



## Short Communication

## Hospital intranet system is major barrier to paediatric clinical guideline use a cross-sectional single-centre survey of NHS doctors and nurses

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## ABSTRACT

Across clinical specialties, the use of clinical guidelines is integral to maintaining patient safety, reducing variation in clinical practice and optimising patient care. Identifying specific barriers to the effective use of guidelines within individual healthcare settings allows for the implementation of effective strategies to overcome them, and ultimately improvements in patient care. Here, we report a single-centre survey of paediatric doctors and nurses, which formed part of a quality improvement project within the Acute Paediatrics Department of an NHS district general hospital. The primary aim of the study was to explore the perspective and resource barriers paediatrics healthcare staff experience when using local and national clinical guidelines. The secondary aim of the study was to examine the impact of the Covid-19 pandemic on local and national clinical guideline use. We found that local and national guidelines are frequently used by paediatric doctors and nurses, and that they have positive perceptions of guidelines, overall. However, the NHS Trust's Intranet system was identified as a direct barrier to the use of local paediatric clinical guidelines. Staff throughout the UK in the NHS rely on their Intranet system in order to access local guidelines. Our results provide an impetus for interventions within this NHS Trust, and in the many other NHS Trusts with similar Intranet systems, to increase clinical guideline use and, ultimately, improve patient care.

Evidence-based medicine – the “conscientious, explicit, and judicious use of current best evidence (to) make decisions about the care of individual patients” [1] – is best observed in clinical practice through the development and use of clinical guidelines. The use of paediatric clinical guidelines (PCGs) is integral to maintaining patient safety, reducing variation in clinical practice, and ensuring that children receive optimal care. However, a growing body of literature has highlighted numerous barriers that impede the effective use of PCGs in clinical practice. Issues pertaining to organisational resources and healthcare providers' perceptions of clinical guidelines have been identified as key barriers to guideline usage [2–10]. Although these findings have been reproduced across a variety of clinical settings, highlighting the pervasiveness of this issue, Cabana et al.'s systematic review concluded that studies exploring barriers to clinical guideline use may not be applicable to other healthcare providers and institutions since “barriers in one setting may not be present in another” [2]. This emphasises the importance of exploring perceptions and barriers to

clinical guideline use in individual healthcare settings. Positive attitudes towards clinical practice guidelines is strongly associated with good clinical practice [9]. Therefore, identifying barriers allows for the development and implementation of effective strategies to overcome them and ultimately improve patient care.

The main objective of this single-centre, quality improvement study was to explore the perspective and resource barriers to PCG use experienced by paediatric doctors and nurses, with a secondary aim of examining the impact of the Covid-19 pandemic on PCG use.

A survey of doctors and nurses in the Acute Paediatrics Department, Lister Hospital, East and North Hertfordshire NHS Trust was conducted between 18<sup>th</sup> March and 7<sup>th</sup> May 2021. NHS ethics approval was not required as this project fell within the definition of service evaluation [11]. The questionnaire was developed following a targeted literature review [9,10,12–14] and feedback from the Trust's Lead for Clinical Governance, the department's Quality Manager and a Nurse Educator. The online survey was disseminated amongst staff. Anonymous

*Abbreviations:* NHS, National Health Service; PCG, paediatric clinical guideline; QR, quick response.

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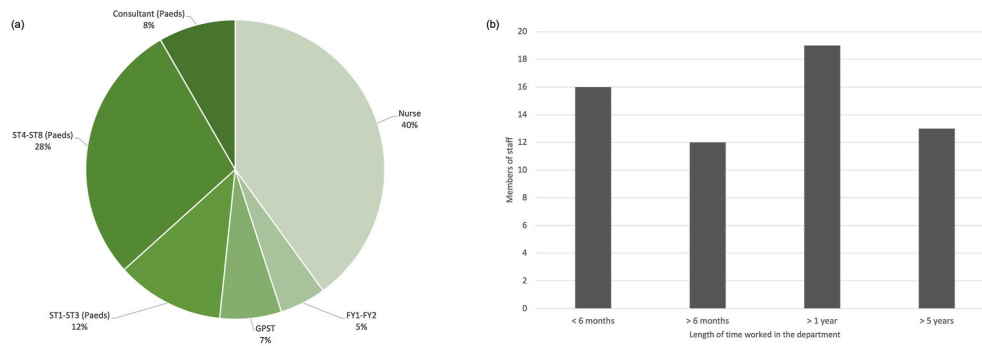
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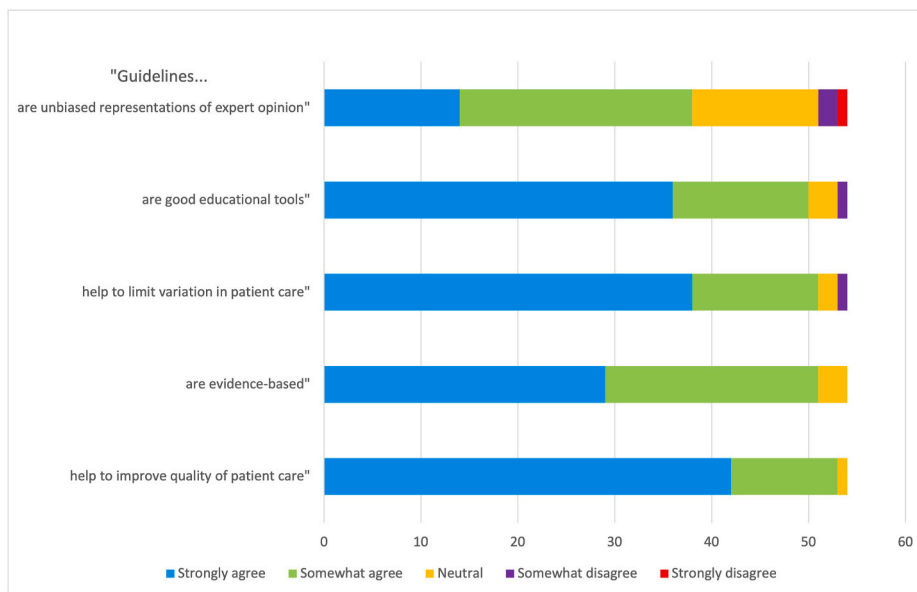
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**Fig. 1.** The demographics of survey responders. (a) A pie chart displaying the distribution of job types and stages of training among survey responders. (b) A bar chart showing how long the survey responders have worked in the department.



**Fig. 2.** A stacked bar chart displaying staff's perceptions on the role of guidelines in clinical care. Staff strongly agreed (blue), somewhat agreed (green), were neutral (yellow), somewhat disagreed (purple) or strongly agreed (red) with the following statements: "Guidelines are unbiased representations of expert opinion"; "Guidelines are good educational tools"; "Guidelines help to improve quality of patient care"; "Guidelines are evidence-based ways of approaching common medical problems"; and "Guidelines help to limit variation in patient care provided by different healthcare professionals". (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

responses, both quantitative and qualitative, were collected and analysed.

A total of 61 responses were received – one response from a non-clinical member of staff was excluded. Response rates of 82% and 27% from doctors and nurses, respectively, were received. The doctors' response rate was statistically significantly higher than the nurses' (27%;  $\chi^2 = 33$ ,  $p$ -value =  $9.1 \times 10^{-9}$ ). This reveals a possible selection bias, which may mean that the conclusions of this study are not fully representative of nurses' experiences. Almost half of all responses were from doctors who are currently in or have completed paediatrics specialty training (Fig. 1a). Over half of all survey responders had worked in the department for more than 1 year, indicating that results are representative of experiences within this department (Fig. 1b).

Local PCGs are frequently used by staff – 16 respondents use them at least once per day and a further 29 at least once per week. National PCGs are also used at a similar frequency – 44 respondents use them at least once per week. The most commonly used PCGs are those pertaining to diabetic ketoacidosis, asthma, seizures, limping child, fever and infectious diseases. This reflects common presentations to the Acute Paediatrics department.

Staff's perspectives on guidelines do not appear to be significant barriers to their clinical use. Most staff strongly agreed that guidelines improve quality of care, limit variation in patient care, are good educational tools, and are evidence-based (Fig. 2). There was notable variation in perceptions on whether guidelines are "unbiased

representations of expert opinion" (variance = 0.80), with some staff strongly disagreeing with this statement. While some find they limit their individual approach ( $n = 16$ ) or the treatment options ( $n = 7$ ), staff unanimously agreed that guidelines are essential.

However, most respondents experience resource barriers when attempting to use local PCGs. Local PCGs are most commonly accessed via the Trust intranet, yet difficulty finding ( $n = 30$ ) or a lack of time to find ( $n = 24$ ) local PCGs on the intranet were reported as major barriers to their clinical use. It has been well-documented that complexity of gaining access to guidelines limits overall use [2,4-6,13-18]. Robust improvements to the infrastructure of the Trust intranet are therefore warranted. In the interim, we designed a poster with QR-codes to the most commonly used national PCGs identified in this study and displayed several copies throughout the department. Healthcare staff can scan the QR-code with their mobile phone to view the most frequently accessed PCGs, thereby improving access and increasing their use until a sustainable solution is implemented.

Overall, the use of PCGs increased during the first year of the Covid-19 pandemic. Although the change in use of specific PCGs was not explored within this study, we found that generally the use of national PCGs increased almost twice as much as the use of local PCGs. Ultimately, the pandemic has required nationwide action, which has been facilitated by the development of new national guidelines and protocols [19]. Due to the rapidly fluctuating clinical situation, these have had to be frequently updated. This has resulted in healthcare professionals

needing to check that they are using the most up-to-date guideline more often, as shown herein.

This single-centre survey in an NHS district general hospital's acute paediatric department during the Covid-19 pandemic revealed that local and national PCGs are frequently used by paediatric doctors and nurses. Overall, staff had positive perceptions of PCGs, however resource barriers to PCG use persist. Namely, the NHS Trust's Intranet system was identified as being a direct barrier to the use of local PCGs. Staff throughout the UK in the NHS rely on their Intranet system in order to access local guidelines. Our results provide an impetus for interventions within this NHS Trust and, more widely, in the many other NHS Trusts throughout the UK with similar Intranet systems. Alleviating this major resource barrier will likely increase PCG use and, ultimately, improve patient safety and quality of care.

### Ethics approval

NHS ethics approval was not required as this project fell within the definition of service evaluation.

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### Registration of research studies

1. Name of the registry:
2. Unique Identifying number or registration ID:
3. Hyperlink to your specific registration (must be publicly accessible and will be checked):

### Guarantor

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### Disclaimer

Views expressed in the submitted article are the authors' own and not an official position of their institutions.

### Patient consent for publication

Not required.

### Author contributions

FK devised the study concept. LS and AK contributed to the literature review. All authors contributed to the study design, data collection and interpretation, and revised and approved the manuscript.

### Declaration of competing interest

The authors declare no potential conflict of interest.

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