systems and especially on EDs, and there are also organizational and supply side variables that contribute to the workload in these departments. The combination of population aging and limited access to primary care (e.g., in Australia) or high patient demand within acute care hospitals (e.g., Israel) highlights the range policy and organizational reforms in use across the urgent and emergency care settings in these jurisdictions. Although driven by similar underlying factors, ED diversion policies adopted by health systems in these cases are quite diverse. The variety of policy options shows that there is not one straightforward approach to address ED diversion. While some policies rely on technological innovations, such as remote triage and even remote treatment, others focused more on the reorganization of EDs, and some focused on the improvement and expansion of existing primary care services in community settings.

Types of ED diversion initiatives

We draw on a framework by Tan and Mays (2014) to categorize three broad types of initiatives: 1) new provision; 2) adaptation of conventional ED services; and 3) enhancement of existing services (**Table 1**).

TABLE 1. Categories of service provision

| Service provision model | Description |
|---|---|
| New provision | Introduction or scaling up of innovative methods of provision of urgent and emergency care that did not exist in that jurisdiction up to that point (e.g., community-based centres for urgent care, urgent treatment units, walk-in clinics, telehealth). |
| Adaptation of conventional ED services | Introduction of organizational and professional changes in existing services to adjust them to the evolving health needs and growing demand for care (e.g., co-location of GPs at EDs). |
| Enhancement of existing primary care services | Expansion or improvement of already existing services in a certain jurisdiction (e.g., after-hours primary care clinics) |

Source: (Tan & Mays, 2014)

New provision

New provision refers to the introduction or scaling up of innovative methods for the provision of urgent and emergency care. One such strategy is the introduction of community-based centres for urgent care that can include urgent treatment units, walk-in clinics, and other clinics designed for treating low-acuity patients (Baier et al., 2019; Georghiou & Keeble, 2019; Kirkland et al., 2018; Van den Heede & Van de Voorde, 2016). Another notable strategy is the development of remote consultation (telehealth) between patients and health professionals using technology such as telephones, virtual chat, or video-consultations where a health professional may advise the patient on further appropriate steps for treatment that will not require a visit to an ED (Chatterjee et al., 2021; Henderson et al., 2013; Van den Heede & Van de Voorde, 2016). Telehealth/remote health initiatives were found in Israel, Belgium, England and Ontario.

Table 2 showcases two select promising new provision initiatives in Denmark and Israel. Both focus on information technology that facilitate the use of sophisticated pre-hospital care and remote triage (in the Danish case), and remote care and monitoring (in the Israeli case). Extensive reliance on technology is a common element to the healthcare systems of these two countries in their ED diversion strategies.

Moreover, technological collaborations are reported between the two countries where high-tech Israeli companies support technological solutions for the evolving Danish emergency care system (H. C. Christensen, personal communication, March 28, 2023).

TABLE 2. New provision: Summary of promising initiatives in Denmark and Israel

| Initiative | Year of initiation | Description | Evaluation |
|---|--------------------|--|---|
| Denmark: Integration of primary and urgent care (the “Copenhagen model”) | 2014 | <p>Helpline for any non-emergency acute primary care condition directing patients to appropriate care providers, including home visits, ambulance dispatches, and out-of-hours clinics located within hospitals of the Capital Region (Fløjstrup et al., 2020; Frischknecht Christensen et al., 2016; Zinger et al., 2022).</p> <p>Calls to the emergency line concerning acute health problems are directed to a regional Emergency Medical Coordination Centre (EMCC) where physicians and nurses triage patients to one of five urgency levels (Frischknecht Christensen et al., 2016; Søvsø et al., 2020).</p> | <ul style="list-style-type: none"> • ED referrals dropped by 10% (2014–2019) and sharp decline in ED wait times (Berlac, n.d.). • 73% callers satisfied with the service (Zinger et al., 2019). • A shift of emergency dispatches away from non-urgent toward urgent emergency care (Zinger et al., 2022). • Overall minor change in the cost of helpline reform in the first years and an increase in the following years (Zinger et al., 2022). |
| Israel: Home-based telecare centre | 2012 | Aims to provide 24/7 proactive health services to older patients with chronic morbidity. Each patient is assigned a personal nurse who proactively conducts medical monitoring to prevent complications (Porath et al., 2017). | <ul style="list-style-type: none"> • Study results on frail older patients with complex chronic conditions show significant reduction in ED visits, hospitalization days, and hospitalization costs (Porath et al., 2017). |

Impact on ED use and wait times. Both models were associated with a reduction in ED visits. In Denmark, ED referrals in the Capital Region (the most urban area of Denmark) dropped by 10% between 2014–2019 and ED wait times, from arrival to start of treatment, declined sharply from 68–80 minutes to 9–11 minutes for urgent cases and to 27 minutes in non-urgent cases (Berlac, n.d.). These findings are consistent with another Danish study that suggests a shift in emergency dispatches from non-urgent toward urgent emergency care reflects the impact of a multi-component reform that involves a regional helpline, ambulance dispatches, out-of-hours clinics, home visits, etc. (Zinger et al., 2022). In Israel, a difference-in-difference study showed a statistically significant reduction in ED visits among frail older patients who received care through a proactive telecare centre compared to the control group (Porath et al., 2017).

Impact on costs. There is limited evidence on the cost impacts of these ED diversion policies. In Denmark, a minor change in the cost of the helpline reform of the Capital Region emergency care system was found in the first two years after the implementation of the reform in 2014 (Zinger et al., 2022). A cost increase of 10%, adjusted for inflation per 1,000 residents in 2015, was followed by an 8% decrease in 2016, thus returning to its starting level of about €64,000 per 1,000 residents. However, there was a cost increase of 15% in the following years of up to €73,750 per 1,000 residents in 2019. It appears that the cost increase was caused, in large part, by hiring more human resources to take on more calls and reduce wait times simultaneously (Zinger et al., 2022). In Israel, in addition to a reduction of ED visits, provision of proactive telecare to frail older patients with complex chronic conditions has shown significant reduction in hospitalization days and hospitalization costs (Porath et al., 2017).

Impact on patient and caregiver satisfaction. In Denmark, a retrospective cohort study found that 73% of the callers to the Copenhagen EMS medical helpline were satisfied with the service (Zinger et al., 2019).

Adaptation of conventional services

The second type of model, adaptation of conventional services, refers to the introduction of organizational and professional changes to existing services to meet the evolving health needs and growing demand for care (e.g., co-location of GPs at EDs). Co-location is an ED diversion approach that relies on the integration of primary care and emergency services. Primary care services co-located with an ED is an initiative aiming to reduce the burden on EDs of patients attending with non-urgent problems (i.e., GPs staffed in EDs). In the co-location model, both services—General Practice and ED—allow a joint entrance to care with a common triage to determine the appropriate care level following algorithms and protocols. Both services act independently but retain a certain degree of mutual consultation and referral (Baier et al., 2019; Schoenmakers et al., 2021).

The Belgian, Dutch, and English cases (**Table 3**) present strategies that rely on the adaptation of existing ED services through the integration of primary care and emergency care capacities to support appropriate ED triage within hospital settings. This change occurs at both the organizational and professional level, requiring closer and more coordinated work between health professionals such as nurses, GPs, and emergency medicine specialists.

TABLE 3. Adaption of conventional ED services: Summary of promising initiatives in Belgium, the Netherlands, and England

| Initiative | Year of initiation | Description | Evaluation |
|---|--------------------|---|--|
| Belgium: Co-location of GPs with EDs | 2016 | Aims to reduce the burden on EDs of patients attending with non-urgent problems. A triage is performed to determine the appropriate care level (GP or ED) following algorithms and protocols (Schoenmakers et al., 2021; Van den Heede & Van de Voorde, 2016). | Doctors and patients alike express satisfaction with this new mode of operation. The major perceived advantage by respondents was a more adequate referral of patients (Schoenmakers et al., 2021). |
| Netherlands: Emergency Care Access Points (ECAPs) | N/A ¹ | Primary Care Cooperatives (PCCs) collaborate with EDs and are located near or within hospitals. At these shared sites, known as ECAPs, primary care providers (PCPs) generally are responsible for the triage and treatment of self-referrals, who otherwise would arrive directly to the ED (van Gils-van Rooij et al., 2015; Thijssen et al., 2013; Thijssen et al., 2016; Wackers et al., 2023). | Mixed results: While some studies found that ECAPs lead to a significant reduction of ED visits as well as optimization of their use, there is evidence that ECAPs are associated with significant increases in hospital admissions and total costs without reducing ED visits compared to stand-alone primary care sites (Kremers et al., 2019; Smits et al., 2017; Thijssen et al., 2013, 2016; Wackers et al., 2023). |
| England: Acute Frailty Networks | 2016 | Aims to improve care in hospital for frail older people through multiple locally designed initiatives around the | In one hospital, the data suggests that the OPAL team spends more time with patients, which reduces length of stay |

country. One case study from South London involves the introduction of an Older Person's Advice and Liaison (OPAL) team in 2016 comprising a physician, two physiotherapists, and two nurses. The OPAL team promotes clinical frailty scoring (alongside ED nurses and paramedics) and co-location of the frailty service near the ED entrance to review patients before admission (NHS Acute Frailty Network, 2022).

for frail patients and decreases readmissions (NHS Acute Frailty Network, 2022).

¹N/A not available; this is a gradually evolving model.

Impact on ED visits and wait times. Evidence of impact on ED use was mixed across and within these two cases. In the Netherlands findings were mixed: a 2013 before-and-after study in one urban location found that the reorganization of the ED as an ECAP resulted in a 13% decrease in ED use overall, and the near absence of self-referring patients at the ED after hours (Thijssen et al., 2013). A 2015 observational study that compared “regular” after-hours GPs and Urgent Care Collaborations (UCCs) with EDs found that the proportion of ED patients was 22% smaller in UCCs compared to regular GPs. When controlled for patient- and health-problem characteristics, the difference remained statistically significant (van Gils-van Rooij et al., 2015). However, a 2016 study found no difference in ED length of stay between regular EDs and ECAPs (Thijssen et al., 2016). Finally, Wackers et al. (2023) did not find association between ECAPs and ED utilization compared to stand-alone primary care facilities adjusted for sex, age, and number of comorbidities.

In England, data from a single intervention at one hospital suggested that an older person's liaison team reduced length of stay for frail patients, and there was a decrease in readmissions (NHS Acute Frailty Network, 2022).

Impact on costs. In the Netherlands, a 2015 study that explored differences in patient characteristics, presented complaints, and ED discharge diagnoses between EDs with and without an ECAP found patients at ECAP EDs were older, medical professionals referred more patients, and more patients received a hospital admission. This suggests that increased collaboration between after-hours primary and emergency care providers may optimize ED use while diverting minor cases to primary care settings (Smits et al., 2017; Thijssen et al., 2015). On the other hand, the authors noted that the number of referred patients increased, resulting in more diagnostic tests performed and an increased likelihood of patient admittance. This called into question the actual reduction in healthcare costs (Thijssen et al., 2015). A more recent study found that ECAPs were associated with significant increases in hospital admissions and total costs, concluding that “these collaborations do not seem to improve health systems’ financial sustainability” (Wackers et al., 2023, p. 15).

Impact on patient and caregiver satisfaction. In Belgium, about 83% of the patients, 74% of GPs, and 95% of emergency physicians favoured co-location of GPs at EDs. The major advantage perceived by respondents was a more adequate referral of patients. Moreover, 79% of the GPs and 83% of the emergency physicians believed that co-location would lower the workload and waiting time and increase care quality (Schoenmakers et al., 2021).

Enhancement of existing care services

Table 4 summarizes the Australian and Canadian (Ontario) cases that represent enhancement approaches, where existing services are expanded or improved to meet increasing demand. In the Australian case, Primary Health Networks (PHNs) aim to enhance primary care delivery and UCCs, while in Ontario, senior campuses aim to respond to the older population's health and social needs and promote their quality of life. Both cases are based primarily on better coordination and integration of a range of health and social care services.

TABLE 4. Enhancement of existing care services and UCCs: Summary of initiatives in Australia and Ontario

| Initiative | Year of initiation | Description | Evaluation |
|---|--------------------|--|--|
| Australia: Primary Health Networks (PHNs) | 2015 | Independent organizations designed to improve medical services for patients at risk for poor health outcomes and to improve the links between local health services and hospitals. PHNs commission healthcare providers to meet region-based needs, including after-hours services. As of 2023, they also partner with the federal government to fund and administer Urgent Care Clinics (UCCs) ¹ as a model of care intended to reduce pressure on hospital EDs (HealthDirect, 2020). | In 2019–2020, a slight increase in lower-urgency ED presentation across PHN regions was observed for in-hour care. By contrast, after-hour presentations decreased since 2018–2019 (Australian Government Department of Health and Aged Care, 2022). |
| Ontario: Senior Campuses | N/A ² | Aims to respond to the older population's health and social needs, enhance their quality of life, and reduce utilization of health services through integrated provision of health and social services in a defined geographic location (Morton-Chang et al., 2021; Williams & Morton-Chang, 2020). | Limited published evaluations. Expert opinion: Anecdotal cases where integrated care provided in campuses often delayed or prevented visits to hospital EDs or placements in LTCH in comparison to an equivalent person in the community not receiving this type of access to care (F. Morton-Chang, personal communication, March 27, 2023). Currently, the main priorities are to increase the number of campuses in Ontario, improve the integration of services within them, and make campuses more accessible to the adult population (Morton-Chang et al., 2021; Williams & Morton-Chang, 2020). |

¹ Also referred to as "Urgent Care Centres" and "Urgent Care Collaborations."

²N/A not available; this is a gradually evolving model.

Impact. There has been limited evaluation of the selected models. For example, we were not able to find any studies examining the impact of UCCs in Australia, which are in the early stages of implementation. However, there were some reductions in lower-urgency ED presentation in 2019–2020 that the government attributed to the PHNs (Australian Government Department of Health and Aged Care, 2022).

In the case of Ontario, although reducing ED visits is not a primary goal of senior campuses, there is anecdotal evidence that integrated care provided in campuses often delayed or prevented visits to hospital EDs or placements in LTCH (F. Morton-Chang, personal communication, March 27, 2023).

Conclusions

Findings from the literature and consultations with local experts reveal that a variety of ED diversion policies have been adopted and implemented across healthcare systems. Their diversity is manifested in a range of features and characteristics, such as the type of initiative (new, adaptive, and additional provision), level of implementation (local, regional, and national/provisional), target population, and extent of evidence. Contextual factors are important and impact the level of implementation of policies; for example, ED diversion schemes can be local (Israel, England's ambulatory avoidance scheme), regional (Denmark, Ontario), and/or jurisdictional (Belgium, England's telephone and virtual triage service).

Three notable commonalities from the seven case studies emerge through this rapid review. First, healthcare systems tend to adopt and implement multiple measures at the same time. No case study represents a standalone policy but rather constitutes part of a continuous effort of multiple initiatives to reduce ED visits by diverting low-acuity cases to non-emergency services. Second, in all cases, the importance of collaboration and cooperation between major players in the health system to implement effective ED diversion policy is clear. For example, the Belgian case illustrates the need to reach agreements with physician associations to overcome political and economic differences between stakeholders to implement the co-location initiative. Third, there is limited and sometimes mixed evidence of the effectiveness of these policies. More research is needed to understand how these initiatives have contributed to alleviating pressures on hospital EDs by diverting low-acuity cases to non-emergency services.

We offer four considerations for system managers and policymakers involved in ED diversion reforms:

1. Expand access through robust primary care to enable ED diversion

There are efforts to improve primary care access to alleviate pressures on EDs in all jurisdictions. A common approach to expand access is through the introduction, or expansion, of walk-in clinics, UCCs or Minor Injuries Units, after-hours primary care centres, and/or home-based care. For example, free-standing UCCs are being used in Australia and Israel to reduce pressure on hospital EDs. In the Netherlands, PCCs allow primary care physicians to provide emergency services after hours.

2. Enhance appropriate care through service integration in innovative models of care

In most jurisdictions, there are policy initiatives to encourage the integration of primary and urgent care and the expansion of virtual services as a mechanism to encourage ED diversion. For example, integration of primary and urgent care is enabled by the co-location of GPs in hospital EDs in Belgium and the Netherlands to allow for a single point of entry through joint triage. This is consistent with policy pilots in England as part of a wide set of reforms for integrated care (the NHS Vanguard) to develop new care models of urgent and emergency care to improve the coordination of services and pressure on emergency services. Several jurisdictions leverage virtual care models (i.e., telehealth or an internet-based triage service) to offer a single point of entry to primary, urgent or emergency care services through integrated triage protocols. For example, in Belgium, Denmark, and England, remote triage can occur through national and regional helplines to help determine the appropriate level of care for patients who are seeking access.

3. Support organizational changes for closer coordination and collaboration among health professionals

ED diversion reforms often require changes in the structure and organization of services and in the work practices of health professionals. Closer coordination and collaboration between and among health professionals, who otherwise have high levels of autonomy and authority in their roles, are common features in ED diversion reforms, particularly those based on consolidation of services.

A notable example is the Belgian and Dutch co-location models where triage nurses refer patients to either GPs or EDs who work independently but retain a certain degree of mutual consultation and referral. In Belgium, remote triage required joint expert work on integrated protocols of general practice and emergency medicine. In Denmark, physicians and nurses triage patients to one of five levels of urgency in newly established EMCCs in each region.

Closer coordination and collaboration entail not only a shift in pathways or care and service organization but also in the set of values and expectations of professionals; for example, adaptation to vast technological changes and trust in other professionals such as nurses and paramedics with advanced skills. Also, concerns may rise in respect to erosion of professional status, as seen in the Belgian case of GPs who initially opposed the co-location reform fearing loss of autonomy and hospital-centrism. This is a challenge that can be overcome by taking the path of negotiation and agreement between stakeholders including health professionals to reach a solution acceptable to all parties, as in the Belgian case.

4. Enable role substitution, health workforce improvements, and changing advanced practice roles

There are several innovative interventions to address the growing demand for health services through role substitution and advanced practice roles. As seen in the case studies:

- In Belgium, paramedics serve as operators alongside physicians and nurses in a nationwide urgent helpline system designed to direct the caller to the appropriate level of care.
- In England, there are efforts to introduce new service routes to reduce ED attendance by having a patient treated in a community setting or at home by paramedics and ambulance clinicians. This intervention is targeted at individuals whose needs might best be met in this way, such as those in LTC homes who have fallen or those experiencing a mental health crisis. In the case of mental health care, interventions include collaboration among other health care actors, such as mental health professionals or occupational therapists, alongside the use of paramedics with extended skills.
- In Denmark, all regions have undertaken efforts to improve the capacity of pre-hospital care by installing advanced telemedicine in ambulances and upgrading the training of paramedics.
- In Israel, advanced practice nurses and physician assistants, many of them paramedics who acquired additional medical training, are integrated gradually into UCCs and hospital EDs.

Challenges pertaining to administrative cultures, bureaucratic barriers, and opposition from the medical profession often hinder the development of innovative advanced practice roles and role substitution in health systems (Levi & Zehavi, 2017). However, the organizational and professional changes involved in the implementation of ED diversion policies are expected to drive the need further for such practices globally. Therefore, developing training programs and pathways for professional development for such roles may be a desirable policy option as an integral part of an ED diversion strategy.

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Appendix A. Detailed Methodology

TABLE A1. Search terms (scope)

| Topic | Scope | Setting |
|--|---|---|
| Emergency department diversion | Policy options Reforms / Initiatives Urgent care | Australia Belgium Canada (Ontario) |
| Reduction of emergency department visits | Primary care provider Senior campus Co-location Mobile applications Avoidable ED visits | Denmark Israel England Netherlands |

TABLE A2. Inclusion and exclusion criteria

| Inclusion | Exclusion |
|--|---|
| <ul style="list-style-type: none"> - Academic and grey literature - English and Hebrew languages - Focus on emergency department diversion - 2008 or later - Jurisdictions included in Table A1 | <ul style="list-style-type: none"> - Before 2008 |

TABLE A3. Summary of expert consultations

| Jurisdiction | Number of experts approached | Number of experts that replied | Ways of feedback delivery |
|--------------|------------------------------|--------------------------------|---|
| Australia | 3 | 1 | Email correspondence |
| Belgium | 3 | 1 | Email correspondence |
| Denmark | 3 | 2 | Email correspondence and Zoom interview |
| Israel | 1 | 1 | Email correspondence |
| Netherlands | 3 | 1 | Email correspondence |
| Ontario | 1 | 1 | Email correspondence and interview |
| England | 1 | 1 | Email correspondence |

Appendix B. Case Summaries

Australia

Brief healthcare system overview

Australia, a federation comprising six states and two territories, has a national health services (NHS) health system. Its states and territories (S/Ts) administer a universal public health insurance program (Medicare Benefits Scheme [MBS] or “Medicare”) that qualifies Australian citizens (automatically enrolled) for free inpatient and outpatient public hospital care (including emergency care) and for substantial coverage for physician services and pharmaceuticals through the Pharmaceutical Benefits Scheme (PBS) (Tikkanen et al., 2020). Residents with permanent visas and New Zealand citizens also qualify but are not automatically enrolled. The federal government has a limited role in direct service delivery. S/Ts both own and manage service delivery for hospital care, ambulances, public dental care, community health (primary and preventive care), and mental health care (Dixit & Sambasivan, 2018; Tikkanen et al., 2020).

Medicare is financed through general taxation and a supplemental federally administered government levy representing up to 2% of taxable income (with some exemptions) (Service Australia, 2020). S/Ts contribute additional healthcare funding. Australians may opt to purchase private, supplemental insurance to pay for services not covered under MBS, including private hospital and dental care and drugs not covered through PBS. For the 50% of Australians who have private insurance, the federal government pays a rebate toward insurance premiums and imposes a tax penalty on high-income households who do not purchase private insurance.

Due to lags in data reporting, the most recent estimates of health expenditure are from 2019–2020, during which health spending accounted for 10.2% of GDP (gross domestic product). This is a 0.2% increase from 2018–2019. Of total health expenditure, 70.4% was government-funded (60.6% coming from the federal government and the rest contributed by S/T governments). Of total health expenditure, 29.6% came from non-government sources, primarily OOP by individuals which accounted for almost 50% of non-government health expenditure. Additional sources of non-government sources include private and injury compensations insurers (27.8%). Among all health spending, 41.2% was spent on hospitals (a 2.9% increase from 2018–2019 due to COVID-19 preparation), and 33.1% on primary health care (Australian Institute of Health and Welfare [AIHW], 2022).

Impetus for reform: challenges to the emergency care system

EDs in Australia treat patients in need of urgent or life-threatening acute medical or surgical care. EDs are largely located in, and operated by, public hospitals. As a result, ED care is covered by MBS, making it a common care pathway (HealthDirect, 2022).

In 2021–2022, there were 8.8 million ED presentations (visits) across Australia, representing a rate of 339 out of 1,000 people (AIHW, 2020). Excluding 2019–2020, ED presentations have increased by 2.3% per year over the past five years, the greatest increase being in public acute hospitals. Notably, 2019–2020 saw a decrease in ED presentations partly due to COVID-19 restrictions in ED care, alternative modes of health service delivery (e.g., telehealth funded through MBS), and specific fever clinics for COVID-19 (AIHW, 2020).

In part due to ED care being accessible 24/7, utilization is on the rise due to long wait times to see a GP, exacerbated by a limited number of clinics that provide after-hours care. Additionally, patients unable to pay OOP for medical care also use EDs. A notable number of visits were avoidable. Across all ED visits in 2021–2022, only 15% were assigned as emergency, 38% were assigned as urgent, and 45.3% were assigned as semi-urgent or non-urgent. Further, over one-third of ED patients in 2020–2021 could have been treated outside a hospital by a primary care GP (Mazza et al., 2018), representing 36% of all ED visits nationally last year (increase of 14% the previous year). It is estimated that avoidable ED visits cost the health system approximately AUD\$540 per patient (Daniel, 2022).

A number of patterns have been observed in ED visits. Based on 2021–2022 data, while male and female presentation is roughly equal (49%:51%), differences exist when age is considered. Across age groups between 15–44 and 85+, most presentations were among females; in age groups under 15, more presentations were among males; and in age groups between 45 and 84, presentations were evenly split between males and females. Although 46% of all ED presentations were among people aged between 25 and 64, among both males and females, those 85+ represent the highest presentation rate per 1,000 population (873 for males and 712 for females), followed by those under 4 (649 for males and 548 for females). However, overall growth in terms of ED presentations and amount of hours someone spends in ED is concentrated among working-age populations (25–64), suggesting population aging is not driving demand for ED services (AIHW, 2020).

Beyond age and gender, there are other determinants of ED utilization. Importantly, 7.7% of ED presentations were among Indigenous Australians. When age is considered, the starkest difference between Indigenous and non-Indigenous Australians (per 1,000 people) is among those aged 35–39 (967:279). Further, city dwellers, who make up 72% of the Australian population, account for most 63% of ED presentations, while those living in remote areas, who make up 2% of the population, account for 3.4% of presentations. Lastly, socioeconomic status is an important determinant of ED presentation: those with low (but not lowest) SES accounting for 23% of ED presentations (340/1,000), and those with the highest SES accounting for 15% of all ED presentations (250/1,000) (AIHW, 2020).

Overall, 28% of all presentations to ED ended in hospital admission. However, likelihood to be admitted to hospital increases significantly with age, with 64% of patients aged 85+ admitted. Wait times are increasing, exceeding previous years' median waiting time. In 2021–2022, 90% of patients were seen in 1 hour and 57 minutes, which is higher than years prior (ranging from 1 hour and 32 minutes to 1 hour and 42 minutes) (AIHW, 2020).

Summary of key measures of ED diversion

Factors driving avoidable ED utilization include GP wait times and the cost of private health care. These can be measured by rates of non-urgent care in ED, the presentation of “GP-like” symptoms, and an increase in after-hours visits among those of working age. To address avoidable ED presentation, the Royal Australian College of General Practitioners has called for more funding for GPs, including a \$200 AUD Medicare item for long or complex cases and an increase in fees for those patients who can afford to pay (Daniel, 2022). The federal and S/T governments of Australia have made significant investment in recent years to divert avoidable ED visits. Efforts thus far have focused largely on reforms in ED delivery as well as primary care. The following section summarizes four noteworthy strategies, which is followed by future directions.

National Emergency Access Target: To reduce rates of avoidable ED utilization, the Australian Government previously implemented strategies targeting ED demand. In 2011, the National Emergency Access Target (NEAT) was introduced that aimed to increase the proportion of patients admitted, referred, or transferred elsewhere or discharged home within 4 hours of arrival at ED. This target does not overrule clinicians' discretion in keeping patients in the ED for more than 4 hours if deemed clinically appropriate. Initially, S/T governments received financial incentives from the federal government when ED targets were achieved, but these payments ceased in 2014. NEAT has since been renamed Emergency Treatment Performance (ETP) as of 2015. Time-based targets coupled with sanctions (publicly naming hospitals that did not meet targets) resulted in discharge targets being met, thereby improving ED patient wait times and decreasing “access block” (the inability of ED patients to access inpatient care due to lack of available inpatient beds). However, recent evidence suggests the gaming of length of stay metrics (e.g., reporting discharge based on “readiness for departure” and not when the patient physically leaves the ED) may have unfairly contributed to performance improvements (Hession et al., 2019).

While the four-hour target is no longer an explicit goal of ETP, S/Ts remain committed to ensuring that approximately a minimum percentage of all patients (e.g., 81% in New South Wales) presenting to a public hospital ED will be admitted, referred elsewhere, or discharged home within 4 hours (Emergency Care Institute, 2016). Overall, performance continues to vary across hospitals, with small hospitals better able to improve performance after the introduction of this reform (Prang et al., 2018).

Patient-Centred Medical Home (PCMH): Other efforts diverting avoidable ED visits focus on primary care reform to keep people out of hospitals. One such intervention is the PCMH (2017), which was a pilot model (June 2016–June 2021) developed in response to the prevalence of chronic disease, an increase in health costs, and an aging population. PCMHs involve the restructuring of primary care practices into “Health Care Homes.” PCMHs emphasize comprehensive physical and mental health care, focusing on prevention and wellness in addition to acute and chronic care. Care is patient-centred, highly coordinated, and provided by multidisciplinary health care teams. When large teams are not possible, smaller medical home practices build virtual teams to link themselves and their patients to providers and services in their communities. To that end, PCMHs leverage the communication and connection potential of information technology (Agency for Clinical Innovation, 2022; Metusela et al., 2017). Although PCMHs have been shown to be effective in reducing ED visits and overall health-related costs (Mazza et al., 2018; Metusela et al., 2021), the pilot was met with low GP participation as the program was not financially viable for GPs (Pearse et al., 2022; True et al., 2022).

Nurse-led clinics: Independent nurse-led clinics are facilities led by nurses and operated in the community. While not widespread across Australia, there are roughly 100 that operate. These clinics are external to primary care general practices, and nurses in these clinics have their own patient caseload and deliver treatment for illnesses and injuries within their scope of practice. These clinics do not require an appointment or referral, and often operate with extended hours (RACGP, 2015). Nurse practitioner-led clinics have also been piloted, particularly in rural regions of Victoria, Australia, as an attempt to divert after-hour ED presentation, especially in the absence of GPs. While qualitative studies suggest a nurse-led clinic model is valuable and could reduce the burden of after-hour duties for rural GPs (Wilson et al., 2021), such a model has been found to not help with ED wait times and is, in fact, an expensive and inefficient model of care that appears to push patients to either EDs or general practices (Tsirtsakis, 2020).

Primary Health Networks (PHNs): The federal government has made significant investment in PHNs, formerly known as Medicare Locals before 2015. PHNs are independent organizations funded by the federal government. They exist within roughly the same geographic boundaries as Local Hospital Networks and aim to improve medical services for patients at risk for poor health outcomes, ensure government funds are directed to health programs where they are most needed and where they will be most effective, and improve the links between local health services and hospitals, thereby, ensuring patients receive the right care in the right place at the right time. PHNs are region-focused and commission healthcare providers to meet region-based needs, including after-hours services, mental health services and health promotion, and face-to-face GP services (HealthDirect, 2021).

Today, there are 31 PHNs across Australia. As of 2023, the federal government is partnering with PHNs to fund 50 Medicare Urgent Care Clinics (UCCs) over three years. UCCs are a new model of care intended to reduce pressure on hospital EDs. UCCs will be covered under Medicare (“bulk billed”), open seven days a week, and accept walk-in patients. Based in existing GP clinics and Aboriginal Community Controlled Health Services, UCCs will provide treatments that do not require a hospital admission and can be billed to MBS, such as acute episodic care for minor injuries, broken bones, wounds, minor burns, closing fractures, simple eye injuries, and treating UTIs or ear infections. Services not offered include chronic disease management plans or preventative care (e.g., cervical screening). Consistent with PHNs, UCCs will respond to the needs of the local community (Primary Health Network, 2023). However, the Australian Medical Association has expressed its concern that UCCs will do little to relieve the pressures on hospitals, will further fragment care, and will unfairly compete with GPs (Australian Medical Association, 2022).

Across all reforms, the PHN reform and subsequent addition of UCCs represent the most targeted and deliberate effort to divert ED utilization. While the impact of UCCs diverting ED utilization in Australia is still unknown, recent research suggests modest reductions in lower-urgency ED presentation in 2019–2020 are attributable to PHNs. Initially, EDs saw a minimal decline in utilization among lower-urgency patients—those who could be treated by a GP or community health service—between 2015 (38%) and 2018 (35%) (Liotta, 2020). In 2019–2020, a slight increase in lower-urgency ED presentation across PHN regions was observed for in-hours care. Non-older adults were more likely to have lower-urgency ED visits during the in-hours period than older adults. By contrast, after-hours presentations decreased since 2018–2019. Although regional PHNs have seen higher rates of lower-urgency ED visits than metropolitan PHNs (where at least 85% of PHNs are located in major cities), both regional and metropolitan PHNs are performing comparably across observed improvements in lower-urgency ED presentation (e.g., in after-hours ED presentation). Rates of potentially preventable hospitalization have also remained consistent since 2015 until 2018. Thereafter, reductions in potentially preventable hospitalization of 6% (average) were reported by more than 90% of PHN regions (Australian Government Department of Health and Aged Care, 2022).

Conclusion: overall assessment and lessons learned

We can draw several similarities between Australia’s and Canada’s health systems, particularly in terms of the federal and state (provincial) governments’ roles. Differences exist at the level of payer for services, with Australia maintaining the option for Australians to pay for services (otherwise publicly funded through its own Medicare program) in private hospitals. Despite these differences in health system organization and financing, challenges concerning ED utilization across these countries and their states are

similar. These include a lack of after-hours services, long wait-lists for primary care, and limited population-level understanding of the range of non-ED models of care available apart from ED.

In the Australian context, it would seem as though there is no consistent approach to diverting avoidable ED presentation, with previous models not sustaining initial improvements in ED diversion. This may be rooted in variation across Australia in terms of availability and access to resources and diverse healthcare arrangements at the state-level (across rural and urban settings) and even at the local level (urban catchment areas within the same city). Australia's PHN program seems most promising at addressing local needs that are driving avoidable ED utilization and diverting (low urgency) ED presentations in after-hours ED care; however, momentum has been slow, and its impact on overall cost of care is not fully understood. Factors such as enhancing health human resource capacity in regional PHNs and improving consumer awareness and population health literacy have been noted as ways to divert ED utilization, particularly after hours (Commonwealth Department of Health, 2020). With a performance and quality improvement framework for the evaluation of PHNs now developed, which includes patient experience measures (Australian Government Department of Health, 2018), future evaluations may give important insights into whether this model achieved goals across domains such as patient satisfaction and cost-effectiveness.

Belgium

Brief healthcare system overview

The Belgian healthcare system is based on the principles of equal access and freedom of choice and covers almost the entire population for a wide range of health services. Health insurance is compulsory, based on a Bismarckian model, where residents must be affiliated to a sickness fund of their choice and contributions are proportional to income. Public financing that covers a broad benefits package is combined with a private system of delivery based on a system of independent practitioners and predominantly fee-for-service payments (Gerken & Merkur, 2022; Vandijck & Annemans, 2010).

In 2020, Belgium was ranked 12th in the OECD in health expenditure as a share of GDP (10.8%). With relatively high public spending on healthcare (79% of total spending), households' OOP payments and voluntary healthcare payment scheme amounted to 16% and 5% respectively. OOP payments are spent mainly on non-reimbursed services, co-payments, and extra-billings (Gerken & Merkur, 2022; OECD, 2022a).

Over the next few years, several reforms designated to improve the quality of care and efficiency of the health services are expected to be introduced in the Belgian healthcare system. Among them, reforms in structure and organization of hospitals and mental health care, development of integrated care, and modification of the national fee schedule. In addition, following the COVID-19 crisis, deliberations on improving the resilience of the healthcare system are also taking place (Gerken & Merkur, 2022).

Impetus for reform: challenges to the emergency care system

Population aging significantly impacts the use of healthcare services globally, notably, EDs (Dufour et al., 2019). In Belgium, people aged 65+ make up about 18% of the total population, up from 14% in 1980. Their share is projected to rise to 27% in 2050, which is expected to increase pressure on already overcrowded EDs nationwide (Morreel et al., 2020; OECD/European Observatory on Health Systems and Policies, 2019).

The number of ED visits in Belgium grows at an annual rate of 5%. The proportion of non-urgent visits reaches 56% of total ED visits, placing a heavy and potentially avoidable burden on the Belgian emergency care system (Baier et al., 2019). In addition, there are a high proportion (71%) of self-referrals, that is patients who visit the ED without a referral from a GP or an ambulance, and a relatively low proportion (23%) of ED visits that result in a hospital admission. This may suggest that a shift in healthcare provision from the EDs to primary care is required as it could potentially reduce costs and improve efficiency of urgent and emergency care delivery (Van den Heede & Van de Voorde, 2016).

Summary of key measures of ED diversion

Due to continuous growth in ED use, Belgian policymakers have embarked on a series of reforms aimed at reducing visits without medical justification to EDs (lower-acuity cases, primary care cases, etc.) since the beginning of the 2000s. First, in 2003, a higher co-payment for self-referrals to EDs was introduced. Second, in the same year, General Practitioner Cooperatives (GPC), which operate as walk-in centres for unplanned after-hours care for low-acuity cases, were opened (Van den Heede et al., 2017, Schoenmakers et al., 2021).

However, none of these reforms have led to a decrease in the number of ED visits. It seems that patients were not aware of co-payments which, therefore, did not play a significant role in their decision to visit EDs. Also, the existence of GPCs was not well known to the general public, and its opening hours were not fixed, as opposed to the more accessible EDs available 24/7. Furthermore, it is not clear that GPCs alleviate pressure on EDs since it seems to attract patients who prefer to visit a GP without taking time off from work, and not necessarily patients who are in need of urgent care (Van den Heede et al., 2017; Schoenmakers et al., 2021).

A third reform was implemented in 2008. A new hotline was introduced with the aim of guiding patients with primary care problems to primary care settings instead of EDs; first, as an automatic connection to the GP on call and, since 2016, as a telephone triage system in pilot regions (Van den Heede et al. 2017). In this nationwide system, an operator—a nurse, paramedic, or a physician—directs the caller to the appropriate level of care: ambulance intervention, urgent or planned referral to out-of-hours primary care services or to planned care (Schoenmakers et al., 2021; Morreel et al., 2020).

Since no GP telephone triage protocols existed in Belgium before the implementation of the hotline, the triage system was validated after its implementation. To develop a new set of protocols, a multidisciplinary expert-opinion group had more than 100 meetings and considered validated literature to integrate new low-urgency level GP protocols into existing high-urgency protocols. Therefore, the implementation meant limited changes in the high-urgency level triage with upscaling and downscaling of emergency levels with efficacy advantage. In addition, a well-functioning digital complaint procedure was installed as a safeguard with every complaint investigated and answered within 14 days by checking the operator's event sheet and listening to the recorded call (C. Van der Mullen, personal communication, March 29, 2023). A safety and efficacy study found that 9 out of 10 patient encounters were correctly referred, thus indicating successful implementation of the adjusted protocols (Schoenmakers et al., 2021). Since the implementation of the hotline, no physical or mental harm of patients was registered (C. Van der Mullen, personal communication, March 29, 2023).

In contrast, findings of a 2020 study on the new Belgic telephone triage guideline have yielded disappointing results. The study indicated that operators mostly chose the appropriate protocol but only chose the correct urgency level in one out of three cases. Therefore, the conclusion of the study was that "in this phase of development, the studied telephone guideline is not ready for implementation" (Morreel et al., 2020, p. 166). An additional study on the accuracy of the experimental Belgic telephone out-of-hours care triage came to similar conclusions: that the implementation of this method would lead to a higher workload at GPCs and would also most likely increase referral rates to EDs. Furthermore, findings indicated that the triage might be potentially unsafe, and therefore further adaptation and study are necessary before implementation (Morreel et al., 2022). On the other hand, it seems that these outcomes are contested for methodological reasons. First, it is possible that operators were not prepared well enough as they did not have any experience with the 1,733 GP protocols and received only a brief training (half a day). Second, it was argued that the validation methodology was faulty with no international agreement on the most appropriate statistics to assess interrater agreement on safety in triage (C. Van der Mullen, personal communication, March 29, 2023).

Notable initiatives: co-location of GPs with EDs

In June 2014, against the backdrop of the continuing rise in ED visits on the one hand and large investments in GP posts on the other hand, Belgian healthcare authorities carried out an evaluation of the

strengths and weaknesses of the Belgian organization of emergency care services. A few months later the government declared that it will act to reorganize the out-of-hours primary care system in order to reduce the number of avoidable ED visits; thus, setting the stage for the 2016 proposal for the reorganization of urgent care provision (Van den Heede et al., 2017b).

Following the proposal and after much deliberation between stakeholders, a new approach was introduced to the Belgic healthcare system: the co-location of PCPs with hospital EDs. PCPs, mainly GPs although involvement of pharmacist and midwives in co-location is encouraged (Van der Mullen, personal communication, March 29, 2023), co-located with an ED is an initiative aiming to reduce the burden on EDs of patients attending with non-urgent problems. In the co-location model, both services—GP and ED—allow a joint entrance to care with a common triage to determine the appropriate care level following algorithms and protocols. Both services operate independently but retain a certain degree of mutual consultation and referral (Schoenmakers, Delmeiren, et al., 2021; Van den Heede & Van de Voorde, 2016).

Interestingly, the evaluation that preceded the implementation of this model found that the evidence is not conclusive and that the quality of the evidence base was weak. However, it was also mentioned that "...there are indications that a co-location at the ED of GP-practices for out-of-hours care with one emergency care access point has the potential to reduce ED visits" (Van den Heede & Van de Voorde, 2016, p. 1346).

In the political aspect, several stakeholders, namely physician unions, did not favour this model and opposed its implementation as the only policy option for several reasons: GPs were concerned of loss of autonomy and hospital-centrism, and emergency physicians distrusted triage decisions taken by GPs (Van den Heede et al., 2016). As a result, a compromise was made where the proposed co-location model was implemented as one of many options for GPs to organize out-of-hours care, such as stand-alone GP posts and GP posts near the hospital. In addition, the 24/7 opening requirement for GP posts that was discussed during the deliberations was abandoned (Van den Heede et al., 2017b).

Despite the concerns and objections from physicians during the formation of the reform, a study that explored the views of patients and physicians on the co-location of a GPC and an emergency service found that about 83% of the patients, 74% of GPs, and 95% of emergency physicians favoured co-location. The major advantage perceived by respondents was a more adequate referral of patients. Seventy-nine percent of the GPs and 83% of the emergency physicians believed that co-location would lower the workload and wait time and increase care quality (Schoenmakers, Van Criekinge, et al., 2021).

Despite positive views of patients and physicians, currently there is no evidence, on a national or local level, of the co-location model's effectiveness, cost savings, or clinical benefits, including the reduction of avoidable ED visits. It is estimated that the more healthcare pathways created, the more consumption of care is taking place. Therefore, informing citizens of appropriate possibilities and limitations of out-of-hours services is required as well as encouraging the public, for example, by financial mechanisms established by insurers, to follow the phone triage (C. Van der Mullen, personal communication, March 29, 2023).

Conclusion: overall assessment and lessons learned

Belgium has long experimented with multiple reforms designed to reduce potentially avoidable visits to EDs with limited success. It is still too early to know what the long-term results of the Belgic co-location strategy will be, in terms of quality of care, efficiency, and savings. However, there are some indications from the Netherlands and Switzerland that the co-location of GPs in EDs for out-of-hours care has the potential to reduce ED visits (Van den Heede & Van de Voorde, 2016).

In Belgium, at least for now, doctors and patients alike express satisfaction with this new mode of operation. However, when considering policy options, one should take into account the considerable structural differences between the Belgic Bismarkian system and the single-payer systems of Canadian jurisdictions, as well as the notable dissimilarities in more basic characteristics in terms of geographic size and population density—features that may come into play in the formation and implementation of urgent and emergency care reforms nationwide.

Denmark

Brief healthcare system overview

The Danish national healthcare system developed gradually, with some form of universal coverage already in place more than 100 years ago. Since 1973, all legal Danish residents receive fully covered preventive, primary, and hospital care (including inpatient prescriptions), mental health and LTC, hospice care, as well as dental care for children under age 18. Adult dental care, physical therapy, optometry, and outpatient prescriptions are partially subsidized (Vrangbaek, 2020).

Residents are automatically enrolled in the system, assigned a GP, and can choose from two public insurance options. Nearly all (98%) opt for coverage in which GPs act as gatekeepers to secondary care without co-payments. The remainder of the population elects an insurance option with co-payments for specialist care in exchange for eliminating GP gatekeepers (Vrangbaek, 2020). In addition, 42% of the population purchases private insurance to cover typical co-payments, and 30% purchase supplementary insurance (usually via private employers) to expand access to various providers. In 2021, health spending accounted for 10.8% of Denmark's GDP, and public funding accounted for 85% of all health spending (OECD, 2022b). Financing and responsibility for service quality, efficiency, and delivery are divided among national, regional, and municipal governments.

Impetus for reform: challenges to the emergency care system

Overall, the Danish population is expected to grow slowly over the next year, with an anticipated increase of 6% in urban areas and declines elsewhere (OECD, 2022a). As Danish life expectancy has risen from approximately 77 years in 2000 to 81.4 years in 2021 (OECD, 2022b), the share of the Danish population aged 65+ continues to increase, further straining health and social services. From 20% in 2017, this share is projected to increase to 25% by 2050 (Danish Ministry of Social Affairs and Senior Citizens, 2022). More elders, many with increasingly complex chronic health conditions, have contributed to a 14% increase in unplanned acute hospital visits, many of which begin with emergency medical services (Fløjstrup et al., 2020).

Summary of key measures of ED diversion

Danish efforts to reduce patient loads and wait times in EDs have been part of larger health promotion and quality improvement strategies, in which ED admissions may be seen as proxies for inadequate preventive or primary care. Therefore, policy efforts have focused on reducing unplanned acute hospital visits overall. Indirect strategies towards this goal include health promotion activities such as reducing smoking rates and improving community-based support for patients with chronic illnesses (OECD/European Observatory on Health Systems and Policies, 2021; Vrangbaek, 2020).

Efforts both to prevent the need for and to improve emergency care more directly have evolved over time. Since 2004, patients need a referral from an urgent care call centre or a GP to enter the ED. Patients without referral are only accepted in clear emergencies (Baier et al., 2019). With barriers to walk-in ED visits, Denmark built an emergency care system over time that aimed to provide efficient and effective prehospital care.

Beginning in 2007, following a report from the Danish Health and Medicines Authority, strategies to prevent unplanned acute hospital visits emphasized improved access to acute primary care services and

better coordination between acute primary care and emergency care. While GPs continue to offer out-of-hours acute primary care via home visits or centralized clinics (Fløjstrup et al., 2020), the reforms that the report mandated reduced the number of acute care hospitals across the country from 40 to 22 (Baier et al., 2019) and enabled a single point of entry to all hospital departments through a single ED (Fløjstrup et al., 2020). Authority for financing and managing all regional prehospital and inpatient services and most outpatient health services was placed in five regional councils (down from 14 counties)—all whom own their region’s public hospitals (80% of the regions’ funding comes from a national block grant and 20% from municipalities) (Vrangbaek, 2020).

Known as Joint Acute Wards (JAWs), these EDs ensure 24/7 access to specialists and equipment such as CT and MRI scanners. To ensure that the longer travel times to these EDs did not affect patient outcomes, helicopters were added to the emergency fleets and ambulances were increasingly staffed by physicians (Baier et al., 2019). All regions have undertaken efforts to improve the capacity of prehospital care by installing advanced telemedicine in ambulances and upgrading the training of paramedics (K. Vrangbaek, personal communication, March 20, 2023). In case that hospitalization is needed, the ambulance staff can “book” a hospital bed for the patient in advance, thus saving unnecessary waiting time for admission (H. C. Christensen, personal communication, March 28, 2023).

Another major step was that all 98 municipalities in the country have established some form of municipal acute clinic or acute team to prevent unnecessary acute admissions to hospitals (particularly for older citizens and citizens with chronic diseases). These functions are often co-located with municipal nursing homes or health houses and provide a possibility to monitor and care for patients that might otherwise be referred to hospitals. Acute care teams in municipalities provide home visits. In some cases, municipal nurses are co-located in hospitals to provide easier admission and discharge. This may also contribute to diverting patients from ED/acute admissions (K. Vrangbaek, personal communication, March 20, 2023).

In 2011, in an attempt to rationalize the multiple points of entry to emergency medical services, a single emergency call number (112) was established throughout the country. Until 2014 (when the Capital Region initiated its own reforms), police or fire departments answered all calls nationwide, and medical issues were forwarded to newly established EMCCs in each region. Using the Danish Index for Emergency Care (37 criteria), physicians and nurses at the EMCC now triage patients to one of five urgency levels and then dispatch appropriate vehicles among several options (Frischknecht Christensen et al., 2016).

In addition to these reforms, Denmark has rolled out payment reforms to incentivize non-ED resolution of healthcare complaints where possible. GPs working in out-of-hours clinics continue to receive fee-for-service payments. In contrast, as of 2018, when remaining activity-related payments for ED services were phased out completely, EDs are paid entirely by a global budget (Baier et al., 2019).

However, it is worth noting that whereas these measures are designed to divert avoidable visits from EDs, the increasing shortage of GPs in Denmark works in the opposite direction. In the absence of appropriate access to primary care, many patients, especially young people whose conditions should have been treated by GPs, turn to prehospital and hospital settings (H. C. Christensen, personal communication, March 28, 2023).

Notable initiative: the Copenhagen model

Perhaps the most extensive reforms in Denmark are known as The Copenhagen Model which integrates after-hours services into Emergency Medical Services. By the beginning of 2014, all out-of-hours clinics in

the Capital Region of Denmark were ED-based and staffed while the other four regions remained unchanged, that is, GPs offering out-of-hours primary medical services either as home visits or in centralized clinics (Fløjstrup et al., 2020). The Capital Region's acute clinics are located within smaller hospitals (while JAWs are located in specialized hospitals). They are equipped to deal with acute medical needs and less severe acute injuries. The other regions also have JAWs in hospitals and acute clinics that are co-located in hospitals with access to acute functions and equipment. However, the other four regions also have less specialized acute clinics run by GPs and without access to acute functions or equipment. These clinics are often located in rural areas or remote towns (K. Vrangbaek, personal communication, March 20, 2023).

Also initiated in 2014, the Capital Region added a 24/7 helpline for any non-emergency acute primary care advice alongside the 112 emergency hotline. The new line (MH-1813) can access the 112 emergency hotline, and its personnel have access to the same prehospital electronic medical record (EMR) as the 112 helpline (Frischknecht Christensen et al., 2016). The MH-1813 hotline is unique in that it is staffed by specially trained nurses supplemented by medical staff and supported by algorithms. However, the hotline has been hampered by challenges in recruiting and retaining staff, and this has led to difficulties in living up to the waiting time targets (9 out of 10 calls should be answered within 5 minutes) (K. Vrangbaek, personal communication, March 20, 2023).

Emergency response can be customized in ways that direct patients to appropriate care providers (for example, home visits, GPs, mental health services, emergency dentist), dispatch specialized ambulances to the patient (e.g., neonatal, psychiatric, social services, and cardiac arrest), or send an out-of-hours GP for a home visit. As is also true elsewhere in the country, MH-1813 can make appointments for callers who need to be seen non-urgently in the ED, and patients can wait at home until their scheduled appointment (Frischknecht Christensen et al., 2016). This combination of remote urgent care and reliance on ambulance dispatches in Copenhagen, and gradually in other regions as well, have enabled the reduction in the number of night clinics across the country, as Denmark is shifting to more technologically oriented solutions in its effort to improve its emergency care system (H. C. Christensen, personal communication, March 28, 2023). Scholars seem to favour this integrated model, believing that this new system “makes clinical sense and is sustainable to also serve its covering population in the future, where complex healthcare demands caused by multi-morbidities are likely to increase” (Zinger et al., 2022, p. 7).

Impact of national reforms

- A Danish Ministry of Health study found not only reduced ED wait times between 2007 and 2014 but also overall ED contacts over this period dropped between 10% in the Southern Denmark Region and 27% in the Central Denmark Region (Baier et al., 2019).
- A study assessing 2011 urgent care data found that the Danish Index utilized by the 112 system appropriately triaged patients by level of acuity (Andersen et al., 2013).
- Unplanned contacts for acute care per 1,000 inhabitants increased 8% between 2005 and 2016. Importantly, however, unplanned contacts for people aged 18–49 increased by just 2% while those aged 65–79 increased by 44% (Fløjstrup et al., 2020), suggesting successful rerouting of non-urgent emergency care.

Impact of the Copenhagen reform

- According to presentation data shared by the medical director of the Capital Region's emergency medical services (Berlac, n.d.) between 2014 and 2019:
 - unplanned hospital admissions remained unchanged, but ED referrals declined by 10%.
 - 85% of ED referrals came via MH-1813.
 - average ED wait times decreased from 60–80 minutes on average to 9–11 minutes for urgent care and 27 minutes for non-urgent care, and GP home visits declined.

In addition, a 2022 study indicated that the reforms were accompanied by a shift of emergency dispatches away from non-urgent towards urgent emergency care. Between 2015 and 2019, high-acuity (Level A) dispatches increased by 38%, and low-acuity dispatches (Levels C and D) dropped by 64% and 24%, respectively (Zinger et al., 2022).

- According to a 2019 study, 73% callers to the Capital Region helpline were satisfied with the service provided to them. Satisfaction was associated with calling for a somatic injury, being offered a face-to-face consultation, and having a short waiting time on the phone (Zinger et al., 2019).
- A cost increase of 10% adjusted to inflation per 1,000 inhabitants was observed in the first year after the implementation of the Capital Region integrated helpline reform. In the second year, the cost decreased by 8% to its initial level of about €64,000 per 1,000 inhabitants (Zinger et al., 2022). However, the cost increased by 15% in the following years up to €73,750 per 1,000 inhabitants in 2019. It appears that the cost increase was mainly caused by hiring more personnel to deal with more calls and reduce the waiting times simultaneously (Zinger et al., 2022).

Conclusion: overall assessment and lessons learned

Denmark's efforts to improve urgent and emergency care are designed to address some of the root causes of ED load. These efforts focus on the reduction and consolidation of hospital EDs, the referral requirements to EDs, the creation of national triage hotline, and the expansion of out-of-hours primary care and its integration with emergency care, especially in the Copenhagen region.

Initial studies of the impact of these measures are promising in terms of ED diversion and provision of appropriate care according to level of acuity. More studies are needed to determine the long-term effects of this reform on care delivery, efficiency, cost reduction, and clinical benefit.

England

Brief healthcare system overview

The National Health Service (NHS) in England is financed through general taxation and is largely free for use at the point of service, though some services, such as dental care and outpatient prescriptions, are chargeable. It is a Beveridge-based, single-payer health system funded through general taxation. The Department of Health and Social Care is responsible for health services and NHS England (the operating name of the NHS Commissioning Board established in 2013 following the *Health and Social Care Act 2012*) is the payer for all publicly funded health services (Checkland et al., 2018).

In 2020, the UK was ranked 5th in the OECD for health expenditure as a share of GDP (12%). With relatively high public spending on health (83% of total spending relative to the OECD average of 76.3%), households' out-of-pocket (OOP) payments and voluntary healthcare payment scheme amounted to 12.5% versus the OECD average of 18.1% and 10% respectively (2019 data) (OECD, 2022b). While NHS care is mostly free at the point of service, there is some cost-sharing for NHS goods and services and direct payments for private treatment, dental care, social care, ophthalmic care, and outpatient prescription charges (Anderson et al., 2022). OOP payments as a percentage of total expenditure on health are 17% (2019) and comprise mainly medical goods (48.8%) and LTC (36%) (OECD, 2022b).

EDs (termed Accident and Emergency [A&E] in the UK) comprise three tiers: Type 1 departments are physician led with 24-hour services and facilities for a wide range of presenting conditions, such as resuscitation equipment for cardiac arrest; Type 2 departments are physician led but for specific ophthalmic or dental conditions; and Type 3 departments are for minor injuries and illnesses, such as cuts and bruises or infections and rashes (The King's Fund, 2022).

The English health system is among the more technically efficient systems among similar high-income countries based on its low expenditure per capita as a proportion of GDP and low administrative costs (Anderson et al., 2022). There are, however, significant health challenges facing England, including relatively high rates of avoidable mortality, comparatively high infant mortality, and low healthy life expectancy at age 60. These factors stem from high levels of preventable ill-health in the population, socio-economic inequalities, and population aging (McKee et al., 2021). There is evidence to suggest that these declines in health outcomes and life expectancy are related to austerity in public services since 2011 (Hiam et al., 2023; Loopstra et al., 2016).

Impetus for reform: challenges to the emergency care system

The NHS faces extreme pressure related to demand and service usage for emergency and urgent care. These issues manifest through service delivery issues, such as ambulances being unable to handover patients to full NHS hospital; trolley waits in A&E; a lack of staff; and, particularly, a lack of social care that contributes to bed-blocking (where patients are well enough to leave the ED but cannot be discharged due to a shortage of beds in long-term or supported care) (Marjanovic et al., 2018; Scobie & Flinders, 2023). There are persistent issues related to avoidable presentation at A&E for conditions better treated by a PCP, exacerbated by reduction in access due to lengthy wait times for primary care or in a tier 3 ED. These avoidable admissions relate to a number of competing factors; for example, from perceptions of access or availability to out-of-hours services or a lack of multidisciplinary admission avoidance teams so that ED staff find it easier to admit a patient than navigate multiple agencies across multiple geographical

areas (O’Cathain et al., 2016). Further, socio-economic deprivation is associated with higher use of A&E services with people in the most deprived areas of England attending at twice the rate of those in the least deprived areas. The British Social Attitudes Survey reports that people in deprived areas present at A&E because they are unable to see their GP in a timely manner or choose to go because they perceive doctors there to be more knowledgeable, and it is a way to have tests done quickly (The King’s Fund, 2022). To address these issues, the government and NHS England have introduced a series of access standards, pilot programs, and policy changes to improve access to services and to enable diversion to more appropriate points of care.

To address timely access, the operational standard, set in 2010, stated that 95% of patients presenting at A&E (ED) should be admitted, transferred, or discharged within 4 hours (Nuffield Trust, 2023). This is known as the NHS Pledge, introduced in the 2000s by the New Labour (1997–2010) government and set out in 2010 in the Handbook to the NHS Constitution (HM Government, 2022; The King’s Fund, 2022). Waiting time targets are widely regarded as a proxy for the overall performance of the NHS and social care system (The King’s Fund, 2022). Waiting times have worsened in recent years, exacerbated by funding settlements that did not keep pace with demand and increasing staff shortages. While the 4-hour target remains in place, it has not been met at the national level for any year since 2013–2014 nor in any month since July 2015. In 2018, NHS England announced a review of NHS access standards and piloted replacing the 4-hour standard with new measures, such as measures for how long patients should wait for assessment or treatment (The King’s Fund, 2022). The new standards were to be rolled out nationwide but were scrapped following a series of changes in government leadership and ensuing cabinet shuffles, so the 4-hour standard remains in place (Nuffield Trust, 2023).

There are a series of overlapping and concurrent interventions and policy pilots to improve access to appropriate care and enable better integration between primary, secondary, and ambulatory and emergency care. In 2014, NHS England published the *Five Year Forward View* to set out the challenges facing the NHS and the strategies to address them (NHS England, 2014). These included pilot programs in four areas of the health system, the last of which is the development of networks to improve emergency care. These initiatives are part of the NHS Long Term Plan (2019), a 10-year plan that sets out a national strategy for the health system that includes expanding access to urgent and emergency services through new service channels, such as Urgent Treatment Centres (UTCs) and a new model of emergency admissions through “same day emergency care” without an overnight stay (NHS England, 2019b). Simultaneously, there have been policy pilots linked to a wider set of reforms for integrated care (the NHS Vanguards) to develop new care models of urgent and emergency care (UEC) in order to improve the coordination of services and reduce pressure on emergency services (National Audit Office, 2018). There is broad support from users that an ideal UEC offers a simplified, single point of access so health professionals can choose the appropriate point of care to enable better continuity of care (Ablard et al., 2020).

Despite these persistent challenges related to accessing emergency and urgent care services in England, the national 2020 Urgent and Emergency Care survey showed that patients who used UEC services reported high rates of satisfaction and positive interactions with staff (e.g., >80% said that they were treated with dignity and respect all the time; >77% had trust and confidence in the doctors and nurses treating them). However, there is room for improvement, specifically related to pain management (<63% said staff did everything possible to help), staff availability (45% were unable to access medical or nursing staff while waiting treatment or examination while during care or treatment, and just 58% said they were

always able to access medical or nursing staff to assist them), and communication at discharge (Care Quality Commission, 2022).

Summary of key measures of ED diversion

There are several initiatives targeted at reducing demand for emergency services in England. These can be differentiated as those that are new provision, adaptations to conventional services or additional services. Below we summarize an example of each to demonstrate a range of policy options that currently exist, and to some extent, complement or compete with one another.

New provision: Telehealth services

NHS 111 is a telephone triage system piloted in 2010 (formally launched in 2013) to replace a prior iteration of telephone-based out-of-hours care, nurse-run NHS Direct. The pilot did not deliver the expected results of diverting patients to urgent care rather than the emergency system or reducing demand for ambulatory services (Turner et al., 2013). NHS 111 is novel in that non-clinical telephone advisors use the NHS Pathways software to conduct primary triage. The substitution of clinical with non-clinical staff to triage demand for urgent care services can result in variations to practice and anxiety among the call handlers (Turnbull et al., 2017). At present, half of callers receive a clinical assessment after primary triage (NHS England, 2019b). NHS 111 has been expanded to make use of clinical advisers, so that callers can be transferred to a clinician for advice in order to maximize the number of people who have their call completed within the same care episode. Clinicians work within a clinical hub (some remotely), and callers are either passed onto a clinician directly by the call adviser, or they leave their details and the clinical adviser will call them back later (personal communication, Fiona Sampson, April 18, 2023). A recent study examined a sample of calls to NHS 111 to explore the consistency between primary (non-clinical) and secondary (clinical) triage and found that 74% of calls were downgraded in severity, while 12% were upgraded. Major shifts across urgency levels occurred for upgraded and downgraded assessments; these were associated with individual clinicians conducting a secondary triage assessment despite the use of the same digital triage system (Sexton et al., 2023).

NHS 111 operates across the country as the initial point of contact for individuals seeking care and has been extended through internet-based assessment tools with the capacity to book appointments at urgent treatment centres to offer more consistent services to those seeking care (NHS England, n.d.). The evaluation of NHS 111 Online and NHS 111's existing telephone and urgent care system found the online service had little effect on the number of triaged calls to NHS 111 but increased recommendations to attend urgent and emergency care services. There is demand and a preference among some users for an online tool. It is possible that the new service will increase overall demand (Turner et al., 2021). While users are satisfied with the service, it has not been possible to accurately assess the impact of NHS 111 on other services, and there is no evidence of cost-effectiveness (Pope et al., 2017).

Adaptations of conventional services

Across England, a number of initiatives seek to streamline access to urgent and emergency services and to divert patients to the most appropriate option at the point of access. At present, there are hundreds of initiatives underway across the country to reduce admissions, ranging from frailty units for older persons to virtual wards—where patients are seen by a community team or acute specialists remotely, allowing patients to obtain the care they need via their virtual team without going into hospital. Similarly, care hubs or single point of access telephone numbers have been set up to try to enable ambulance services,

primary care, or patients to directly access required care without attending ED (personal communication, Fiona Sampson, April 18, 2023). Other initiatives include the use of GPs working in or alongside EDs (Benger et al., 2022) and chest pain observation units to reduce the proportion of patients admitted and discharged with acute coronary syndromes (Goodacre et al., 2004). While efforts are underway to standardize these initiatives through the introduction of Urgent Treatment Centres (UTCs), this section provides a snapshot of a few promising interventions among hundreds underway to reduce admissions, divert patients, or provide specialized services.

Type 3 departments for emergency services include a range of options for accessing care outside of one's PCP including walk-in clinics, UCCs, and minor injuries units (The King's Fund, 2022). A review of urgent treatment services found that the public viewed these options as confusing and were unclear about operating hours, diagnostic tests available, and the core or extended services offered. To address this, NHS England announced the standardization of UTCs for December 2019 that are open 12 hours a day, GP-led, and staffed by GPs, nurses, and other clinicians and that offer simple diagnostics (e.g., urinalysis, ECG) (Nuffield Trust, 2023). This standardization will involve the introduction of 110 UTCs (NHS England, n.d.). UTCs are a new iteration of walk-in centres that have proliferated since the 2000s (Salisbury et al., 2002).

To improve care in hospital for frail older people, there are a series of locally designed initiatives around the country to decrease admissions and improve in-hospital care. At the Norfolk and Norwich University Hospital, clinicians developed the Older Person's Emergency Department (OPED), a co-located unit staffed by geriatricians and emergency medicine physicians in 2016. Patients presenting at A&E are redirected to the OPED if they are 80+ and potentially frail. This clinic is open for 12 hours a day, 7 days a week and is specially designed with dementia-friendly corridors and assessment areas (Anandaciva, 2019). Similarly, in 2016, a project in South London introduced an Older Person's Advice and Liaison (OPAL) team comprising a physician, two physiotherapists, and two nurses. The OPAL team promotes clinical frailty scoring (alongside ED nurses and paramedics) and co-locates the frailty service near the ED entrance to review patients before admission (NHS Acute Frailty Network, 2022). In one hospital, the data suggests that OPAL team spends more time with patients, reduced length of stay for frail patients, and there is a decrease in readmissions (NHS Acute Frailty Network, 2022).

The same day emergency care initiative has also been introduced where emergency admissions are treated without the need for an overnight stay. This is being introduced to all acute hospitals across the country and is expected to increase the number of patients discharged on the same day of treatment from one-fifth to one-third (NHS England, 2019b).

Additional services

The *NHS Long Term Plan* describes ambulance services as a key part of urgent and emergency care services (NHS England, 2019b). There is a focus on reducing avoidable ambulance conveyance through new service routes, which reduces ED attendance by having a patient treated in a community setting (where safe to do so) or at home by paramedics and ambulance clinicians. This intervention is targeted at individuals whose needs might best be met in this way, such as people in LTC homes, people who have fallen, or those experiencing a mental health crisis. The interventions will be locally designed as part of the Sustainability and Transformation Partnerships developed by regionally based Integrated Care Systems around the country (NHS England, 2019a). An evaluation of 16 interventions— from seven of the ten largest ambulatory services in England targeting avoidable conveyance—reports a reduction in ED

conveyance and hospital admissions. There was no evidence of adverse events or negative impact on subsequent contacts with the 999 emergency service (equivalent to 911 in North America). The interventions involved collaboration with other healthcare actors, such as mental health professionals or occupational therapists, alongside paramedics with extended skills. The evaluation found there was no requirement for subsequent formal evaluation at the local level that might impede efforts to ascertain impact in the future. This is a particular concern for interventions targeting those in mental health crisis in order to measure the effectiveness and acceptability of such interventions (Knowles et al., 2020).

Conclusion: overall assessment and lessons learned

England has long experimented with a range of reforms to expand access and patient choice of provider for urgent or emergency care. There is wide access through NHS 111 where greater ease in accessing a clinical assessment, triage screening at EDs to appropriate venues/co-location of specialized units, and new data collection efforts have been made. There are challenges to progress across the wider health and social care system, specifically the ongoing impact of austerity measures in public services, Brexit-related staffing shortages, capacity, and backlog related to the COVID-19 pandemic. Current issues related to waiting times are exacerbated by those factors as well as ongoing labour disputes between the government and NHS England staff (including nurses, residents, and attending physicians [known as junior doctors in the UK]).

Israel

Brief healthcare system overview

Israel's National Health Insurance Law (1994) sets a universal healthcare package to all Israeli residents funded through a combination of general and designated healthcare taxes with co-payments. Pursuant to the law, residents are insured with mandatory insurance in one of the four non-profit health funds (Rosen et al., 2015; Waitzberg & Rosen, 2020).

The national expenditure on healthcare in Israel constitutes about 8.3% of the GDP—a share considered low compared with OECD average (9.7%). Israel's healthcare system comprises a mix of public and private services, provision, and finance. Approximately 71% of the national healthcare expenditure is public with the rest coming from private expenses, both OOP payments and voluntary, complementary, and supplementary health insurance plans. About 85% of Israelis hold some kind of voluntary health insurance, a relatively high rate considering the state provides a universal services package (OECD, 2022b).

Efforts to implement various organizational reforms in the Israeli health care system have notably intensified in recent years. Among them are the inclusion of components of dental care in the national basic health services scheme; the transfer of responsibility for mental health care from the Ministry of Health (MoH) to the health funds; the establishment of new health professions, such as advanced-practice-nurses and physician assistants, and others (Levi & Zehavi, 2017; Rosen et al., 2015; Waitzberg & Rosen, 2020).

Impetus for reform: challenges to the emergency care system

The Israeli healthcare system has struggled with overcrowding, straining its emergency care system for years with an average 4-hour waiting time and about 100% occupancy rate annually in EDs nationwide² (Haklai et al., 2021). Despite a relatively small share of elderly (about 12% 65+ compared to OECD average of 18%), Israel's population is gradually aging, and life expectancy is generally on a rise (OECD, 2023), thus, adding demand for urgent and emergency care to the already strained EDs.

Also contributing to Israel's strained emergency care system are potentially avoidable visits to EDs. According to a 2008 MoH study, about 29% of elderly and 44% of toddler visits to EDs were potentially avoidable, meaning they could be treated by a PCP (Simchen et al., 2008). Finally, the Israeli healthcare system is characterized by a low amount of acute care hospital beds (around 2.2 beds per 1,000 population) and a high bed occupancy rate (above 90% annually), which creates "bottlenecks" in the transfer of patients from the ED to other hospital departments (OECD, 2022b; Weiss, 2020).

Summary of key measures of ED diversion

In a 2012 review, the OECD commended the Israeli primary care services as among the best in the world, attributing Israel's relatively low healthcare spending and high health outcomes to their efficiency and quality that is manifested, among the rest, in prevention of avoidable hospital admissions (OECD, 2012). Although this alone does not necessarily establish a direct link between the quality of primary care and

² Both measures temporarily decreased in 2020 due to fewer visits during the COVID-19 pandemic.

the usage of hospital EDs, it can be seen as an indication of the importance of strong primary care for implementation of ED diversion policies.

In Israel, community physicians are only available during office hours, and the practice of after-hours care for these professionals is not common. Until the late 1980s, hospital EDs were the primary out-of-hours care service with limited first aid services provided only in some branches of Magen David Adom (Israel's equivalent of the Red Cross). This government-funded service was gradually terminated during the 1990s (Zimmerman, 2013).

The first UCCs were established in 1988 and 1989 by the two biggest health funds, Clalit and Maccabi, respectively. Simultaneously, a private company, Terem Emergency Medical Centres, which now has nationwide distribution, opened its first branch. By the mid-1990s, all four health funds established such services (Taragin et al., 2000), at times working via Terem or additional private companies. These facilities provide out-of-hours care in low-acuity cases at lower costs compared to hospital EDs (Zimmerman, 2013). Some of the privately owned centres are open 24/7 and most of them offer physician home visit services. All health funds are required to reimburse patients who use UCCs. In this way, health authorities are trying to promote the integration of UCCs in the healthcare system. UCCs in Israel are predominantly staffed by physicians, as innovative health professionals, such as advanced-practice nurses and physician assistants, many of them paramedics who acquired additional medical training, are in their infancy. However, physician assistants are increasingly integrated in both UCCs and regular hospital EDs.

Another type of service, which is closely related to the UCCs, is the “front emergency departments.” These are free-standing EDs that are generally situated in remote urban locations and operated by regional hospitals. Their aim is to provide out-of-hours access to urgent and emergency care for residents of remote locations and to divert visits from the regional hospital ED, and they may include clinic rooms, x-rays machines, laboratories, ultrasound, CT (computed tomography) scanners, and dialysis services (Dadon, 2022; Netivot Municipality, 2022; Zimmerman, 2013).

Despite the important role of community-based UCCs in Israel, according to our literature review, there is lack of evidence of its impact on health services and particularly on hospital EDs in terms of usage and misuse, clinical benefit, cost reduction, and patients and care providers' perceptions are scarce at best. However, according to a MoH report, in 2017–2019, the number of ED visits per age-standardized population in the Jerusalem district and the West Bank region was one-third and one-fourth lower, respectively, than the national average, possibly due to the high activity of Terem centres in these areas. It is also worth mentioning that a steady and continuing decline of hospital ED visits per 1,000 population, about 1% to 3% annually (age-standardized), is evident nationwide from 2011 to 2020 (except for a sharp 18% decline between 2019 and 2020 due to the COVID-19 outbreak in the beginning of 2020) (Haklai et al., 2021).

In recent years, the health funds have also begun to develop remote emergency care services, including telephone consultation at nurse centres and online video calls with family physicians or pediatricians. Other innovative services of the health funds are apps designed to enhance the availability of health services for patients while potentially alleviating pressures from EDs. One example is a Maccabi health fund app for locating an available physician who is qualified to serve as an alternative provider to a regular ED service in geographical proximity to the patient. Another app was designed for patients to self-identify symptoms based on medical protocols for a diagnosis and, consequently, a referral to chat with a family physician or an emergency medicine physician (Clalit Health Services, 2023; Maccabi Health Services, n.d.).

Notable initiatives: Home-based telecare services

In 2012, Maccabi Healthcare Services, the second largest health fund, opened a proactive telecare centre for chronic conditions. The Maccabi Telecare Centre (MTC) is staffed by a multidisciplinary team of health practitioners such as nurses, physicians, clinical pharmacists, social workers, and nutritionists. The MTC responds to members' inquiries 24/7, independent of patients' geographic location. Each patient is assigned a personal nurse who proactively conducts medical monitoring of the patient's condition to prevent complications. Information derived from devices, such as glucometers, is transmitted and integrated into the centre's operating system that analyzes patient outcomes (Porath et al., 2017).

In a study conducted by Maccabi, data of 388 patients who used the MTC services (81.6 years of age on average) were compared to 6,068 Maccabi insured members who received regular treatment in their clinics (79.6 years of age) in 2014–2015. Average monthly utilization data of hospital and PCPs and costs of both groups were compared in the 12 months preceding and following the intervention (Porath et al., 2017). Compared to the matched controls, frail elderly MTC patients had a higher pre-intervention rate of hospital days, ED visits, PCP visits, and costs. In the intervention, monthly rates of utilization and costs of MTC patients declined, while hospital days and costs increased in the control group. Pre- and post-intervention differences between groups in hospital days and ED visits were statistically significant ($p < 0.05$) as well as were costs ($p < 0.001$), and PCP visits were insignificant. Specifically for ED visits, mean pre-intervention average monthly visit was 0.07 in the MTC group and 0.04 in the control group. Post-intervention average declined, in both groups, to 0.05 and 0.03 in the MTC group and control group respectively. The difference between groups for the pre-post changes were statistically significant ($p < 0.05$) (Porath et al., 2017).

These results align with the findings of previous studies that have indicated reductions in ED visits among telecare users with long-term medical conditions, although the overall cost effectiveness of telecare solutions for elderly populations is somewhat questionable (Baier et al., 2019; Beale et al., 2009; Henderson et al., 2013)

Conclusion: overall assessment and lessons learned

Strained and overcrowded hospital EDs are considered a major health policy issue in Israel. Efforts to divert avoidable visits from EDs were manifested mainly through establishing nationwide networks of health fund-based and private company-based UCCs. Although evidence of their impact on healthcare cost and utilization as well as clinical benefit was not found in the literature, gradual nationwide reduction of ED visits is evident during the past decade. Additionally, technology-oriented solutions were recently developed by the health funds, namely, remote care and the usage of apps.

Israel is different than Canadian jurisdictions in its demographic age structure (younger population), its smaller geographic size, and its population density. Additionally, its healthcare system structure is different with a mixture of public and private funding, and its delivery is based on Bismarkian model of health-funds insurance and financing as opposed to the single-payer Canadian system. In Israel, health funds and private stakeholders are the main players in developing alternatives for ED services, which is considerably different than the Canadian healthcare system landscape.

Netherlands

Brief healthcare system overview

The Dutch healthcare system is based on a Bismarckian model of mandatory universal health coverage through private insurers which are required to accept all applicants. In addition, most of the population (84%) own supplementary, voluntary insurance covering a range of services that are not covered by statutory insurance, such as dental care, complementary medicine, and contraceptives (Wammes et al., 2020).

The Netherlands spends about 11% of its GDP on health. The share of its public spending out of the total spending on health is one of the highest in the OECD (85%). Accordingly, the OOP expenditure, as a share of total spending in the Netherlands, is the third lowest in the OECD (after France and Luxemburg) of 9.3% compared to the OECD average of 18.1% (OECD, 2022b).

Due to concerns over inefficiencies, long waiting times, and rising costs, the Netherlands has been implementing market-oriented reforms in its healthcare system such as creating managed competition between private health insurers and shifting from budget-oriented reimbursements of healthcare providers to a performance- and outcome-driven approach (Wammes et al., 2020). Additional notable reforms were the decentralization of LTC, the reorganization of mental healthcare, and the development of new care roles such as an advanced-practice nurse and a physician assistant (Kroneman et al., 2016).

Impetus for reform: challenges to the emergency care system

There is an association between population aging and increased utilization of emergency care (Kremers et al., 2019). In the Netherlands, the share of older population (aged 65+) is projected to rise from 20% in 2021 to 23% in 2030, with an even sharper increase of people aged 80+ (The World Bank, 2022). In view of these demographic trends, increased utilization of healthcare services is expected in the Netherlands. The crowding of EDs is becoming a growing concern, driving measures to divert avoidable visits to hospital EDs (Thijssen et al., 2016; Wackers et al., 2023).

Summary of key measures of ED diversion

The main factor supporting ED diversion in the Netherlands is its strong primary care system. During office hours, patients can usually see their own GP on the same day. In addition, GPs are mandated to provide care during after-hours where they act as gatekeepers to EDs and hospital admission (M. Kremers, personal communication, April 19, 2023). In 2019, 55% of ED referrals came via GPs or other caregivers, higher than in 2016 (49%) and much higher than, for example, the UK's 25% (Monitor, 2014) where they act as gatekeepers to EDs and hospital admission. Dutch ED admissions, at 124 per 1,000 inhabitants in 2012, were the lowest among benchmark countries of Australia, Denmark, England, France, and Germany (which ranged between 156 and 311). Moreover, its rates of non-urgent ED visits are similarly low at 84 per 1,000 inhabitants, compared to between 111 and 219 among these benchmark countries (Baier et al., 2019).

Several ED diversion policies contributed to these outcomes. Common to many Western countries, the Netherlands established care pathways in which ambulances bypass the nearest ED for the best-equipped ED (for trauma since the late 1990s, for stroke and AMI since 2010) (Baier et al., 2019). In addition, to

provide an alternative to ED visits and hospitalization for elders with complex medical and/or social issues, First Line Stay facilities were established that provide up to 3 months of care. Despite their promise, however, ongoing bed shortages and imperfect information about bed availability continue to be challenges. In 2018, a study reported that only 21% of GP cases accessed First Line Stay beds the same day. Kremers et al. (2019) report that in 2017, 17% of patients aged 65+ presenting at EDs could have—but did not—received care at First Line Stay facilities. In 2019, only 0.17% of all patients at the ED were referred directly to a First Line Stay (M. Kremers, personal communication, April 19, 2023).

Primary Care Cooperatives (PCC)

Since 2000, after-hours care has been provided via large scale PCCs. Notably, the shift from EDs to PCCs did not occur without dispute: insurers offered shared-savings programs to hospitals to compensate for lost revenue (Baier et al., 2019). PCCs provide after-hours telephone advice (40% of contacts), clinic visits (50%), or home visits (10%). They employ a uniform national care model in which a nurse, supervised by physicians (who are always onsite) conduct standardized telephone triage (Rutten et al. 2017; Smits et al., 2017). In addition, all PCCs can conduct urine and glucose testing, and a growing number also offer radiology and routine lab tests (Rutten et al., 2017). Consumer financial incentives also contribute to the use of PCCs as an ED alternative (Kremers et al., 2019). Until an annual cap is reached, consumers pay relatively high deductibles for ED self-referrals of €385 up to a maximum of €885 in 2022. However, this deductible regards every form of medical specialty care, not only ED (GP care is free from deductible) (Baier et al., 2019; M. Kremers, personal communication, April 19, 2023). The introduction of the deductible resulted in a substantial reduction of self-referrals. A possible repercussion of such a policy is that a simple problem may go undetected for days thus leading to complications (Kremers et al., 2019).

Quality of care provided in PCCs is considered generally to be good. A 2017 study found that patients were either correctly triaged (79%) or incorrectly triaged (12%) to a higher level of care and concluded that PCC care is “reasonably efficient and safe” (Rutten et al., 2017). It also found that the average waiting time was 30 minutes and that 90% of all patients who need a home visit were reached within an hour and 70% of those with life-threatening conditions were reached within 15 minutes. Finally, as PCCs resulted in declining after hours call hours from 19 to 4 hours per week, GPs reported greater job satisfaction around work–life balance (Monitor, 2014).

As reported by Smits et al. (2017), the number of patient contacts with PCCs has been increasing since 2005, a large portion (45%) of which are considered to be non-urgent medically. GPs are concerned about the increasing workload and have made several improvement suggestions. These include better triage and more telephone doctors to support nurses, higher consumer copays/deductibles, greater daytime access to GPs, and more attention to underlying reasons for higher utilization in communities with more women, low-income households, and non-Western immigrants.

Notable initiatives: Emergency Care Access Points (ECAP)

Increasingly, PCCs are located near hospitals or in formal collaborations with EDs, with the goal of redirecting non-urgent ED self-referrals to GPs (Smits et al., 2017; Thijssen et al., 2016). These collaborations typically take the form of ECAPs (also referred to as urgent care collaboration [UCC]) in which all patients seeking emergency care (usually at a hospital) enter through a single access point and are triaged to either GP or ED care (van Gils-van Rooij et al., 2015). By 2015, at least 71 of the country’s 122 PCCs were part of an ECAP (Smits et al., 2017).

Evidence on the impact of ECAPs on ED utilization is mixed. A 2013 study found that the reorganization of EDs as ECAPs resulted in a 13% decrease in overall ED use, the near absence of self-referring patients at EDs after hours, and a greater probability of hospital admission and clinical follow-up (Thijssen et al. 2013). Similarly, a 2015 study found that the proportion of patients referred to EDs was 22% smaller in ECAPs compared to the usual care setting (van Gils-van Rooij et al., 2015).

A 2015 study that explored differences in patient characteristics, presented complaints, and ED discharge diagnoses between both EDs with an ECAP and EDs without an ECAP found that patients at ECAP EDs were older, medical professionals referred more patients, and more patients received a hospital admission. This suggests that increased collaboration between after-hours primary and emergency care providers may optimize ED use while diverting minor cases to primary care settings (Smits et al., 2017; Thijssen et al., 2015). On the other hand, it was also noted that since the number of referred patients increased, and they have more diagnostic tests performed and are more likely to be admitted, this questions the actual reduction in healthcare costs (Thijssen et al., 2015).

Smits et al. (2017) found that treatment of self-referrals by primary care physicians (PCPs) in ECAPs is a safe and cost-effective alternative to providing care at EDs. Increased collaboration between after-hours primary and emergency care providers seems to optimize the use of EDs which might help alleviate their overcrowding: Patients using ECAPs were found to be older and more likely to be triaged to the ED and to be admitted to the hospital. Smits et al. also noted task substitution from physicians to specialized nurses in ECAPs as a positive development in terms of physician workload, patient experiences, and care outcomes. Another contributive factor to the ECAP performance was the initiation of a 2-year university-based training program for PCPs to improve their emergency care knowledge and skills. Some EDs in the Netherlands are staffed with nurse practitioners or physician associates. There is growing attention for these professionals to practice in other sectors of the health system such as primary care (M. Kremers, personal communication, April 19, 2023).

Kremers et al. (2019) note a slight decrease in overall ED visits between 2013 and 2016, although this is not attributed specifically to the ECAP model. Another decrease in ED visits was observed between 2015 and 2019 from 2.35 million to 2.24 million (M. Kremers, personal communication, April 19, 2023). Additionally, from 2015 to 2019, the authors identified a 14% increase of patient visits by people aged 65+ despite their share of the population increasing by only 8% during this time. On the other hand, a 2016 study, while confirming the association between the Netherlands' well-developed primary care system and overall ED length of stay, found no difference between regular EDs and ECAPs (Thijssen et al., 2016). Furthermore, despite PCC and ECAP alternatives, as well as financial incentives to avoid EDs, as many as 23% of ED patients were self-referred in 2016 (Kremers et al., 2019). Finally, Wackers et al. (2023) did not find association between ECAPs and ED utilization compared to stand-alone primary care facilities adjusted for sex, age, and comorbidities. Moreover, ECAPs were associated with significant increases in hospital admissions and total costs.

Conclusion: overall assessment and lessons learned

The Netherlands benefits from some of the lowest ED utilization rates among Western countries, primarily due to its strong primary care system. Several measures were implemented to alleviate pressures on EDs and divert avoidable visits to primary care settings, among them PCCs which are increasingly located near

hospitals or in formal collaborations with EDs and generally referred to as ECAPs (or UCCs). Evidence of ED diversion by ECAPs is mixed. In addition, there is evidence that ECAPs are associated with significant increases in hospital admissions and total costs.

Suggestions for improving care for the Dutch population in ways that avoid both ED visits and hospital admissions include improving the skill sets of GPs on handling emergency care in community care settings; increasing the number of emergency room specialists; increasing the use of multidisciplinary care teams, training physician superspecialists (as opposed subspecialists), and implementing care pathways specific to chronic conditions (Kremers et al., 2019; Smits et al., 2017).

Ontario

The growing need for health and support services for the elderly

Like many of its counterparts around the globe, the Canadian healthcare system in general and that of Ontario in particular are facing formidable challenges due to long-term demographic, epidemiological, and social trends. Population aging and the steady increase in life expectancy coupled with the increasing prevalence of chronic morbidity place a heavy burden on healthcare and social services (Morton-Chang et al., 2021; Spasova et al., 2018; Williams & Morton-Chang, 2020). Additionally, poverty, isolation, and loneliness contribute to poor health among elders and give rise to healthcare demand. On the supply-side, hospital-based health services struggle to respond to complex multiple chronic conditions, which patients often fail to navigate in a highly fragmented system and end up being treated in inappropriate care settings (Morton-Chang & Williams, 2021; Williams & Morton-Chang, 2020). Therefore, an integrated approach to home and community care, particularly for seniors, is becoming an integral part of Ontario's healthcare plans and involves implementing integrated clinical care pathways for people living with chronic conditions such as diabetes and congestive heart failure (Ministry of Health, 2022, 2023).

Ontario is Canada's second largest province with a population of more than 14 million and about 40% of Canadians. More than 85% of Ontarians live in urban centres, largely in cities on the shores of the Great Lakes (Government of Ontario, 2023a). Population aging in Ontario is on the rise. According to the 2021 Census, the average age of Ontario's population was 41.8 years, nearly the same as the average national age (41.9). The number of seniors (65+) in the province grew by almost 20% over 2011–2016. Their share of total population continued to rise, reaching 18.5% in 2021 up from 16.7% in 2016, 14.6% in 2011 and 12.4% in 1996 (Government of Ontario, 2023b).

The model of Seniors' Campus Care Continuum

Approaches that aim to wrap services and supports around seniors within their own communities include, but are not limited to, inter-professional care planning, senior-friendly housing options with support, community-based primary healthcare. Aligned with the World Health Organization's (WHO) strategic objectives and with recent directions in Western Europe and Scandinavia, a model of care in Ontario that combines many of these approaches in one physical location is the Seniors' Campus Care Continuum (also known as "seniors' villages," "senior campuses," and "campuses of care") (Georghiou & Keeble, 2019; Morton-Chang et al., 2021; Williams & Morton-Chang, 2020).

Campus residents are typically older persons with multiple chronic needs. Campuses also support underserved, high-needs populations including adults with special needs (e.g., women escaping violence). In addition, campuses may support particular cultural and faith communities (e.g., Francophone, German, Jewish, Catholic, and Mennonite) (Williams & Morton-Chang, 2020).

Campuses are far from uniform – their shapes and sizes vary, reflecting local needs and resources. However, a central feature of all campuses is the co-location of a mix of community-based health and social supports, along with different types of housing and long-term care home (LTCH) beds at a particular geographic location. This enables the provision of more coordinated, collaborative, comprehensive and patient-centred care, thus reducing the likelihood of seniors to "fall through the cracks" and end up in inappropriate care settings, including the hospital (Williams & Morton-Chang, 2020). By pooling infrastructure and resources and concentrating programs and providers in one place, campuses can

reduce costs and generate efficiencies not available through stand-alone provisions. Moving from the organizational level to the system level, senior campuses integrate and support the current restructuring of Ontario's healthcare system designed, among other things, to deliver a full and coordinated continuum of care to a defined geographic population (Williams & Morton-Chang, 2020).

Not-for-profit, charitable, and municipal campuses are represented by AdvantAge Ontario which is the only provincial association representing the full spectrum of the senior care continuum. According to the latest published study found in this review, which was conducted in 2017–2018, there were 37 AdvantAge Ontario member campuses serving thousands of Ontarians across the province. Campuses were considered only if they offered a full continuum of care, including mixed housing options, LTCH beds, and community support services (CSS) for on-campus clients as well as local seniors living off-campus. Therefore, it is important to note that this is an under-evaluation of the total number of campuses in Ontario since the survey did not include organizations that were not AdvantAge Ontario members (e.g., for-profit organizations) or “campus-like” organizations that offer, for example, mixed housing options or LTCH beds but not both (Williams & Morton-Chang, 2020).

Campuses may offer affordable housing, partially subsidized by the provincial government and localities, alongside higher market rent options and life lease housing. This aligns with the Canadian National Housing Strategy (2018) that aims to increase affordable housing options with supports for those in greatest need. However, there are indications that in many cases seniors with low incomes faced a limited supply of social housing on campuses and could not afford to pay even “fair” market rent (Morton-Chang et al., 2021).

There exists no public financing model to create a comprehensive/complete campus of care. Thus, campuses' governance and financing require a mix of private and public resources and public–private partnerships for investments in the foundation and development of senior campuses. This is especially the case when different public resources come with their own regulatory frameworks that challenge the provision of care (National Institute on Ageing, 2019).

Campus barriers

Ontario campuses face several barriers to achieving their full potential, including (Morton-Chang et al., 2021; Williams & Morton-Chang, 2020):

- *Conflicting laws, regulations, funding arrangements, and accountability requirements:* Campuses are compelled to navigate in a highly fragmented healthcare system where multiple institutions and stakeholders have their own rules, regulations, and modes of operation. This challenges the provision of a well-coordinated and patient-centred care. For example, when originally developed, senior campuses were intended to allow people to receive care across a continuum of need, yet current policy does not permit seamless transitions to the LTCH component of the campus if the time comes for this level of need.
- *Human resource shortages and inequities:* Human resource shortages experienced by campuses range from personal support workers and nurses to culinary and allied staff. These shortages are more prominent in northern and rural regions. However, by comparison to stand-alone community programs and LTCHs, campus challenges were less acute. On the positive side, this has

motivated some campuses to partner with educational institutions to train workers on site and to develop ways of scheduling workers across programs and services.

- *Undervalued and underfunded CSS:* There is evidence of financial constraints that challenge the adequate provision of CSS and assisted living services. This is due to budgets that do not keep pace with growing needs, which contrasts indications of increased funding of in-hospital care and LTCH. While policymakers emphasize the importance of supporting people “closer to home,” they still focus on medical services, sometimes at the expense of social care and support services.

Key considerations for campus development

Evidence for Ontario campuses supports three key considerations for policymakers and providers planning to build, scale-up, or spread campuses of care (Williams & Morton-Chang, 2020):

1. *Creating age-friendly communities:* Evidence suggests creating cohesive, age-friendly communities that actively promote well-being, independence, and social inclusion for all community members by planning combined physical and social activities. It is also recommended to integrate non-medical determinants of healthy aging and to create off-campus collaborations and partnerships with entities such as businesses and municipalities.
2. *Building organizational vision and readiness:* A values-based vision guided by the understanding that the needs of people and communities come first is needed, along with leadership that will take decisions and act accordingly to fulfill this vision. Leaders need to consider how best to use existing assets, to constantly scan the policy environment, and to search for development opportunities from a strategic point of view.
3. *Enabling policy frameworks:* Enabling policy frameworks are needed to advance the scale and spread of campus projects at organizational and system levels. This can be done by simplifying funding mechanisms of services and removing barriers to client flow along the care continuum. A step forward in this direction is the 2021 provincial government’s announcement of loan guarantees for not-for-profit LTCHs (AdvantAge Ontario, 2021).

Conclusion

In Ontario, the Seniors’ Campus Care Continuum model aims to deliver a coordinated and affordable range of health, social, and supportive services to a growing senior population in a specific geographic location. Thus, campuses may potentially enhance integrated care while reducing hospital admissions and LTCH placements, lower costs, and increase efficiencies compared to dispersed stand-alone services operating in a highly fragmented environment. Nevertheless, regulatory, financial, and human resource barriers often challenge campuses’ activity and development, and evidence gaps in the existing literature make it difficult to examine their potential advantages in comparison to other models of care.

However, experts point to anecdotal cases where the integrated care provided on campuses often delays or prevents patient admissions to EDs or placements in LTCH in comparison to an equivalent person in the community who is not receiving this type of access to care and, therefore, is more likely to visit and ED or get into LTCH. Policymakers may benefit from future research in this subject.



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