

# Emerging art of doing less

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The specialty of paediatric emergency medicine has firmly established itself in the UK training curriculum over the last decade, transforming the way we provide urgent and emergency care to children and young people. As for any aspiring specialty, defining and practising evidence-based medicine is a key component to validating its existence. Recently, a new wave of evidence is changing clinical practices in paediatric emergency medicine. Several key examples stand out, with some of the leading evidence coming from a successful collaborative research network: the Paediatric Emergency Research in the UK and Ireland network. As a result of this new evidence, a trend is emerging that strays from previous teachings and advocates for the art of doing less.

First, fewer procedures and treatments. The Forearm Fracture Recovery in Children Evaluation trial established that treating buckle fractures of the distal radius with a bandage was equivalent to treating with splint immobilisation.<sup>1</sup> The Community-Acquired Pneumonia: A Randomised Controlled Trial showed that a shorter duration of antibiotics of 3 days was non-inferior to a longer course of antibiotics for the treatment of uncomplicated community-acquired pneumonia, following the belief that 'shorter is better' for most infections.<sup>2</sup> Studies concluded that low-flow oxygen is equivalent to non-invasive high-flow oxygen support in children with moderate or severe bronchiolitis, challenging the role of non-invasive ventilatory support as a much fancied mainstay of treatment in childhood bronchiolitis.<sup>3</sup> Updates in sepsis management are now advocating for restrictive fluid resuscitation especially in the absence of clinically evident shock.<sup>4</sup>

Second, fewer diagnostics. Diagnostic accuracy studies using observational data recently identified children with non-blanching rashes at very low risk of invasive bacterial illness, partly explained by changing epidemiology with expanding

vaccination schedules, justifying a more conservative management of some.<sup>5</sup> Similarly, studies showed young febrile infants <90 days at low risk of serious illness, foregoing the old adage of the blanket approach of an extensive diagnostic work-up with hospital admission and empirical antimicrobial treatment.<sup>6</sup> Additionally, a growing body of evidence is questioning the utility of sepsis screening tools in febrile children in emergency care settings, emphasising the importance of understanding target populations, prior probabilities and denominator data.<sup>7</sup>

All this has notably led to a change in clinical focus, with more and more groups of apparent low-risk patients being managed in a conservative, non-investigative manner. The test of time is often preferred over traditional laboratory tests or imaging. Safety netting of caregivers is viewed as an appropriate way of mitigating risk of deteriorating disease.

Managing risk is inextricably linked to frontline emergency medicine and acute paediatrics. It involves the recognition of patterns in complex constellations of presenting signs and symptoms in an undifferentiated population, and subsequently making a correct diagnosis and initiating treatment. This process needs probabilistic reasoning, awareness of true and perceived risks and balancing benefits and harms of any intervention. It also needs acknowledging a level of tolerability, that is, the willingness of a patient to accept a certain risk to secure potential benefits of an intervention, which are context and setting dependent.

Guidelines aid clinicians by risk stratifying patients based on clinical signs and symptoms as well as additional readily available biomarkers. In many instances these help limiting variation in care, and advise clinicians on avoiding unnecessary investigations, as exemplified by national guideline recommendations on avoiding CT scanning in low-risk head injuries, reducing administration of ineffective treatments, such as nebulised medication in children with bronchiolitis, and restrictive prescribing of antimicrobials in upper respiratory tract infections. This in turn reduces healthcare costs and improves health outcomes in line with prudent healthcare principles. However, guidelines are there to guide decisions, with

generally inherent risk averse recommendations slow to respond to new evidence, and may not always be followed in each individual patient. In addition, evidence in the literature needs appraising and adapting for local clinical environments, complicating the journey from evidence generation to local guideline inclusion. Independent practitioners will use their own experience, wisdom and diagnostic skills to further interpret evidence and apply guideline recommendations. Moreover, pragmatic decisions can prevail over the expectations of practising evidence-based medicine.

Providing best care should be guideline and clinician driven, and should involve a negotiation between care providers and their patients about the perceived benefits and harms of any intervention or treatment, taking into account their anxieties, expectations and demands. This requires the care provider to have in-depth understanding of the harms and benefits as well as the ability to convey these appropriately to allow for informed and shared decision-making.

So, with current teaching favouring 'doing less', is there a risk that the pendulum swings towards 'doing too little'? Several factors could enable this in a generalist specialty such as paediatric emergency medicine: an over-reliance on new less interventionalist evidence, a lack of exposure to and training opportunities for managing rare or serious conditions, inexperience with escalating the level of care for unwell patients and a biased tunnel vision of adjudicating only low-risk and minor illness. Overcrowding of emergency departments in high-income countries with 'worried well' certainly does not help with decision fatigue and accurate risk stratification by clinicians. There is a realistic risk that this, in turn, can lead to an increased number of missed diagnoses or mismanaged cases. Some of this is well illustrated by the long-established philosophies of Francis Bacon (1561–1626) and Karl Popper (1902–1994): some will be unable to conceive the existence of black swans if they are only accustomed to seeing white swans, whereas others might dispute that black swans are not actual swans but rather identify them as a type of goose. Altogether, this is exactly why the specialty of paediatric emergency medicine is becoming increasingly important with emphasis on frontline skilled and competent decision makers, and it needs progressing with clear clinical, academic and educational agendas. It is vital we build robust safety mechanisms to track changes in everyday management of children with

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acute illness and injuries, to monitor variation in care and to evaluate the impact of changed practice on the number of patients returning with a serious illness or suboptimal injury management. Reliable data should accompany anecdote: critically reviewing and learning from missed opportunities earlier in the patient's care pathway will be essential. Reasons for diverting from best care guideline recommendations, including parental informed decisions, should be documented diligently by the treating clinician.

There is also good reason to believe that what currently holds true might not be true in the future. In the case of the management of febrile children, increased global migration and climate change will introduce new diseases and unusual pathogens. Vaccination hesitancy might very well lead to a future increase in vaccine-preventable diseases. The recent rise in invasive group A streptococcal infections, a prime example of an unexpected change in local and national epidemiology.

Despite the benefits of preventing overdiagnosis and overtreatment, a mindset of cautious observation overtaking the investigative and interventionist approach could pose risks for children with severe illness or injuries.

Not to mention, a generation of doctors deskilled at urgent and emergency care procedures. The old teaching still has an important role to play, balanced against renewed insights, with the need of clinical educators and senior decision makers to preach their practice at any teaching opportunity.

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#### REFERENCES

- 1 Perry DC, Achten J, Knight R, *et al*. Immobilisation of torus fractures of the wrist in children (FORCE): a randomised controlled equivalence trial in the UK. *Lancet* 2022;400:39–47.
- 2 Bielicki JA, Stöhr W, Barratt S, *et al*. Effect of amoxicillin dose and treatment duration on the need for antibiotic re-treatment in children with community-acquired pneumonia. *JAMA* 2021;326:1713–24.
- 3 Kooiman L, Blankespoor F, Hofman R, *et al*. High-flow oxygen therapy in moderate to severe bronchiolitis: a randomised controlled trial. *Arch Dis Child* 2023;108:455–60.
- 4 Rhodes A, Evans LE, Alhazzani W, *et al*. Surviving sepsis campaign: international guidelines for management of sepsis and septic shock: 2016. *Intensive Care Med* 2017;43:304–77.
- 5 Waterfield T, Maney J-A, Fairley D, *et al*. Validating clinical practice guidelines for the management of children with non-blanching rashes in the UK (PIC): a prospective, multicentre cohort study. *Lancet Infect Dis* 2021;21:569–77.
- 6 Waterfield T, Lyttle MD, Munday C, *et al*. Validating clinical practice guidelines for the management of febrile infants presenting to the emergency department in the UK and Ireland. *Arch Dis Child* 2022;107:329–34.
- 7 Nijman RG, Jorgensen R, Levin M, *et al*. Management of children with fever at risk for pediatric sepsis: a prospective study in pediatric emergency care. *Front Pediatr* 2020;8:548154.