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A taxonomy of the form and function of primary care services in or alongside emergency departments: concepts paper

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A taxonomy of the form and function of primary care services in or alongside emergency departments: concepts paper

Alison Cooper[1], Michelle Edwards[1], Janet Brandling[2], Andrew Carson-Stevens[1], Matthew Cooke[3], Freya Davies[1], Thomas Hughes[4], Katherine Morton[2], Niro Siriwardena[5], Sarah Voss[2], Jonathan Benger[2], Adrian Edwards[1] and the GP-ED teams.

[1]Cardiff University

[2]The University of the West of England, Bristol

[3]Warwick University

[4]Oxford University Hospitals

[5]Lincoln University

Corresponding author: Dr Alison Cooper, 5th Floor, Neuadd Meirionnydd, Heath Park, Cardiff CF14 4YS Tel: 02920 687183 CooperA8@cardiff.ac.uk

Abstract

Primary care services in or alongside emergency departments look and function differently and are described using inconsistent terminology. Research to determine effectiveness of these models is hampered by outdated classification systems, limiting the opportunity for data synthesis to draw conclusions and inform decision-making and policy.

We used findings from a literature review, a national survey of Type 1 emergency departments in England and Wales, staff interviews, other routine data sources and discussions from two stakeholder events to inform the taxonomy. We categorised the *forms* INSIDE or OUTSIDE the emergency department: INSIDE primary care services may be **integrated** with emergency department patient flow or may run **parallel** to that activity; OUTSIDE services may be offered **on site** or **off site**. We then describe a conceptual spectrum of integration: identifying constructs that influence how the services function - from being closer to an emergency medicine service or to usual primary care. This taxonomy provides a basis for future evaluation of service models that will comprise the evidence base to inform policy-making in this domain. Commissioners and service providers can consider these constructs in characterising and designing services depending on local circumstances and context.

191 words

Introduction

Worldwide, increasing pressure on emergency departments from rising demand,(1) has led to much interest in different models of service delivery, including the use of primary care services in or alongside emergency departments. (2–4) However, the way these primary care services look and operate varies depending on local context and whether they are required to operate closer to an emergency medicine service or to usual primary care. Research to evaluate the effectiveness of different service models (including patient experience, service and cost-effectiveness outcomes) is hampered by inconsistent terminology, outdated taxonomies and heterogeneous, single-site study designs. This limits the opportunity for data synthesis to draw conclusions that will inform decision-making and policy.(5–7) Research is urgently needed to understand if the *form* these services take supports the intended *function,*(8) and requires an updated taxonomy to enable comparison of models and outcomes.

The United Kingdom (UK) has a universal healthcare system, the National Health Service (NHS), funded though taxation.(9) Primary care is led by general practitioners, community-based doctors with generalist training, supported by nurses, nurse practitioners and allied health professionals, often with additional diagnostic and prescribing skills working as independent clinicians. Urgent and emergency healthcare services are varied and described using interchangeable terminology (Box 1). Three main general practitioner roles are described for primary care services associated with emergency departments (Box 1): treating patients identified as having primary care type problems in a unit **alongside** the emergency department including walk-in centres, urgent care centres or traditional out-of-hours services; **screening** patients at the front door of the emergency department to redirect those with primary care type problems to an alternative service off site; or **fully**

integrated with the emergency department service, treating patients presenting with a

wider range of conditions.(10) Identification of patients for these services is also varied, with

triage (a clinical activity to sort patients by acuity so that those with the greatest need are

seen first) and *streaming* (an operational activity to sort low acuity patients by clinician

availability and suitability) sometimes combined or as separate activities**. Embedded** and **co-**

located are further terms that have been used to describe primary care models, where

clinicians receive patients *streamed* from the emergency department (Box 1).(9)

Box 1: UK urgent and emergency healthcare services (10–12)	
Emergency department	Hospital based 'front door' departments for patients with accidents or emergencies
Minor injuries unit	Care for minor injuries only; may be nurse led
Walk-in centre	Walk-in access for unscheduled urgent care. May include minor injuries and minor illness; may be nurse led
Urgent care centre	Unscheduled care for minor injuries and minor illness. Includes minor injury units and walk-in centres; may be nurse led
Urgent treatment centre	General practitioner led urgent care centres
General practitioner in-hours	General practitioner led primary care services between 8am-6.30pm
General practitioner out-of-hours	General practitioner led services available out-of-hours (6.30pm-8am) and weekends, not usually receiving referrals directly from the emergency department
Alongside the emergency department	General practitioner services located alongside or next to the emergency department
Screening at the emergency department front door	General practitioners working at the front of the department screening attendees and either treating or diverting to other places – effectively acting as a filter
Fully integrated with the emergency department	General practitioner services fully integrated into a joint operation covering the whole range of unscheduled primary care and emergency services
Embedded into the emergency department	General practitioners working within the emergency department alongside emergency clinicians, receiving patients *streamed* as appropriate for primary care staff by the triage nurse
Co-located Urgent Care Centre	General practitioners working in a separate area next to the emergency department, receiving patients who have been advised to attend through telephone assessment service (e.g. "NHS 111") or *streamed* via the emergency department nurse

NHS England adopted a policy (2017-18) where emergency departments could apply for capital bid funding (one-off payments) to implement new or develop existing services to support general practitioner streaming.(3) This has changed the nature of emergency department services and how they function, with evolving relationships with primary care services and the sorting of patients depending on patient acuity and clinician availability. Language to describe the different services is used inconsistently, with considerable ambiguity around the term 'co-located'. Also, general practitioners rarely perform a screening role at the emergency department front door. Agreed and consistent terminology is needed to describe the *form* these services now take, and if form supports the intended *function,* so that we can understand which service models are being implemented and how they work. The terminology also needs to reflect the current developments in primary care provision, with a broader range of staff than general practitioners alone.

Recognising this evidence gap, in 2015 the UK National Institute for Health Research (NIHR) Health Services and Delivery Research (HS&DR) programme commissioned research to evaluate the effectiveness, safety, patient experience and system implications of the differing models of primary care services in or alongside emergency departments. Two research teams were commissioned, led from Cardiff University and the University of the West of England, Bristol.(13,14) We aimed to jointly develop a taxonomy describing the *form* and constructs that influence the *function* of primary care service models in or alongside emergency departments, to provide the framework for further research and comparing effectiveness between service models.

Obtaining background information

To understand the nature of the various services in existence, we gathered

background information from multiple data sources including: a literature review; a national

survey of all Type 1 emergency departments in England and Wales; staff telephone

interviews; additional NHS data sources; and early selected site visits.

Data sources

1. Rapid realist literature review

We undertook a rapid realist literature review,(15) from April to November 2017,

developing theories about how general practitioners and models of primary care services in

or alongside emergency departments work in different contexts to explain varying

outcomes, that may be useful for policy-makers.(16) We sourced research papers from

earlier systematic reviews, and supplemented them with updated database searches and

citation tracking, also creating an expert group from our co-applicants to assist theory

development and guide searches. Our theories were developed from 96 articles to explain:

how staff interpret the streaming system; different roles general practitioners adopt in the

emergency department setting (traditional general practitioner, extended role general

practitioner, gatekeeper or emergency medicine clinician, alongside other primary care

staff); and how these factors influence patient (experience and safety) and organisational

(demand and cost-effectiveness) outcomes.(16)

2. National survey

We developed a survey, administered through Online Surveys, to capture data about general practitioners and models of primary care services associated with emergency departments (see supplementary data 1). The survey topics covered: the geography of the service related to the emergency department; disciplines of the primary care staff providing the service; how and what type of patient groups were selected for the service; use of investigations; funding and governance arrangements; the aims of the service and whether these had been achieved; enablers and barriers to setting up the service and changes made or planned for the future. The design was informed by recent systematic reviews,(5,17,18) and a similar survey conducted by the Primary Care Foundation in 2010,(10) with multiple choice questions and additional space for free text comments. We ran a pilot with our co-applicants and local academic general practitioners, and iterations were made.

An invitation email to participate in the study was sent to the clinical directors of all Type 1 emergency departments, consultant-led 24-hour services with full resuscitation facilities,(19) in England (n=171) and Wales (n=13); first contacted 13th September, reminder 27th September 2017. The study was advertised in the Royal College of Emergency Medicine (UK) monthly news bulletin. Co-applicants (MC, TR) sent a further follow up email in October 2017 to non-responders to encourage participation and the survey was kept open until 28th February 2018. Summary data were extracted through Online Surveys and exported onto a secure database at Cardiff University.

3. Staff interviews

We purposively sampled a selection of emergency departments that described variation in services, to gather more in-depth qualitative data. Clinical directors from 20 departments

agreed to participate in a 30-60 minute audio-taped telephone interview. Questions were

tailored, based on their survey responses, and included: how the staff worked; effects on

patient demand and flow; meeting the aims of the service and changes; patient safety;

implications for the wider system (see example in supplementary data 2).

NHS England also provided the study team with a list of emergency department sites

that had applied for capital funding in 2017 to support general practitioner streaming. We

contacted the Senior Responsible Officer for the application at each bidding organisation,

with 38 agreeing to complete semi-structured telephone interviews (interview guide

supplementary data 3) about how their emergency department currently operates, and

their plans for implementing new models of general practitioner services in the emergency

department.

4.   Additional data sources

Further information to inform the taxonomy was derived from routinely collected data

(e.g. https://www.nhsbenchmarking.nhs.uk/ and

https://www.healthylondon.org/resource/london-uec-stocktake/) and publicly available

documents (including Care Quality Commission reports, Board papers and news items

sourced from internet searches). Data from 10 selected study sites (five from the Cardiff

University project, five from University of West of England) were available to provide

further detail about constructs needed in the taxonomy to cover wider system, department

and individual level factors. We visited each study site and collected qualitative data

through observations and informal or semi-structured audio-taped staff interviews. Because

data were collected from multiple sources, we sometimes encountered elements of conflict

between these sources. To resolve this, we used a hierarchy approach in which fieldwork

observations (where available) were considered the most reliable, followed by clinical

director interviews, survey responses and other data sources, in descending order of

reliability.

Ethics committee approvals

The survey and follow-up interviews were categorised as a NHS service evaluation.

Ethics review for the survey and follow-up interviews was carried out by Cardiff University

School of Medicine Research Ethics Committee and permission was granted on 29/07/2017

(ref 17/45). The interviews with sites that applied for capital funding to support primary

care streaming were conducted as research, with approval from the Health Research

Authority (HRA: 230848).

Findings from the survey, interviews and additional data sources

We had 71 English and six Welsh survey responses (n=77/184, 42%). Additionally, we

obtained data for 41 English departments from additional data sources, including another

five English Type 1 departments that had not been invited to complete the survey (status

can change year on year), totalling information on 62% (n=118/189) of Type 1 emergency

departments in England and Wales (seen in supplementary data 4). Of our 71 English survey

responders, 82% (n= 58/71) applied for capital bid funding, and of our 100 non-responders

in England, 84% (n=84/100) applied for capital bid funding.

The data demonstrated the complexity of models in use and inconsistency in the

language being used to describe the different services, with considerable ambiguity around

the term 'co-located'. Primary care clinicians associated with emergency departments,

separate to traditional GP out-of-hours services, included a mix of general practitioners, advanced nurse practitioners and nurses working regular or ad-hoc shifts in different ways, seeing different patient groups (see supplementary data 5). No survey responses or information from other sources indicated that the only role general practitioners had was to screen patients on arrival at the emergency department. A range of characteristics for employment hours, contracting models and IT systems was described. Access to investigations, the extent of primary care patient demand in the emergency department, practitioner experience and interest in emergency medicine, and the degree to which they were encouraged to use emergency medicine or primary care protocols also varied. Findings showed that existing classification systems for these service models were not adequate to support research and administration going forward. Therefore, an updated taxonomy was necessary to provide a framework for further research and enable comparison of models and outcomes.

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Formulation of the taxonomy

We consulted with stakeholders for assistance in how to focus the taxonomy and classify the service models in a way that would be useful for commissioners, policy-makers, practitioners, researchers and service users. Our initial stakeholder conference was held in Bristol in February 2018. We invited survey respondents and key authors from the literature. We also used contacts from the research groups to recruit leaders from the Royal Colleges of Emergency Medicine and General Practitioners, NHS Improvement, Care Quality Commission and patient and public contributors. Participant groups included: commissioners and policy makers (n=6); clinical leads and emergency department clinicians (n=8); general practitioners and nurse practitioners (n=6); public and patient representatives (n=8); and research team members (n=14). We seated our stakeholders in these separate groups in order to capture different perspectives, with a research team member facilitating each table discussion using structured guidance.

We developed a glossary of terms potentially useful for characterising the services from the rapid realist review, survey and interviews and circulated this in advance (see supplementary data 6). This and a summary of the findings from the survey, review and interviews were presented to provide a platform from which to initiate group discussions. There were two structured workshops; the first about why participants would find a taxonomy important, and the second about priorities for classifying models. Facilitators gave group feedback to the plenary discussions. Data were captured through flip charts and note taking from research team members (NP, DP).

After reflection and discussion, participants agreed that a taxonomy was needed to adequately describe and define this complex system, to support evaluation and to guide

policy decisions. An important conclusion was that it should describe both the structure - the *form* - and constructs that influence the *function*, that is whether the service operates closer to an emergency medicine service or to usual primary care service provision. A key conceptual underpinning was that although taxonomies tend to present mutually exclusive categories of models, in the case of emergency department primary care models, stakeholders viewed it as a *spectrum of integration*, from highly integrated with the emergency medicine service to more separate primary care service models, often without clear distinction in practice.

The FORM of primary care service models in or alongside emergency departments

　　Project team members (AE, AC, ME, NP, DP, SV, KM, JB) met in June 2018 to discuss learning and feedback from the event, and from the site visits that had since taken place, to map the taxonomy structure, its labelling and definitions. Location of the service, INSIDE or OUTSIDE the emergency department, was proposed as a useful classification of *form* - reflecting the patient's journey and experience, and often aligning with staff contractual arrangements, governance responsibility and accountability (Figure 1, definitions in Box 2). The INSIDE models varied from those in which primary care practitioners are *integrated* with emergency medicine staff or in which they work in a separate *parallel* primary care service. An alternative primary care service OUTSIDE the emergency department could be on the same hospital site – which we termed *on site* - or elsewhere, which we termed *off site***.

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Figure 1: The FORM of primary care service models in or alongside emergency departments

Key: ➡ Patient flow 😊 Emergency medicine clinicians 😊 Primary care clinicians
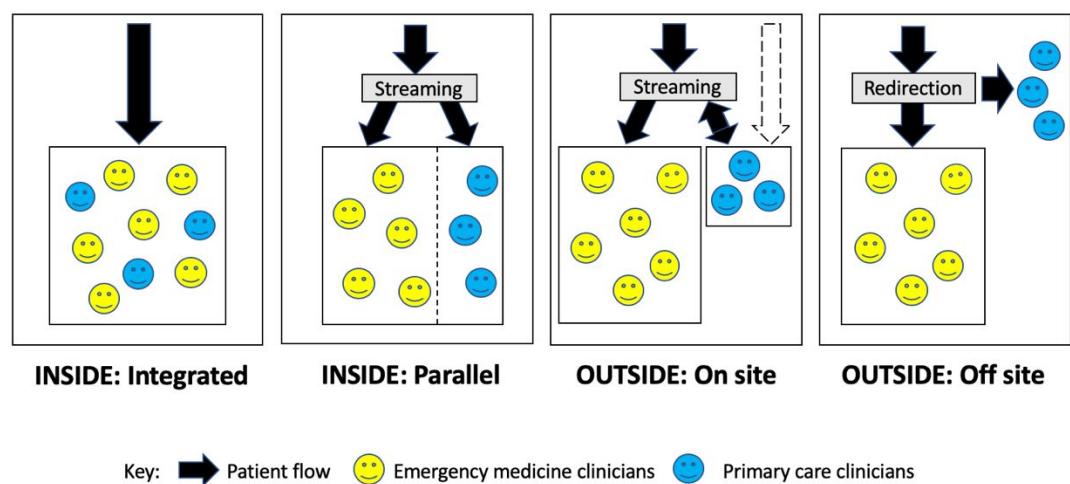
| Box 2: Taxonomy to describe the FORM of primary care service models in or alongside emergency departments	
INSIDE the emergency department	Patients access a primary care service within the emergency department
INSIDE: Integrated	The primary care service is fully integrated with the emergency medicine service
INSIDE: Parallel	There is a separate primary care service within the emergency department, for patients with primary care type problems
OUTSIDE the emergency department	Patients access a primary care service separate to the emergency department
OUTSIDE: on site	The primary care service is elsewhere on the hospital site
OUTSIDE: off site	The primary care service is off site (may include telephone advice via 111, or pharmacies, dentists, opticians, urgent care centres or registered in-hours or out-of-hours primary care services) **

**These services are distinct from emergency department provision so are not represented further in the taxonomy

Conceptual spectrum of integration: constructs that influence the FUNCTION of these services

Classifying services simply by *form* however, did not always represent the *function* of these services – from integrating with emergency medicine services to usual primary care services. Using our early case site visits as examples, we were able to map out constructs (from the glossary of terms, supplementary data 6) that influenced service function. We grouped these at at the wider system, department and individual clinician levels,(20) to develop a conceptual summary of constructs that influence the *function* of these services (Figure 2). This could be used to consider whether the constructs aligned with the *form* adopted.(8) For example, whether the constructs of function for an "INSIDE integrated" model align with an emergency medicine service or if the constructs of function for an "INSIDE parallel" or "OUTSIDE on site" model align with usual primary care services.

Each respective construct may influence the overall function of the service including: the demographic and morbidity profile of the local population; demand from patients with primary care type problems; staff recruitment needs; department level clinical leadership and culture; contractual and payment arrangements; and the skill-mix and personal interest of the general practitioners and other primary care health professionals. Staff may be deployed in more than one mode and constructs may also vary according to service pressures, time of day, staff availability and other influences. The taxonomy as applied to some case site examples is shown in Figure 3.

Figure 2: Conceptual model identifying constructs that influence the FUNCTION of primary care services in or alongside emergency departments
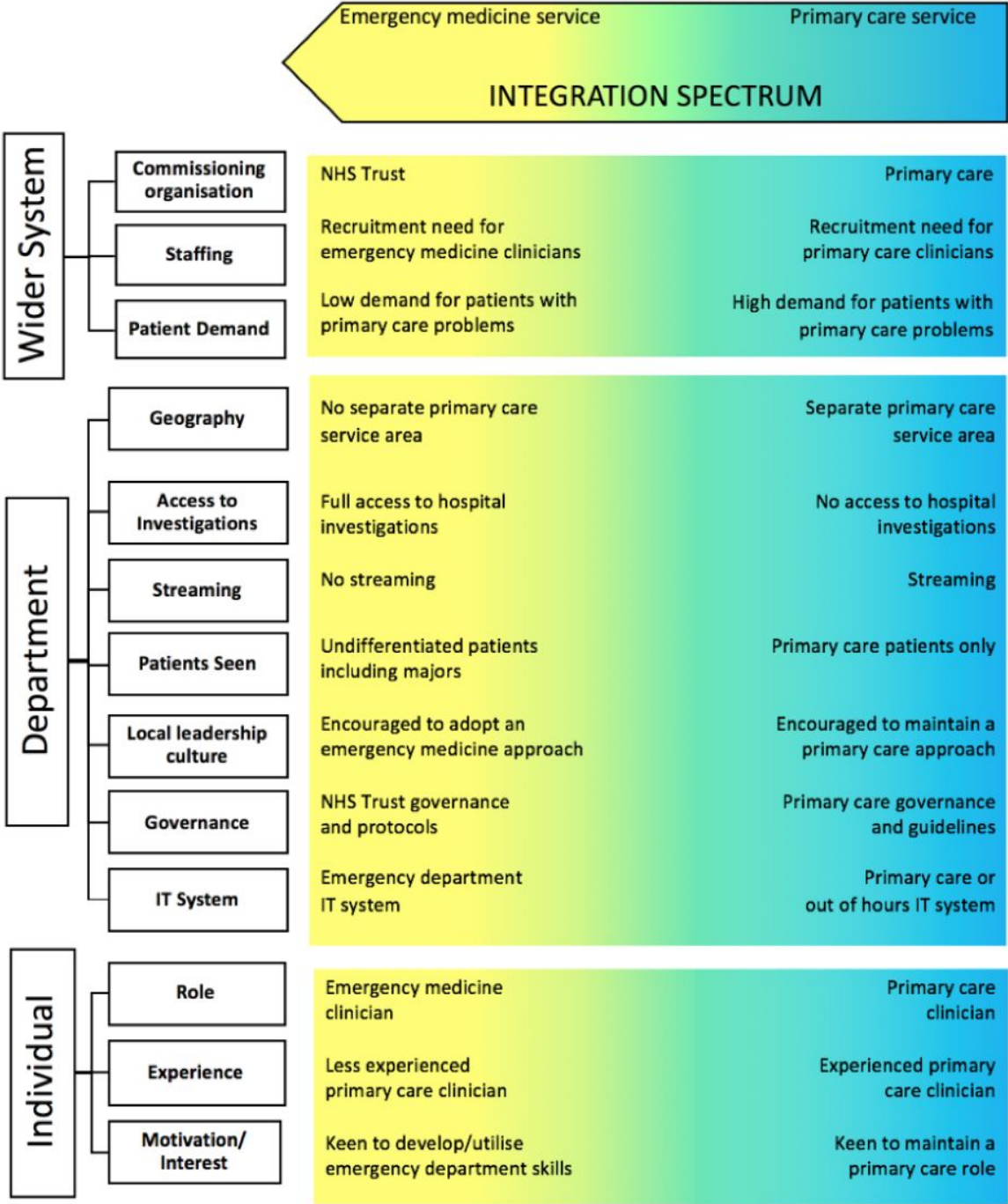
Emergency medicine service

Constructs that contribute to primary care staff adopting an emergency clinician role

and the primary care service developing towards and integrating with the emergency

medicine service include difficulties in recruiting emergency medicine clinicians and low

demand from patients with primary care type problems. Other factors include: primary care

clinicians with less experience in primary care and greater interests in emergency medicine;

employment by the NHS Hospital Trust; financial and contractual models that favour

emergency department service provision; encouragement by local leaders to follow Trust

protocols and governance systems; and the primary care service located in the same area

as emergency department clinicians with full access to hospital investigations and seeing

unselected patients.

The "INSIDE integrated" service represented in Figure 3 is a small rural hospital with

a lack of demand for patients with primary care problems and a recruitment need for

emergency department clinicians. General practitioners with an interest in emergency

medicine, keen to develop their skills, are employed by the NHS Trust. They work in the

same area as the emergency department clinicians seeing a full range of undifferentiated

patients with full access to acute diagnostics; no formal streaming process is in operation.

They are supported by the emergency department consultants and expected to follow the

emergency department guidelines and governance systems. Here, constructs of function

align with an emergency medicine service.

Figure 3: The taxonomy applied to case site examples
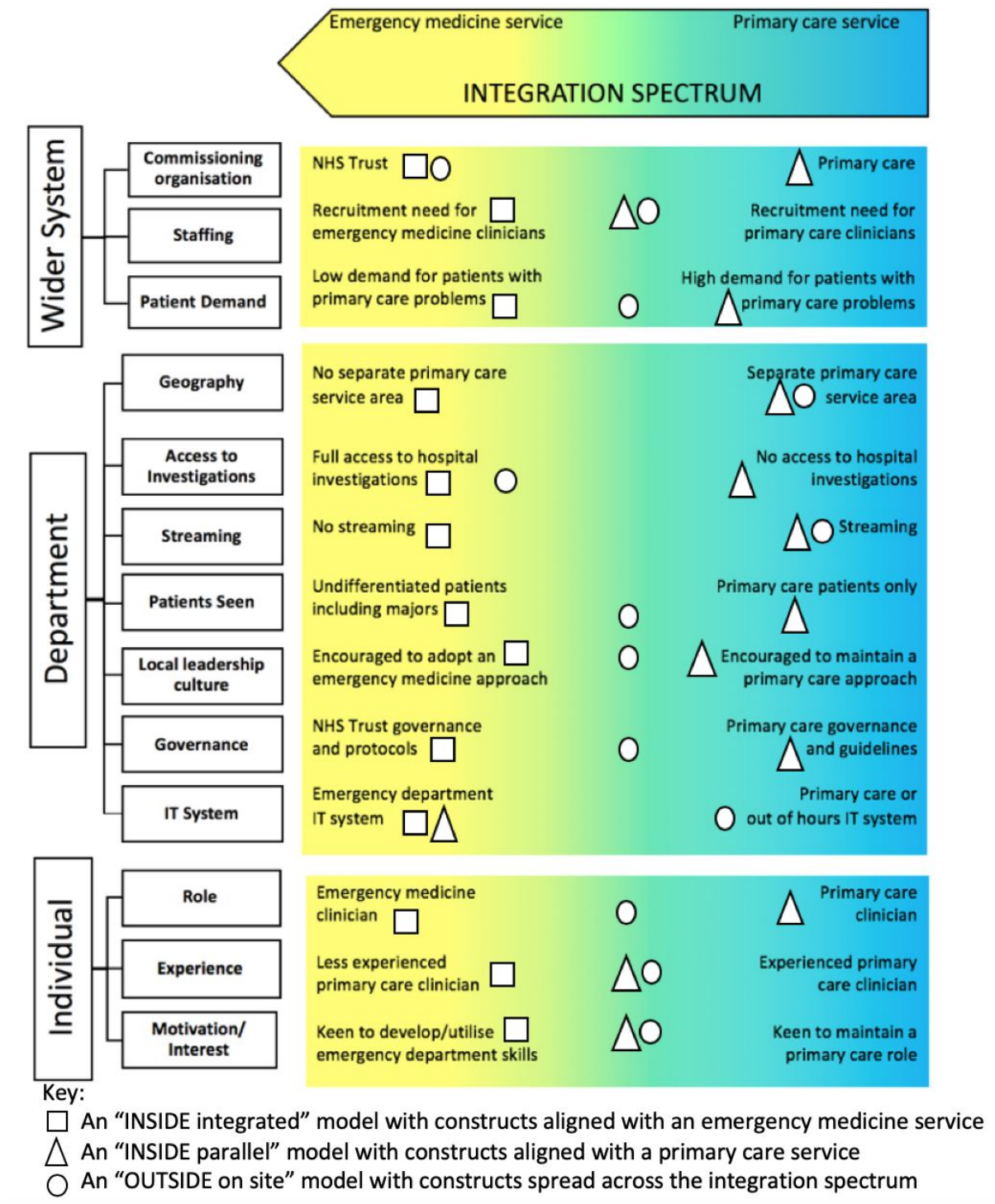
Primary care service

Constructs that encourage a primary care service include employment by a primary

care provider and primary care guidelines, governance and clinical record (IT) systems.

Other factors include: a high demand from patients with primary care type problems;

patients with primary care problems streamed directly to the primary care service; primary

care clinicians working in a separate area within the emergency department with limited

access to hospital investigations (or advised not to use); contractual and payment models

that incentivise the delivery of a primary care service; and local leadership encouraging the

practitioners to treat patients as they would in a primary care setting. An additional

influence is from the primary care clinicians themselves being keen to maintain primary care

roles.

The "INSIDE parallel" model represented in Figure 3 is in a large town. The primary

care service was previously a separate distinct service across the road but has now been

incorporated into a separate area within the emergency department. General practitioners

are commissioned by a primary care provider, encouraged not to use acute investigations

and maintain a primary care role. Patients with primary care problems are streamed to the

service; there was reported to be high demand. Here, constructs of function align with a

primary care service.

Variation across the integration spectrum

Some sites had a less consistent alignment of constructs of *function* with the service

model *form*. For example, the "OUTSIDE on site" model represented in Figure 3 is in an

urban area, 100 metres from the emergency department entrance. Primary care

practitioners are employed by the NHS Trust and emergency department advanced nurse

practitioners also staff the unit, following emergency department protocols and policy;

there was not reported to be any specific emergency medicine or primary care recruitment

issues. Patients with primary care problems and some minor injuries are streamed from the

emergency department; demand can fluctuate. Clinicians adopt a different approach to the

out-of-hours primary care practitioners that work out in the same area, utilising emergency

department acute investigations if needed. Here, constructs of function are spread across

the spectrum of integration.

Stakeholder feedback

The taxonomy was iterated following discussions with the co-applicant groups from

both studies in August and September 2018 (18 members from Cardiff, 17 from the

University of the West of England) and with the teams' steering committees in October

2018. It was presented, as applied to some case study sites, to 64 stakeholders (largely

commissioners and multi-disciplinary service providers) at a further event in November

2018. Discussions with commissioners and service providers at this stakeholder event

highlighted the complex adaptive (and evolving) interaction between primary care and

emergency department services. Stakeholders reported that the taxonomy and integration

spectrum was useful to identify whether constructs of *function* within their departments

were consistent with the *form* of service provided and whether some constructs may be

modifiable to enhance this alignment to achieve the intended aims. They envisaged that it

could also support discussions about the longevity and sustainability of their current

services and incremental benefit of changing the model.

Limitations

We recognise that while we have tried to capture the most common influences on

function, other contextual factors (e.g. rurality, other local services) may also influence how

models operate locally. We are not yet able to describe which constructs or combinations

of constructs have the strongest influence on function, and this may vary by location and context. We focussed on the UK where many services are in a state of change, making generalisation difficult. Further research is necessary to validate the taxonomy with additional sites and stakeholders and to determine whether the taxonomy is valid in other countries and healthcare systems.

A strength of this work is that the collaboration between two study teams meant that we could use multiple data sources to gain information about 62% of Type 1 emergency departments in England and Wales. Little information was available about the non-responders to assess response bias. However, there were similar application rates for capital bid funding in survey responders and non-responders suggesting a representative sample. Despite no formal consensus exercise, we had strong stakeholder participation including representatives from policy and commissioning groups, service leaders and providers, general practitioners and advanced nurse practitioners, public contributors and academic teams.

Summary

We used findings from a literature review, a national survey, staff interviews, other data sources and discussions with stakeholders to develop a taxonomy based on a conceptual spectrum of integration - identifying constructs that influence whether primary care service models in or alongside emergency departments *function* closer to an emergency medicine service or to usual primary care. We have also simplified the classification for the *forms* they adopt, INSIDE (integrated or parallel models) or OUTSIDE (on or off site) the emergency department, to provide a framework for further research and enable comparison of models and outcomes.

Consistency of terminology and classification of models in practice is essential for rigorous research to evaluate these service models for patient level health and experience outcomes, health economics, and wider system implications. Only then can the evidence base inform policy and national guidelines. The taxonomy will now be implemented in the two UK NIHR-funded studies, purposefully selecting study sites that exemplify the different model types, to evaluate their effectiveness and inform decision-making and future policy.(13,14)

Commissioners and service providers can consider these constructs when characterising and designing services, depending on the needs of the local population, and whether policy and clinical leads require a primary care or emergency medicine service.

3514 words

Contributors

Authors were involved in conception and planning of the work that led to the manuscript

(AC, ACS, FD, MC, TH, NS, SV, JB, AE) or acquisition, analysis and interpretation of the data

(ME, KM, JB), or both. Authors have approved the final submitted version of the manuscript.

Funding

This work was supported by the National Institute of Health Research (NIHR) Health services

and Delivery Research (HS&DR) Programme, project numbers 15/145/04 and 15/145/06.

Disclaimer

The views and opinions expressed herein are those of the authors and do not necessarily

reflect those of the Health Services and Delivery Research Programme, the NIHR, NHS or the

Department of Health.

Competing interests

JB is seconded part time to the post of National Clinical Director for Urgent Care at NHS

England.

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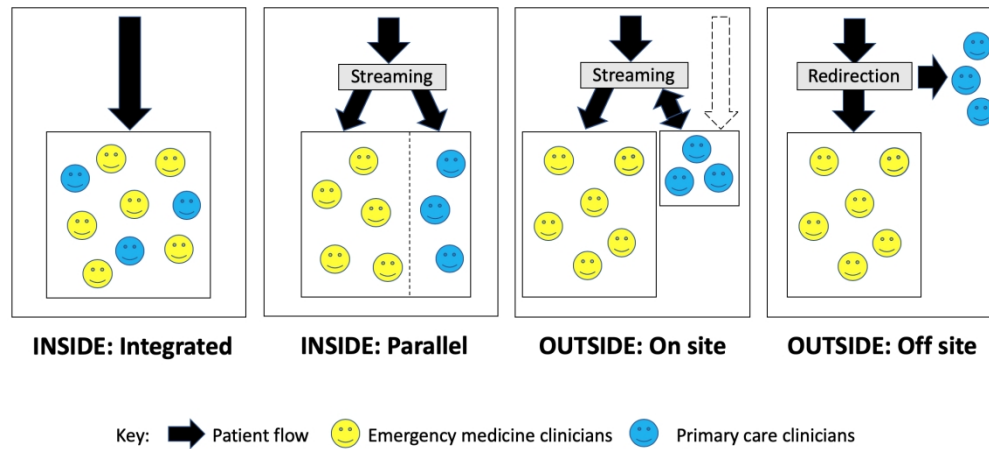
Figure 1: The FORM of primary care service models in or alongside emergency departments

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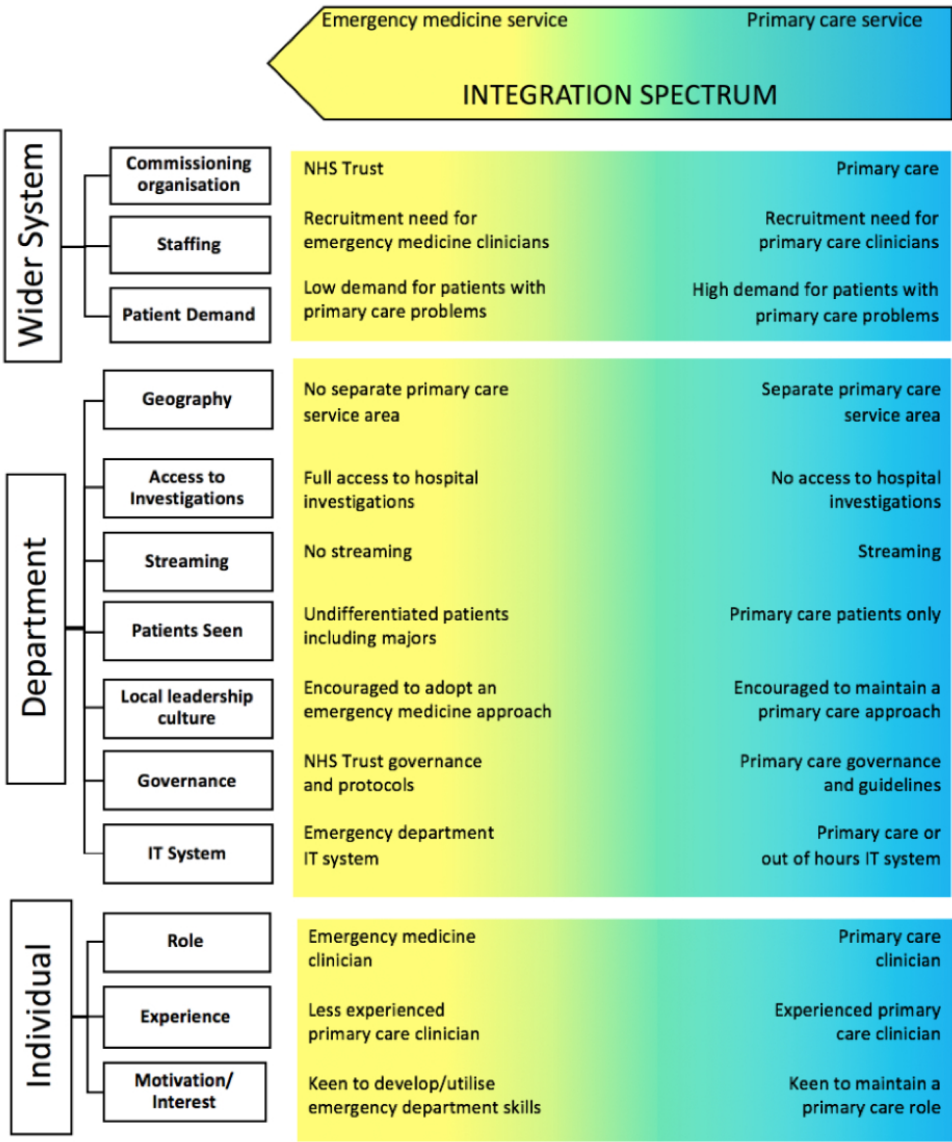
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Figure 2: Conceptual model identifying constructs that influence the FUNCTION of primary care services in or alongside emergency departments

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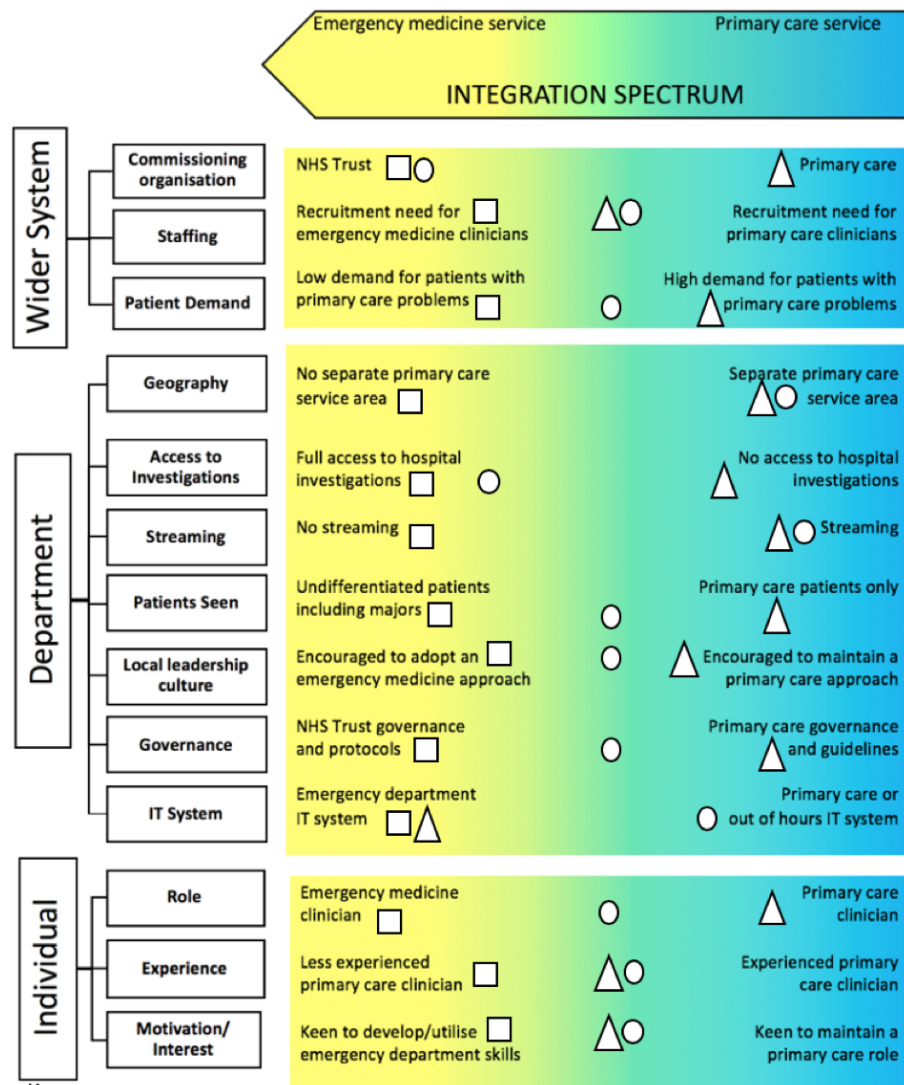
Figure 3: The taxonomy applied to case site examples

183x221mm (144 x 144 DPI)

GP✚ED

GPs in Emergency Departments

GPs in Emergency Departments Study

We are conducting a national study to evaluate the **clinical and cost effectiveness** of using GPs in or alongside Emergency Departments. We aim to address the key policy questions of where and how the greatest value can be delivered by using GPs in the ED setting. The study is funded by NIHR's Health Services and Delivery Research Programme.

We are inviting **Clinical Directors** of Type 1 EDs in England and Wales to complete this survey. We would like to hear from you **whether or not** there are GPs working at your ED. If you are the Clinical Director for more than one ED, please fill out a separate survey for **each** of your EDs.

The survey should take approximately 15 minutes to complete. We appreciate you taking the time to complete the survey and contributing to this research.

By completing this survey, I am consenting to take part in this study. I understand my data will be held securely and I have a right to withdraw from this study at any time. I understand that when this information is no longer required for this purpose, official Cardiff University procedure will be followed to dispose of my data ✱ *Required*

- ○ I agree
- ○ I disagree

Decline participation

You have indicated that you do not wish to complete this survey. If you have any further questions or comments about the study, please do not hesitate to contact the research team on **GP-EDStudy@cardiff.ac.uk**. Many thanks

○ End survey now

Contact Details

Name of Emergency Department (ED) ✱ *Required*

Your name ✱ *Required*

Job title

Contact telephone number

Please enter a valid phone number.

E-mail address

Please enter a valid email address.

GP Out-of-Hours Service

Do you currently have a GP Out-of-hours (OOH) service on your hospital site? ✳ *Required*

- ○ Yes
- ○ No

GP Out-of-Hours Service

Can ED staff (including receptionists, nurses, doctors) re-direct patients presenting to the emergency department to the GP OOH service? ✱ *Required*

○ Yes

○ No

Redirecting patients from ED to GP Out-of-Hours

How do staff re-direct patients to the GP OOH service?

☐ Staff make a GP OOH appointment for the patient

☐ Staff give patients the telephone number of GP OOH to make an appointment themselves

☐ Staff direct patients to the GP OOH, where patients can walk in and make an appointment themselves

☐ Other

If you selected Other, please specify:

Selecting patients to be seen by GP OOH

Who selects patients to be re-directed to the GP Out-of-Hours service? *(Select all that apply)*

☐ ED Receptionist

☐ ED nurse

☐ ED doctor

☐ GP working in the ED

☐ GP working in GP Out-of-hours self-selects

☐ Primary care nurse working in GP Out-of hours

☐ Paramedics select patients brought in by ambulance to be seen by GP OOH

☐ Other

If you selected Other, please specify:

When selecting patients, do they: *(select all that apply)*

☐ Use locally-developed inclusion / exclusion criteria

☐ Use a national tool e.g. Manchester triage system (please specify below)

☐ Use clinical judgement

☐ Other

If you selected Other, please specify:

If a national tool is used in selecting patients to be seen by GP OOH, please specify which one:

GP OOH - Patient volume

Approximately what proportion of patients presenting to the ED are **re-directed to the GP Out-of-Hours service**, during an average week?

- ○ Less than 1%
- ○ 2 - 4%
- ○ 5 - 7%
- ○ 8 - 10%
- ○ 11 - 15%
- ○ 16 - 20%
- ○ More than 20%
- ○ Don't know

GPs in ED

Do you currently have GPs working in any other way, within or alongside your Emergency Department? *We realise that GPs are being used in many different models - please select Yes if GPs are involved in delivering your acute care service **in any way,** apart from in GP OOH services.*

○ Yes

○ No

EDs without a GP service

Have you ever had GPs working in or alongside your ED in the past? ✱ *Required*

○ Yes

○ No

Previous GP service - Timing

If your ED has previously used GPs on multiple occasions in different ways, please answer these next questions about the **most recent** time GPs were used

When did they start? *(If exact dates not known, please give an estimate)*

Dates need to be in the format 'DD/MM/YYYY', for example 27/03/1980.

[   ] 🗓

(dd/mm/yyyy)

When did they stop? *(If exact dates not known, please give an estimate)*

Dates need to be in the format 'DD/MM/YYYY', for example 27/03/1980.

[   ] 🗓

(dd/mm/yyyy)

Don't know

○ I don't know when the GP service was running

Previous GP service - Location

Where were the GPs working? *(please select one)*

- ○ Within the ED alongside ED clinicians
- ○ Within the ED but as a separate unit
- ○ Adjacent to the ED but common entrance
- ○ Adjacent to the ED but separate entrance
- ○ On hospital site but separate from the ED
- ○ Don't know
- ○ Other

If you selected Other, please specify:

Previous GP Service - Model

Which patients did the GPs see? *(select all that apply)*

☐ Patients with primary care problems (cases that would frequently present to general practice, that all GPs would feel confident in treating)

☐ Low acuity patients that may have included minor trauma

☐ Only specific patient groups e.g paediatrics, frail elderly

☐ Undifferentiated patients that presented to ED (i.e. the same case mix as ED clinicians)

☐ Patients at the ED front-door, directing them to the most appropriate healthcare provider e.g. into the ED, back to their own GP, pharmacist, optician, dentist etc

☐ Patients at the ED front-door, directing them to the most appropriate area or clinician within the ED

☐ Don't know

☐ Other

If you selected Other, please specify:

Previous GP service - Funding

Which option best describes **provision** and **funding** of the GP service that used to be in place? *(please select one)*

○ The hospital trust provided the service

○ A private company provided the service, paid for by the CCG or Health Board

○ A local GP group provided the service, paid for by the CCG or Health Board

○ The same company as provided the local Out-of-Hours service provided the GP in ED service, paid for by the CCG or Health Board

○ Don't know

○ Other

If you selected Other, please specify, including who paid for the service:

Plans for a GP service

Are there any **plans** to implement a new model of using GPs in or alongside your ED **within the next 12 months**? ✳
Required

○ Yes

○ No

Planned GP service

When are you planning to implement the new GP service?

- ○ Within the next 3 months
- ○ Within the next 6 months
- ○ Within the next 9 months
- ○ Within the next 12 months

Is your ED making a 2017 capital bid following the chancellor's budget announcement in March?

- ○ Yes
- ○ No

Planned GP Service - Location

Where will the GPs work? *(please select one)*

- ○ Within the ED alongside ED clinicians
- ○ Within the ED but in a separate unit
- ○ Adjacent to the ED but common entrance
- ○ Adjacent to the ED but separate entrance
- ○ On hospital site but separate from the ED
- ○ Don't know
- ○ Other

If you selected Other, please specify:

Planned GP Service - Hours

What **hours** will GPs work in or alongside your ED? *(select all that apply)*

	Daytimes	Evenings	Nights
Weekdays	☐	☐	☐
Weekends	☐	☐	☐

Planned GP Service - Primary care workforce

What **sort of primary care clinicians** will be used within or alongside the ED? *(select all that apply)*

☐ Salaried GPs (fixed shifts per week)

☐ Sessional/locum GPs (ad-hoc shifts)

☐ Advanced nurse practitioners (fixed shifts)

☐ Advanced nurse practitioners (ad-hoc shifts)

☐ Other nurses (fixed shifts)

☐ Other nurses (ad-hoc shifts)

☐ Don't know

☐ Other

If you selected Other, please specify:

Planned GP Service - Model

Which patients will the GPs see? *(select all that apply)*

☐ Patients with primary care problems (cases that would frequently present to a general practice, that all GPs would feel confident in treating)

☐ Low acuity patients that may include minor trauma

☐ Only specific patient groups e.g. paediatrics, frail elderly

☐ Undifferentiated patients that present to ED (i.e. the same case mix as ED clinicians)

☐ Patients at the ED front-door, directing them to the most appropriate healthcare provider e.g. into the ED, back to their own GP, pharmacist, optician, dentist etc.

☐ Patients at the ED front-door, directing them to the most appropriate area or clinician within the ED

☐ Don't know

☐ Other

If you selected Other, please specify:

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Planned GP Service - Funding

Which option best describes **provision** and **funding** of the planned GP service? *(please select one)*

○ The hospital trust will provide the service

○ A private company will provide the service, paid for by the CCG or Health Board

○ A local GP group will provide the service, paid for by the CCG or Health Board

○ The same company as provides the local Out-of-Hours service will provide the service, paid for by the CCG or Health Board

○ Don't know

○ Other

If you selected Other, please specify, including who will pay for the service:

Setting up a GP service

What are the **barriers** to setting up a GP service in your ED? *(select all that apply)*

☐ Lack of funding
☐ Difficulty sourcing primary care staff
☐ Difficulty sourcing facilities
☐ Not perceived as beneficial
☐ Governance issues (quality improvement, accountability)
☐ Training concerns
☐ Other

If you selected Other, please specify:

What would better **enable** your ED to set up a GP service?

Marker Conditions

Can you think of any examples of presenting complaints or conditions which may be **managed better** by GPs compared to traditional ED staff?

➕ More info

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Can you think of any examples of presenting complaints or conditions which may be **managed less well** by GPs compared to traditional ED staff?

➕ More info

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Patient volume

Approximately how many patients presented to your Emergency Department in the last 12 months?

Aims of GP Service

What were the **aims** of introducing GPs in or alongside your ED? (*Select all that apply*)

☐ Reduce ED patient volume

☐ Reduce ED waiting times

☐ Reduce hospital admissions

☐ Better use of available ED resources

☐ Improve patient experience

☐ Improve quality of care given to certain types of cases / patients

☐ To 'educate' patients by sending them to the right place

☐ Cost saving

☐ National (or other) directive

☐ I don't know what the aims were

☐ Other

If you selected Other, please specify:

Aims of GP Service

Does the GP service achieve these aims **in practice**? *(only answer for those aims selected in the previous question)*

Please don't select more than 1 answer(s) per row.

	All of the time	Most of the time	Sometimes	Rarely	Never	Don't know
Reduce ED patient volume	☐	☐	☐	☐	☐	☐
Reduce ED waiting times	☐	☐	☐	☐	☐	☐
Reduce hospital admissions	☐	☐	☐	☐	☐	☐
Better use of available ED resources	☐	☐	☐	☐	☐	☐
Improve patient experience	☐	☐	☐	☐	☐	☐
Improve quality of care given to certain types of cases / patients	☐	☐	☐	☐	☐	☐
To 'educate' patients by sending them to the right place	☐	☐	☐	☐	☐	☐
Cost saving	☐	☐	☐	☐	☐	☐

Can you suggest any reasons why the aims were, or were not met?

Setting up your GP service

Approximately when did GPs **first start** working in or alongside your ED?

Dates need to be in the format 'DD/MM/YYYY', for example 27/03/1980.

[   ] 🗓

(dd/mm/yyyy)

What factors do you think **enabled** setting up of the GP service?

Were there any **barriers** to setting up in the GP service? If so, what were they?

Changes to your GP service

Have any **changes** been made to the model since it was first introduced?

- ○ Yes
- ○ No
- ○ Don't know

If Yes, when and how?

Are there any plans to implement a **new model** of using GPs in or alongside your ED within the next 12 months?

- ○ No
- ○ Yes, within 3 months
- ○ Yes, within 6 months
- ○ Yes, within 12 months

If Yes, what changes are planned? *(Please specify)*

Is your ED making a 2017 capital bid following the chancellor's budget announcement in March?

- ○ Yes
- ○ No

Current GP Service - Location

Where do the GPs work? *(Please select one)*

- ○ Within the ED alongside ED clinicians
- ○ Within the ED but in a separate unit
- ○ Adjacent to the ED but common entrance
- ○ Adjacent to the ED but separate entrance
- ○ On hospital site but separate from the ED
- ○ Other

If you selected Other, please specify:

Current GP Service - Hours

What **hours** do GPs work in or alongside your ED? *(Select all that apply)*

	Daytimes	Evenings	Nights
Weekdays	☐	☐	☐
Weekends	☐	☐	☐

In an average week, what is the **total aggregate time** GPs spend working in or alongside your ED?

➕ More info

- ○ Less than 9 hours
- ○ 9 - 16 hours
- ○ 17 - 24 hours
- ○ 25 - 32 hours
- ○ 33 - 40 hours
- ○ 41 - 48 hours
- ○ 49 - 56 hours
- ○ 57 - 64 hours
- ○ 65 - 72 hours
- ○ 73 - 80 hours
- ○ More than 80 hours
- ○ Don't know

Current GP Service - Primary care workforce

Approximately **how many GPs** work within or alongside your ED each week?

- ○ 1 - 3
- ○ 4 - 6
- ○ 7 - 9
- ○ 10 - 12
- ○ 13 - 15
- ○ More than 15
- ○ Don't know

Approximately **how many GPs** work **two or more shifts** each week?

- ○ 1 - 3
- ○ 4 - 6
- ○ 7 - 9
- ○ 10 - 12
- ○ 13 - 15
- ○ More than 15
- ○ Don't know

What **sort of primary care clinicians** are used within or alongside the ED? *(Select all that apply)*

- ☐ Salaried GPs (fixed shifts per week)
- ☐ Sessional/locum GPs (ad-hoc shifts)
- ☐ Advanced nurse practitioners (fixed shifts)
- ☐ Advanced nurse practitioners (ad-hoc shifts)
- ☐ Other nurses (fixed shifts)
- ☐ Other nurses (ad-hoc shifts)
- ☐ Other

If you selected Other, please specify:

Current GP Service - Model

Which patients do the GPs see? *(Select all that apply)*

☐ Patients with primary care problems (cases that would frequently present to a general practice, that all GPs would feel confident in treating)

☐ Low acuity patients that may include minor trauma

☐ Only specific patient groups e.g. paediatrics, frail elderly

☐ Undifferentiated patients that present to ED (i.e. the same case mix as ED clinicians)

☐ Patients at the ED front-door, directing them to the most appropriate healthcare provider e.g. into the ED, back to their own GP, pharmacist, optician, dentist etc.

☐ Patients at the ED front-door, directing them to the most appropriate area or clinician within the ED

☐ Other

If you selected Other, please specify:

Current GP Service - Selecting patients to be seen by a GP

Who selects patients to be seen by a GP? *(Select all that apply)*

- ☐ Patient self-refers, no triage system in place
- ☐ Receptionist
- ☐ ED nurse
- ☐ ED doctor
- ☐ GP self-selects
- ☐ Primary care nurse
- ☐ Telephone triage primary care service make appointment
- ☐ Paramedics select patients brought in by ambulance to the GP
- ☐ Other

If you selected Other, please specify:

When selecting patients, do they: *(Select all that apply)*

- ☐ Use locally-developed inclusion / exclusion criteria
- ☐ Use a national tool e.g. Manchester triage system (please specify below)
- ☐ Use clinical judgement
- ☐ Other

If you selected Other, please specify:

If a national tool is used in selecting patients to be seen by a GP, please specify which one:

Current GP Service - Patient volume

Appoximately how many patients **presented to your Emergency Department in the last 12 months**?

Approximately what **percentage of all patients** presenting to your ED are **seen by GPs or other primary care staff** (e.g. nurses)?

Don't know

○ I don't know what proportion of patients are seen by primary care staff

Current GP Service - GPs access to investigations

Which **investigations** do the GPs have access to? *(select all that apply)*

- ☐ Blood tests
- ☐ Other laboratory tests such as microscopy and culture
- ☐ ECGs
- ☐ Plain X-rays
- ☐ Other imaging including CT, MRI, ultrasound, contrast studies
- ☐ Near patient testing e.g. point of care CRP
- ☐ None of the above

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Marker Conditions

Can you think of any examples of presenting complaints or conditions which may be **managed better** by GPs compared to traditional ED staff?

➕ More info

1.	
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Can you think of any examples of presenting complaints or conditions which may be **managed less well** by GPs compared to traditional ED staff?

➕ More info

1.	
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Current GP Service - Funding

Which option best describes **provision** and **funding** of the GP service? *(Please select one)*

○ The hospital trust provides the service

○ A private company provides the service, paid for by the CCG or Health Board

○ A local GP group provides the service, paid for by the CCG or Health Board

○ The same company as provides the local Out-of-Hours service provides the GP in ED service, paid for by the CCG or Health Board

○ Don't know

○ Other

If you selected Other, please specify, including who paid for the service:

Current GP Service - Training and Governance

Which organisation has responsibility for **induction and training** for the GPs operating within or alongside the ED? *(Please select one)*

- ○ The hospital
- ○ The primary care provider organisation
- ○ An organisation that is a legal entity established for the purpose
- ○ Shared responsibility between the hospital and primary care provider organisation
- ○ Don't know
- ○ Other

If you selected Other, please specify:

Which organisation has responsibility for **clinical audit and governance** for GPs operating within or alongside the ED? *(Please select one)*

- ○ The hospital
- ○ The primary care provider organisation
- ○ An organisation that is a legal entity established for the purpose
- ○ Split accountability and governance arrangements between the hospital and primary care provider organisation
- ○ Don't know
- ○ Other

If you selected Other, please specify:

Co-located GP Services

If you have a co-located GP service and could not answer all of the questions about their service, please provide the name of the **GP Provider** so that we can contact them for further information

Contact name *Optional*

Job title

Address

Telephone number

Please enter a valid phone number.

E-mail address

Please enter a valid email address.

End of Survey

Thank you for taking the time to complete this survey.

We may get in touch to clarify any information if needed.

Any further comments are welcome

Thank you

Your contribution to this research is greatly appreciated

Key informant interview questions

Hospital: **Clinical Director:**

Survey respondent: **Telephone contact:**

GP-ED Model: Outside on site   **Date GPs started working in the department:**

Reason for selection:

1. **Department level – Demand/Flow**

Question
• In the survey you say that you have GPs working in a separate area next to the ED with a separate entrance, is that right?   • How is the place where the GPs work labelled? Is it labelled as an urgent care centre? It is known by the public that there are GPs working there?
• So an ED nurse selects patients to be seen by a GP using locally developed inclusion criteria, can you explain more about how that works?   • Is there a triage system or streaming system whereby the nurse can stream the patient to a GP or another member of staff? What are the options? Can you explain how the streaming works?   • And there is a telephone triage where primary care service can make an appointment, can you explain how that works to me?   • And patients can walk in and be seen?   • So patients who need urgent care could be seen by a GP, ANP, ENP or Paramedic ACP, is that right?
• How does having GPs in your department affect the flow of patients in the ED?   • Is there any exchange of patients from the GP area to the ED area and vice versa?
• You mentioned a home visiting service provided by advance care paramedics, can you explain more about how that works?
• The literature suggests that when people know that there are GPs working in the ED that they are more likely to go to the ED and so there is a provider induced demand.   • We think that provider induced demand might occur more where there are separate areas where it is know that GPs work from as opposed to EDs where the GPs are embedded into the ED. Do you think that happens here?
• In the survey you say that there is also a GP out of hours service located at the hospital, is this a separate service to the GP service next to the ED (or the same)?   • Were they previously separate and have now merged?   • You mentioned in the survey something about the contract for OOH being renewed to include a 24/7 GP presence, 24 hour walk in and adjacent to the ED. Can you explain more about that?

2. Department level - Meeting the aim of GP service

Question
• The literature suggests that GPs might admit less patients and do less investigations for some patients than a junior doctor for example. We have also found this talking to some other departments?   • Are the GPs able to admit patients?   • Why do you think that having GPs has not reduced hospital admissions in your department?   • You also said that most of the time there are improvements in quality of care given to certain types of cases   • You said that the GP service enables better use of available ED resources. Can you explain more about this?   • You also said that the GP service is never cost saving, why is this?

3. Department level- Changes in the service

Question
• So you said a change of contract helped with setting up the service. So the contract is now held by the acute trust   • What were the previous arrangements - previously contracts held separately for OOH and walk in by pseudo private and private providers   • You have said that your ED is making a capital bid, what does that involve?

4. Practitioner level questions

Question
• You say that in addition to primary care and low acuity type patients   • We notice that GPs have access to mainly tests that can be accessed in primary care and can order x-rays. Do patients who need X-rays remain in the urgent care centre or are they passed over to the ED?   • Another hospital has told us that the biggest advantages of having GPs working in the ED and not close by is the exchange of patients and that GPs and ED clinicians have the opportunity to seek advice from each other? Does this happen in your department?   • Are there any learning experiences for GPs and ED doctors from working in a department with an urgent care centre next to it?   • We know from what other hospitals have said that there are problems recruiting GPs with the appropriate skillset to work in the ED.   • Do the GPs working in the department there need to have a different skillset from GPs that might work in a local surgery? Might they see more, minor injuries or sicker patients?   • Do your junior doctors in the ED get to see patients with primary care problems?   • Do you think they get to see enough of these patients?   • Have there been any issues with recruiting and staffing with GPs? We know in some areas it has been difficult to recruit GPs to work in the ED and sometimes a specific skillset is needed which can be difficult to meet.

5. **Patient safety**

Question
• Do you think there are any positive or negative safety implications related with having GPs working in the ED?
• Some hospitals have reported rare cases of missed diagnoses from GPs seeing patients in the emergency department - are you aware of any such events? Were any changes made as a result to minimise future events?
• The literature suggests that having GPs working in the ED mean that the ED doctors can see more seriously unwell patients quicker, is that the case here?

6. **Wider system level**

Question
• Do you think that having GPs in the ED produces local competition for local jobs?
• If yes, then does that then make it difficult to for primary care to manage the demand in their service?
• Do you have any types of patients that visit the ED with primary care problems that might have problems accessing traditional primary care? For example, tourists, migrants, vulnerable groups

GPED Interview Guide

ED context:
• How many new adult patients does your ED see each year?
• How many new paediatric patients does your ED see each year?

What model of working with GPs/primary care operates in your ED currently (if any)?

Tell us about any GPED model you are planning to implement:
Can you tell us the background to that decision?
• What are you hoping to achieve
• What discussions took place
• What options were considered
• What major factors impacted on decision making

How is it different from the model you have in place now (is it clearly distinct)?
• Structural requirements for proposed model
• Organisational requirements for proposed model
• How will changes (if any) be achieved
• Timetable for change (date)

Do you think this model makes sense/is the right thing for your department?

Do you think staff value the proposed model of service provision?

What do you think the impact will be to your department on:
• Performance (4 hours, hospital admission rate)
• Staff (which staff in particular, in what ways)
• Division of labour
• Interaction between different professional groups
• Resources
• Consultations with patients

Will staff require additional training before implementation?
• Which staff and what training in planned/available

How will you judge the success/impact of the new mode of service delivery?
• What data might be available for research purposes
• Mechanism for staff feedback about the intervention

What are your thoughts on the decision to fund these models of service delivery?
• Does the idea of GPs in ED make sense in general

Any other comments to add about GPED?

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Data sources for information about Type 1 emergency departments and associated primary care services in England and Wales in 2017-18

Survey responses

- England 77/171 invitations
- Wales 6/13 invitations

Information from additional data sources (Staff interviews, NHS England, NHS Improvement etc)

- England 41 (5 additional sites)
- Wales 0

Total information on Type 1 Emergency Departments

- England and Wales 118/189 sites (62%)

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Survey response results for primary care service provision in or alongside emergency departments in England and Wales in 2017-18

Out-of-hours (OOH) service on the hospital site	n= 65/77, 84%
Associated with the emergency department • working alongside emergency clinicians in one service • adjacent to the department • within the department but in a separate unit • other or combination of models	n= 53/77, 69% • n=21/53, 40% • n=13/53, 24% • n=12/53, 23% • n=7/53, 13%
Patient groups seen by primary care services associated with emergency departments • primary care problems • low acuity problems including minor trauma • redirecting patients out of the department • undifferentiated patients, same case mix as emergency clinicians	• n=48/53, 91% • n=26/53, 49% • n=9/53, 17% • n=6/53, 12%

Supplementary data 1: Glossary of terms presented at the first stakeholder conference

Constructs		Options	Description of options
1. Location	Where the GP service is located in relation to the ED	Adjacent	GP service is located next to ED but has a separate entrance
		Co-located	GP service is located next to the ED and has a common entrance
		Embedded	GP service operates in a separate unit within the ED
		Integrated	GPs work in the ED alongside ED clinicians
2. Redirection	Appropriate patients are redirected **out of the ED**	Signposted	The patient is signposted to a walk-in GP service
		Appointment made	An in-hours GP appointment or GP OOH is made for the patient
		No appointment made	It is the patient's responsibility to make a GP appointment
	Staff member redirecting	Receptionist	No clinical training
		ED nurse	ED staff nurse
		ED nurse practitioner	To include emergency and advanced nurse practitioners
		ED clinician	To include ED consultants, staff grade and doctors in training
		GP	To include salaried and locum GPs
		Primary care nurse practitioner	To include primary care and out-of-hours nurse practitioners
		Primary care nurses	Primary care practice and out-of-hours nurses
3. Streaming	Patients are directed **into the ED** to the most appropriate healthcare provider	Emergency department	The patient has an urgent/ life threatening condition requiring ED level care
		Primary care	The patient's condition meets the criteria for the primary care stream
		Minor injuries	The patient has a minor injury
		See and treat	The patient is seen and treated by the Streamer
		No streaming system	ED Clinicians and GPs self-select their own patients

Supplementary data 1: Glossary of terms presented at the first stakeholder conference

	Staff member streaming	Receptionist	No clinical training
		ED nurse	ED staff nurse
		ED nurse practitioner	To include emergency and advanced nurse practitioners
		ED clinician	To include ED consultants, staff grade and doctors in training
		GP	To include salaried and locum GPs
		Primary care nurse practitioner	To include primary care and out-of-hours nurse practitioners
		Primary care nurse	Primary care practice and out-of-hours nurse
	Streaming/ triage guidance	Manchester triage system	A validated and widely used triage system
		Locally developed criteria	Locally developed or adapted criteria
		Other	Alternative guidance
4. GP role	The role the GP is expected to adopt in the ED setting	Traditional GP role	Managing patients using the same approach taken in the primary care setting – minimal use of acute investigations
		Extended GP role	The GP takes on additional tasks, which might not be part of routine general practice (e.g. seeing patients with minor injuries) or focusses on specific groups of patients in the ED (e.g. paediatrics, frail elderly)
		Gatekeeper role	Redirecting appropriate primary care type patients back into the community for treatment
		ED clinician role	The GP acts as 'another pair of hands' as another ED clinician
	Patients seen by the GP	Primary care type problems	A complaint that the average GP in the average GP surgery would be able to manage
		Non-urgent problems	Non-urgent problems including minor injury
		Special patient groups	Special groups of patients i.e. paediatrics, frail elderly
		Undifferentiated patients	Same case mix as ED clinicians
	GP access to investigations	GP tests only	Investigations found in the average GP surgery i.e. urine dipstix, ECG
		GP tests and plain X rays	GP tests and plain X rays
		Hospital tests	Acute blood tests and radiology i.e. Plain X rays and CT scans

Supplementary data 1: Glossary of terms presented at the first stakeholder conference

5. GP service provision	The organisation responsible for providing the GP service	Hospital	The hospital is providing the GP service, directly employs GPs
		Private GP provider	A private company provides the GP service
		Local GP group	A local GP group provides the GP service
	Clinicians employed	GPs	To include salaried and locum GPs
		Primary care nurse practitioners	To include primary care and out-of-hours nurse practitioners
		Primary care nurses	Primary care practice and out-of-hours nurses
	Employment basis	Fixed shifts	Staff who have a set number of hours/shifts on a regular basis
		Ad hoc shifts	Staff cover shifts based on the needs of the department
	Service coverage	7 days a week	Usual GP service coverage per week (actual coverage rather than planned)
		5-6 days a week	
		3-4 days a week	
		1-2 days a week	
	Shift pattern	Day shift	Usual shift pattern covered (can select multiple options)
		Evening shift	
		Night shift	
		Weekends	
	Percentage patients presenting to the ED seen by GPs	<5%	Approximate number of patients presenting to the ED seen by the GP service annually
		6-10%	
		11-30%	
		>31 %	

Supplementary data 1: Glossary of terms presented at the first stakeholder conference

6. Hospital demographics	Volume of patients attending the ED annually	Less than 50,000	
		51,000-100,000	
		101,000-150,000	
	Geographical description	Rural	Located outside large towns and cities
		Urban	Located in a large town or city
	Teaching hospital	Teaching	Affiliated with a medical school and has students
		Non-teaching	Not affiliated with a medical school and has no students

Key:

GP   General Practitioner
ED   Emergency Department
GP OOH   GP out-of-hours service