

General practitioners working in or alongside the emergency department: the GPED mixed-methods study

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Declared competing interests of authors: Jonathan Benger reports that, during the early stages of the project, he was the National Clinical Director for Urgent and Emergency Care at NHS England (London, UK) (2013–19) and that, during the final stages of the project, he was the Interim Chief Medical Officer at NHS Digital (Leeds, UK) (2019–present). Sarah Purdy is a member of the National Institute for Health and Care Research (NIHR) Health and Social Care Delivery Research (HSDR) Funding Committee (2019–present). Joy Adamson is a member of the NIHR Health Technology Assessment (HTA) Commissioned Calls Funding Committee (2019–present). Helen Baxter reports employment by the NIHR Centre for Dissemination and Engagement outside the submitted work. Rose Watson reports employment by Medialis Ltd (Banbury, UK) outside the submitted work.

Disclaimer: This report contains transcripts of interviews conducted in the course of the research and contains language that may offend some readers.

Published October 2022

DOI: 10.3310/HEPB9808

Scientific summary

The GPED mixed-methods study

Health and Social Care Delivery Research 2022; Vol. 10: No. 30

DOI: 10.3310/HEPB9808

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Scientific summary

Background

Urgent and emergency care systems are facing a steadily rising demand. In hospital emergency departments (EDs), this leads to long waiting times and crowding, which are associated with poor patient outcome and experience. Over the past decade, EDs across the UK and Europe have implemented a range of new service models locating general practitioners (GPs) in or alongside the emergency department. This has been proposed as a way of addressing rising demand for ED attendance, reducing admission and investigation rates, improving patient care and reducing costs. However, there is little clarity regarding the mechanisms through which benefits might be achieved, and the underpinning hypotheses are often unclear.

Recent guidance from the National Institute for Health and Care Excellence concluded that there was insufficient evidence to reach a recommendation on co-located GP units [National Institute for Health and Care Excellence (NICE). *Emergency and Acute Medical Care in Over 16s: Service Delivery and Organisation. Recommendations*. NICE guideline [NG94]. URL: www.nice.org.uk/guidance/ng94/chapter/Recommendations#emergency-and-acute-medical-care-in-hospital (accessed 16 October 2021); NICE. *Chapter 17 GPs Within or On the Same Site as Emergency Departments. Emergency and Acute Medical Care in Over 16s: Service Delivery and Organisation*. NICE guideline 94. URL: www.nice.org.uk/guidance/ng94/evidence/17gps-within-or-on-the-same-site-as-emergency-departments-pdf-172397464604 (accessed 16 October 2021)]. Nevertheless, in spring 2017, the UK government announced a capital fund of £100M to support or introduce GPs working in or alongside all EDs in England, coinciding with the start of this study [HM Treasury. *Spring Budget 2017*. London: HM Treasury; 2017. URL: www.gov.uk/government/publications/spring-budget-2017-documents (accessed 1 March 2021)].

Objectives

- Map and describe current models of general practitioners working in or alongside the emergency department (GPED) in England.
- Determine the impact of these services on patient processes and outcomes, including overall attendances, waiting times, emergency admissions, reattendances and mortality.
- Assess the impact of GPED on the case mix of admitted patients by exploring admission rates, including short stay and zero-day admissions.
- Explore the impact on GPs, including turnover, absence, satisfaction, well-being, and attitudes to and the scope of practice.
- Explore the impact of GPED on the working patterns and roles of other health-care professionals in the ED, including training, workload, skill-mix and expertise.
- Explore the impact on local urgent care services, the wider system and the interface between services.
- Assess the impact of GPED on patients and carers.
- Explore the costs and consequences of care at ED sites with and without these services, and compare the costs of different service models.
- Prospectively evaluate the promotion of GPED through collaboration with sites that received capital funding to support implementation.

Methods

We completed a mixed-methods study in three work packages (WPs).

Work package A mapped, described and classified current models of GPED in all EDs in England. We also interviewed key national and local system leaders, staff and patients to identify the underpinning domains of influence and hypotheses, and the potential mechanisms for benefit and disbenefit. We also interviewed local service leaders who were awarded capital funding from the UK government's initiative to support national implementation, before and 12 months after their capital funding award.

Work package B used a retrospective analysis of routinely available Hospital Episode Statistics data. We extracted data on all patients attending a type 1 (i.e. 24 hours per day and consultant led) ED during the study period (1 April 2018 to 31 March 2019). Measures of outcome included waiting times, admission rates, zero-day admission rates, reattendances, mortality and the number of patient attendances. Each outcome was analysed separately using two alternative methodological approaches: (1) a pooled analysis of all attendances to hospitals reporting GPED start and end times, in which differences in service opening hours across hospitals were used to separate the effect of the service from the general effects of time of day; and (2) a regression discontinuity design, in which outcomes for patients attending the same ED shortly before or after the service started were compared to identify hospital-specific effects. We explored the potential net cost savings using a comparative approach, based on the results of the pooled analysis.

In WP C, we completed a detailed mixed-methods analysis in 10 case study sites. We collected and synthesised quantitative and qualitative data collected through non-participant observations; semistructured interviews with staff, patients and carers; and a workforce survey to ascertain the views and experiences of the staff working across the case study sites and the patients and carers attending the service.

In addition to the individual analyses completed for each of the three WPs, we conducted a higher-level synthesis to integrate the study findings.

Patients and members of the public were involved throughout the development and delivery of the research through membership of the Study Steering Committee and participation in a series of facilitated workshops. Patient and public representatives contributed to the study protocol, approvals and data collection instruments, mixed-methods analysis, study interpretation and dissemination.

A structured knowledge mobilisation plan was developed and enacted.

Overall, we found that the reality of GPED was much more complex and varied than we had anticipated. Models varied between and within sites and changed frequently in response to a variety of factors, of which national policy and funding represented only one component. This made classification and comparison particularly challenging both within and between sites. We adapted our data collection, analysis and interpretation to reflect this reality.

Results

We determined the model(s) of GPED provided by all 177 type 1 EDs in England at two time points: September 2017 and December 2019. Models were classified according to an iteratively developed taxonomy: inside – integrated; inside – parallel; outside – on site; and outside – off site. The vast majority of EDs in England include a co-located general practice service, most commonly in parallel with ED provision. During the study period, fully integrated models tended to be replaced by a more distinct general practice service component, possibly as a result of capital funding allocations that allowed structurally separate facilities to be established. However, we found no association between the service model adopted and the observable characteristics of an ED.

We identified eight domains of influence that participants felt would be affected by the introduction of GPED. These domains were identified through the analysis of 228 semistructured interviews with national policy-makers, local service leaders, health professionals, patients and carers, and the domains were developed by the research team through a series of round-table discussions. The domains were used as a framework for structuring our results and the associated mixed-methods analysis.

Domain 1: performance against the 4-hour target

There was considerable uncertainty regarding the expected impact of GPED on the '4-hour target' that 95% of ED patients should be admitted, discharged or transferred within 4 hours of arrival; this was further complicated by differences in the way that patient attendances were recorded at hospital sites. Quantitative analysis found no impact on 4-hour performance overall, although there was considerable heterogeneity between sites. This is most likely because of the fact that 4-hour performance is influenced by many complex factors, of which GPs are only one small component.

Domain 2: use of investigations

There was a lack of consensus as to whether or not GPs should be given access to investigations such as radiographs and blood tests. These differences in opinion were a source of tension and disharmony between staff, and had implications for what people considered to be the purpose and impact of the service.

Domain 3: hospital admissions

The impact on admissions was considered variable and was, to some extent, associated with the different approaches to risk demonstrated by GPs and ED staff, and also individual views on whether or not GPs should have access to investigations. Quantitative data showed no overall effect on hospital admissions, including admissions with same-day discharge, although again there was substantial heterogeneity.

Domain 4: patient outcome and experience

A positive experience was more likely if patients were seen in a timely manner, and felt that their complaint was taken seriously and was addressed in a reassuring and professional way. The professional background of the treating practitioner was generally less relevant, and patients were accepting of the service and had an understanding of its aims. Among patients reattending the same ED within 7 days, we found a very small, but statistically significant, improvement associated with GPED (-0.3% per patient); however, the clinical significance of this was judged to be negligible. There was no effect on the proportion of patients leaving the ED without being seen or on 30-day mortality.

Domain 5: service access

Although staff were concerned about the risk of increasing 'inappropriate' use of the ED, these services were not advertised and patients were generally unaware that they were available. We found no effect on the volume of ED attendances or the proportion of patients attending who would be suitable for management in alternative or primary care services.

Domain 6: workforce recruitment and retention

Staffing issues dominated discussions about the impact of the GPED study and posed a major threat to its success. Local services leaders and site staff expressed concern that these services could draw GPs away from primary care and cause competition for GP staff. These services were considered an attractive prospect for GPs seeking portfolio careers and wishing to expand their practice, knowledge and skills. The job was made less attractive by the type of work and practical issues, such as travel, parking and access to information technology (IT). In the workforce survey, GPs working in or alongside the ED reported less opportunity to use their abilities and lower job variety than a cohort of peers working in traditional general practice.

Domain 7: workforce behaviour and experience

The process of 'streaming', in which a senior nurse determines which patients are suitable for GPED, was closely related to service effectiveness and safety. However, the streaming role was viewed negatively by many nursing staff, who saw it as physically and psychologically demanding and a distraction from traditional nursing activities. Tensions between GPs and streamers were identified at all sites. GPs were seen to 'pick and choose' their patients and nurses were criticised for streaming patients 'inappropriately'.

Nursing staff reported higher levels of pressure from dealing with problem patients than ED doctors or GPs.

When compared with their peers working in traditional general practice, GPs working in or alongside the ED reported generally lower levels of job satisfaction in relation to physical working conditions, freedom to choose their own method of working and remuneration. In contrast, they reported higher levels of job satisfaction associated with work hours and overall ratings of job satisfaction were also higher.

Domain 8: resource use

Staff and patients could generally see the potential for cost savings; however, much scepticism remained around whether or not these goals would be realised in practice. The only outcome with a potential identified cost saving was unplanned reattendance to the ED, and the possible effect was very small (estimated saving £30,000–37,000 per ED per annum). Even when using a conservative estimate of the cost of operating the service, based on GP workforce costs (£454,000) and omitting other possible costs (e.g. support staff and capital expenditure), we found that costs vastly exceeded possible cost savings.

Conclusions

Implementation of the GPED study was highly subject to local context and micro-level influences. Key success factors were adequate staffing and training, streaming, and infrastructure and support. Interprofessional working, supported by effective processes and systems, was a key determinant of success. However, we found no consistent evidence of improvements in patient outcome or experience, and current models do not appear to be an efficient use of health-care resources.

Implications for practice

- Services are highly context specific, and could be planned and implemented in a way that is sensitive to local circumstances.
- The intended outcomes and benefits should be clear; they should be actively monitored and measured to understand the extent to which they have been achieved over time.
- Clear governance and oversight arrangements could be established from the outset, in particular the expected scope of practice of clinicians providing the general practice service.
- GPED services are most likely to be successful in circumstances where significant numbers of eligible patients attend the ED, where a stable workforce can be recruited and retained and where the physical environment allows the planned service to be delivered successfully.
- Effective streaming is central to an effective service. Streaming staff are usually experienced nurses and could be trained and supported to ensure that they are able to deliver a safe and consistent streaming process.
- Staff engagement, at all levels and across all professions, is essential. Strong and visible management and clinical leadership are required over an extended period. Particular efforts should be made to foster effective communication and develop positive interprofessional relationships.

- Care could be taken to ensure that effective supporting IT and administrative systems are established.
- The service should be subject to regular multidisciplinary audit and review, including review of service performance and clinical incidents.
- Enduring service change takes time and results will not be realised immediately; commitment and perseverance are required from all parties.

Recommendations for future research

- If these service models continue, we recommend further research after 3–5 years to understand the longer-term effects and implications of GPED.
- We recommend further research to better understand streaming and to clarify the optimal approach in terms of patient outcome, safety and experience.
- Additional research to explore attitudes to risk and how this varies between and within medical specialties, and the impact that this has on practical clinical decision-making, would help to inform the ways that staff are trained, deployed and supported.
- Further research is required to explore and understand the contrasting views of stakeholders regarding the implementation of national policy initiatives, alongside empirical evidence as to how such initiatives should be implemented in general.
- We recommend that a set of standards are developed for health policy implementation, supported by methodologies to facilitate rapid and ‘real-time’ evaluation of new models of workforce and service delivery.
- Further research is required to understand the interface and relationship between primary and secondary care within the wider context of the health and care system.

Trial registration

This trial is registered as ISRCTN51780222.

Funding

This project was funded by the National Institute for Health and Care Research (NIHR) Health and Social Care Delivery Research programme and will be published in full in *Health and Social Care Delivery Research*; Vol. 10, No. 30. See the NIHR Journals Library website for further project information.

Health and Social Care Delivery Research

ISSN 2755-0060 (Print)

ISSN 2755-0079 (Online)

Health and Social Care Delivery Research (HSDR) was launched in 2013 and is indexed by Europe PMC, DOAJ, INAHTA, Ulrichsweb™ (ProQuest LLC, Ann Arbor, MI, USA) and NCBI Bookshelf.

This journal is a member of and subscribes to the principles of the Committee on Publication Ethics (COPE) (www.publicationethics.org/).

Editorial contact: journals.library@nihr.ac.uk

This journal was previously published as *Health Services and Delivery Research* (Volumes 1–9); ISSN 2050-4349 (print), ISSN 2050-4357 (online)

The full HSDR archive is freely available to view online at www.journalslibrary.nihr.ac.uk/hsdr.

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This report

The research reported in this issue of the journal was funded by the HSDR programme or one of its preceding programmes as project number 15/145/06. The contractual start date was in June 2017. The final report began editorial review in November 2020 and was accepted for publication in June 2021. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HSDR editors and production house have tried to ensure the accuracy of the authors' report and would like to thank the reviewers for their constructive comments on the final report document. However, they do not accept liability for damages or losses arising from material published in this report.

This report presents independent research funded by the National Institute for Health and Care Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, the HSDR programme or the Department of Health and Social Care. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, the HSDR programme or the Department of Health and Social Care.

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