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How can we improve child health services?

The UK government's Health and Social Care Bill is unlikely to deliver the improvements in children's health services that are urgently needed. Useful lessons can be learnt from how other European countries deliver healthcare for children, say **Ingrid Wolfe and colleagues**

The care provided by UK children's health services is inferior in many regards to that in comparable European countries. Although there are many examples of good practice, health services too often provide poor outcomes and are seemingly planned around the needs of organisations rather than those of children, young people, and families. Service models are often inefficient and wasteful. Budget constraints and dramatic changes in the NHS make it more important than ever that children's healthcare is planned carefully and appropriately for their needs (box 1, see bmj.com). However, current plans insufficiently recognise children and young people's special requirements and fail adequately to acknowledge important recommendations made in Ian Kennedy's review of children's healthcare.¹

The Marmot review emphasises the importance of investment in children to reduce health inequalities at all ages.² Health services in the UK need to adapt both to the changing nature of the challenges of disease in children and to the opportunities to intervene. Other European countries offer helpful insights into ways of improving children's healthcare.

Quality of UK children's health services

There are no comprehensive assessments of the quality of healthcare for children in the UK nor systematic international comparisons. Therefore we must look elsewhere for clues about where to concentrate efforts. Direct and indirect evidence suggests problems in many areas. A confidential inquiry into child deaths found "identifiable failure in the child's direct care" in 26% of deaths, with potentially avoidable factors in a further 43%.³ Errors by staff with inadequate paediatric training or supervision were common. Thompson and colleagues found that half of children subsequently found to have meningococcal infection are sent home from the first consultation,⁴ and the failure or delay in diagnosis has cost over £20m (€24m; \$33m) in legal settlements in the past 12 years.⁵ Around 75% of children's asthma admissions could have been prevented with better primary care.⁶ Over a third of short stay admissions in infants are for minor illnesses that could have been managed in the community.⁷

Death rates from illnesses that rely heavily on first access services—for example, meningococcal disease, pneumonia, and asthma, are

higher in the UK than in Sweden, France, Italy, Germany, and the Netherlands (table 1).⁸ Survival rates are lower in the UK for some childhood cancers.⁹ These contribute to the UK's higher all cause childhood mortality compared with other European countries (fig 1). Although the incidence of many diseases is affected by socioeconomic conditions, deaths from the diseases cited here should be preventable by healthcare. If the UK health system performed as well as that of Sweden, the best performing country in our sample, as many as 1500 children might not die each year (table 1 and bmj.com).

Planned care for children with long term conditions also gives cause for concern, in both primary and secondary care, particularly as these conditions make increasingly important contributions to the overall burden of childhood disease (fig 2, see bmj.com). For example, only 3% of children with asthma have written plans to prevent and manage exacerbation,¹¹ so contact with the health service is often reactive. There are many preventable asthma admissions, and mortality from asthma in the UK is higher than in comparable European countries.⁸ Similarly,

Table 1 | Comparison of five year average mortality in childhood in European countries and excess deaths in UK (relative to comparator countries) according to method of first access to medical care, 2003-7⁸

	General practice		Primary care	Combined		
	UK	Netherlands	Italy	France	Sweden	Germany
All cause mortality (aged 1-14 years)						
Deaths/100 000 children	15.3	13.8	13.9	13.9	13.4	14.1
Annual No of excess deaths in UK*	—	757	649	709	903	602
Post-neonatal mortality (28 days to 1 year)						
Deaths per 1000 live births	1.6	1.0	1.1	1.3	0.9	1.4
Annual No of excess deaths in UK*	—	397	334	227	535	133
Standardised cause specific mortality (per 100 000 children aged 0 to 14 years)						
Meningococcal disease	0.47	0.24	0.13	0.14	0.09	0.25
Pneumonia	0.65	0.47	0.34	0.17	0.29	0.42
Asthma	0.27	0.07	0.01	0.06	0.01	0.05

*Shows how many fewer deaths occur in other countries (age adjusted) per year, compared with the UK.

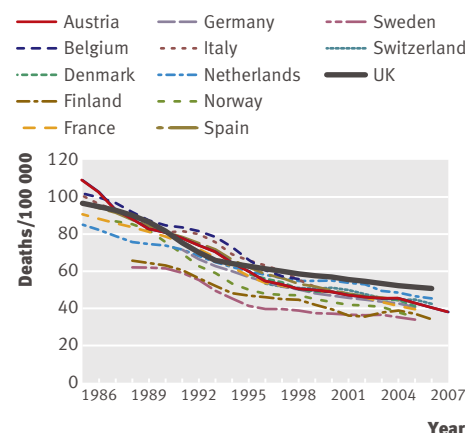


Fig 1 | All cause mortality in children aged 0-14 years in European countries (three year moving average)¹⁰

a national audit found that 82% of diabetic children had HbA1c concentrations above target levels, with nearly 9% of children having at least one episode of ketoacidosis in the past year and only 4% receiving care consistent with guidelines.¹² Poor diabetic control in children leads to more and earlier morbidity. The Healthcare Commission reports that 46% of acute trusts are weak in paediatric outpatient care, with services designed around acute illness rather than chronic disease.¹³

Explaining current patterns and problems of care

Inconsistent expertise and diagnostic resources

Access to the NHS generally is excellent and highly equitable compared with other countries.¹⁴ However, despite the multiplicity of service access points, paediatric expertise is inconsistent and diagnostic resources limited.¹⁵

Children represent about 25% of a general practice population but around 40% of its workload, young children being particularly frequent users.¹⁶ Many senior general practitioners have accumulated extensive experience of paediatrics, but fewer trainees now do a paediatric training post (in some parts of the country 40-50%¹⁷ compared with 60% in 1970¹⁸). Experience matters, especially in recognising rare but serious illnesses in children.

Many paediatricians report seeing increasing numbers of children with minor problems. A recent study suggests that 36% of referrals to paediatricians are potentially avoidable¹⁹ and this partly reflects lack of knowledge or confidence by general practitioners. Few trainee paediatricians spend any time in general practice,²⁰ however, and many feel poorly prepared for dealing with children who have minor illnesses but anxious parents and for the myriad behavioural problems and family and school difficulties often seen in hospital paediatric clinics.

Box 2 | Children's healthcare in Sweden and the Netherlands

Sweden

- Sweden has reduced fragmentation and costs by merging small hospitals and devising chains of care to ensure integration across community, primary, and specialist care²⁴
- Primary care was strengthened by forging close links to paediatrics
- GPs, who are trained in paediatrics, work closely with paediatricians, nurses, and other primary care professionals in community health centres to deliver acute and planned care for children and their families

Netherlands

- General practitioners provide the mainstay of primary care, acting as gatekeepers to paediatricians in secondary care
- Links between the two sectors are closer than in the UK, underpinned by "transmural" systems that bridge the gap between primary and secondary care²⁶
- A near universal youth health service provides a range of services to children from birth to 19 years, including health promotion risk factor and disease screening^{w13 w14}

Organisation of care: the gap between primary and secondary care

Perceived difficulties in accessing urgent services have led to a plurality of first access care services, but many do not have the resources to deliver safe urgent care for children.¹⁵ Many parents seek care directly in emergency departments; indeed one in three children is now admitted to hospital in their first year of life; 67% are short stay admissions, and 39% of these are for minor infections that could have been managed elsewhere.⁷

General practitioner trainees may not get any paediatric exposure beyond their generic general practitioner registrar year. Hospital based staff do not have the capacity or the most appropriate skills to deal with minor illness,^{1 7 w2-w4} These gaps in skills, confidence, and capacity between pri-

mary and secondary care create services that are overwhelmed with minor illness and acute conditions. Therefore children with chronic problems too often have to make do with disjointed care fitted in around acute services.^{13 w5-w7} Families report unsatisfactory care experiences, such as multiple appointments in different locations on different days, and inadequate coordination and communication between professionals. Efforts to integrate care across primary and secondary services are hampered by organisational, managerial, governance, and financial constraints.

Underlying many of these problems are the planning and commissioning of health services. Existing patterns of use, rather than the needs of children and families, drive service configuration, which determines workforce training, numbers, and distribution. This leads to a flawed system becoming self perpetuating. In addition, perverse incentives such as the payment by results system promote organisational and professional self interest and competition rather than cooperation and collaboration. This is compounded by the virtual absence of incentives to provide high quality care for children in contractual remuneration structures such as the general practice Quality and Outcomes Framework.

How does Europe differ?

Comparable European countries with better child health outcomes have several features that differ from the UK (table 2). Trainee primary care and specialist paediatricians in Europe follow a curriculum beginning with a three year "common trunk" emphasising primary care.²¹ All five countries examined in table 2 have substantially more doctors looking after children (per capita) than the UK,^{10 22 23} but there are also important organisational differences.

In Sweden, first access and some outpatient care for children is provided by general practitioners trained in paediatrics working closely with paediatricians and children's nurses in

Table 2 | Key aspects of European children's healthcare and workforce models

	General practice		Primary care paediatrics	Combined		
First access model	UK	Netherlands	Italy	France	Sweden	Germany
No of children aged 0 to 14 yr per paediatrician (2008) ^{10 22 23}	3928	2434	820	1668	1215	1079
No of children aged 0 to 14 yr per primary care doctor (2006-8*) ^{10 22 23}	266	341	154	112	286	193
Usual first contact professional	GP or clinic nurse	GP or youth health worker	Primary care paediatrician	GP or paediatrician	GP or paediatrician	Family physician who is either GP or paediatrician
Training of first contact professional	40% of GPs have ≤6 months' training in hospital paediatrics; other child health training in general practice	GPs not formally required to have postgraduate training in paediatrics	All health professionals treating children are specially trained in paediatrics	Postgraduate training for GPs must contain paediatrics or gynaecology	All GPs have postgraduate training in paediatrics	Most parents choose family physicians trained in paediatrics
Coordination between primary care and paediatrician	Separately managed organisations and funding	Co-location: jointly managed service with direct incentives to cooperate	Primary care practitioners are paediatricians	Separately organised, but patients have choice of first access	Co-located in children's health centres	Separately organised, but patients have choice of first access

*Data from last available year.

local health centres. Sweden also has developed “chains of care” based on agreements between providers, to counter fragmentation of services that impedes quality improvement.²⁴

The Netherlands has a general practice system similar to that in the UK²⁵ but operating within a “transmural” service designed to improve coordination between primary and specialist care. This service supports education, shared guidelines, and innovative payment systems.²⁶

In France there are incentives to register with a general practitioner, but parents can choose between office based paediatricians and general practitioners for young children, shifting to general practitioners later in childhood. Children with long term conditions typically attend a paediatrician who coordinates care with a network of professionals.²⁷

In Germany, most children have a primary care or family paediatrician. German patients have traditionally had a choice of direct access to a general practitioner or specialist. Recently however, patients have been incentivised to see general practitioners first but children retain direct access to paediatricians.

The Italian system is for primary care and specialist paediatricians to deliver all children’s medical care. However, they work in different organisations and have similar communication and coordination problems across primary and secondary care boundaries to the UK.

How can European insights benefit UK?

Our analysis suggests there are two broad areas to consider in improving UK care: the children’s healthcare team and the wider system. A better balance is needed between accessibility and expertise for first access and planned care for children. Sweden’s model of co-locating general practitioners and paediatricians in health centres may be feasible in the UK. This cooperative model would protect the traditional NHS values of family medicine but also improve first access care and community based coordinated multi-disciplinary services for children with long term conditions.

All the countries examined have more doctors looking after children; some have general practitioners with postgraduate training in paediatrics, many working closely with paediatricians. However, there is a need to reassess the training of all members of teams caring for children, ensuring that it supports new models of interprofessional care that bridge the primary-secondary care interface^{w9 w10} and focus on the needs of the child.^{w11} Professionals working with children need to progress beyond occasional discussion of referrals to collaboration on effective service development and professional training. The UK could achieve this by

enhancing specialist skills of general practitioners and generalist skills for paediatricians, with common curriculums and flexible training and accreditation systems.

Children’s needs must be taken account of at all levels of policy. Services should be planned around the child,^{w12} delivered by teams providing acute and long term care, incorporating health promotion and systems for early detection of risk factors and disease.

European examples show how services can be reorganised to support collaboration between professionals across organisational and professional boundaries. The Swedish multiprofessional health centres and chains of care system and Dutch transmural care models offer examples of how integrated services can address the fragmentation that currently impairs the efficiency and quality of children’s services in the UK (box 2). Table 3 (see bmj.com) suggests some ways in which quality and cost effectiveness of care could be improved in the UK.

Implications of NHS reform

We believe that the coalition government’s proposed changes to the NHS do not sufficiently account for children’s needs and may exacerbate the problems discussed in this paper. Problems with children’s first access care may not be solved by devolving commissioning to general practitioners (or private sector proxies), not least because of conflicts of interest²⁸ and because national planning and investment are required to tackle workforce shortages and to improve child health data to ensure services are planned and commissioned on the basis of health needs. Services for long term conditions risk being further fragmented by policies promoting competition between providers.²⁹ Moreover, the removal of the public health function from the NHS diminishes its ability to contribute to service planning and evaluation, and measures such as the government’s responsibility deal with food manufacturers seem unlikely to be able to constrain the powerful commercial forces already shaping

policy. Although Health and Wellbeing Boards are intended to achieve links between public health and commissioners, it is not clear how the needs of children will be prioritised.

These issues are especially worrying because of our current inability to measure quality of much of children’s healthcare. Most indicators of NHS quality relate only to adults, and although indicators of children’s healthcare quality have been used in other countries,³⁰ it is not clear how best they could be applied in the UK.

Recommendations

Our analysis leads us to recommend that comprehensive integrated teams in primary care settings should provide the majority of children’s healthcare. We believe such teams stand the best chance of delivering the right care, at the right time, in the right place, and by the right

people. The teams should comprise jointly trained general practitioners and paediatricians working with children’s nurses, health visitors, allied health professionals, and mental health professionals. This will require more doctors with paediatric training. General practitioners should have mandatory dedicated training in paediatrics, including management of acute illness and long term conditions. Training of paediatricians should include health promotion, behavioural paediatrics, and management of long term conditions out of hospital.

Integrated teams should fill the gap

between primary and secondary care by providing high quality urgent care for minor illness. This will prevent unnecessary referrals and admissions, and improve the detection of potentially serious illness. They will allow rapid on-site access to a more specialist opinion, thus providing a more convenient patient experience and an effective diagnostic safety net.^{w15} Integrated teams will be able to provide convenient high quality planned care for children and young people with long term conditions, as well as health promotion, disease prevention, and



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Around 75% of children’s asthma admissions could have been prevented with better primary care

health education for children, young people, and families.

Integrated services should be carefully coordinated with other providers in networks. Financial mechanisms that support collaboration, such as payments by clinical pathway rather than discrete episodes of care delivered by competing organisations, are needed. Child public health doctors should work closely with commissioners, within the NHS as well as education and local authorities, to ensure children's best interests are met and that services improve.

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Thoughts on doc2doc, BMJ Group's international medical community:

Financial austerity and health in Portugal

Portugal, buried in debt, has just followed in the steps of Greece and Ireland by becoming the next country to request financial assistance from the International Monetary Fund and the European Union.



But if you come to Lisbon today you won't notice any signs of a financial crisis. There are more luxury cars cruising the streets than ever, restaurants are always full, and I've just read in the news that overseas travel places are fully booked for the Easter holiday.

Most Portuguese doctors work as civil servants in the national health service and have also suffered the 5% to 10% wage cuts that were enforced in January on public sector staff.

But while many middle class people are making ends meet by cutting down on things like going out for dinner, those on the lower rungs of the social class ladder are bearing the brunt of this crisis. And that is because they will tend to be those who have low paid, unstable jobs and who are most vulnerable to being sacked. Unemployment has passed 11%, one of the highest rates in Europe, and the devastating consequences of unemployment and poverty for health are well known.

I've seen patients whose diabetes has significantly worsened because they could not afford their diabetes treatments anymore. It is equally disturbing to see patients who have just lost their jobs and come in with depressive symptoms, but this is becoming a daily occurrence.

And, according to the Portuguese Society of Paediatrics, the national health service may face increasing pressure from parents who will stop resorting so much to private consultations with paediatricians because of the need to tighten the family budget.

One thing that concerns me is that I've never heard so many colleagues contemplating a move to another country to work. Because there is still plenty of demand and full employment for doctors in Portugal, I suspect that most are just venting their spleen over the current situation, but I believe that many will try to go.

The moment that starts happening I will be seriously worried. In the meantime it is vital to foster access to care and provide quality care to the less fortunate and privileged.

Tiago Villanueva is a newly qualified GP who is based in Portugal and a former *BMJ* Clegg scholar and editor of the *Student BMJ*

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