Action on immunisation: no data, no action

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In the UK, the national immunisation programme is delivered free at point of care through the National Health Service (NHS) primary healthcare teams, led by general practitioners (GPs), and to a smaller and locally variable extent through child health clinics. Nearly all British children are vaccinated through the NHS, rather than privately. The UK national immunisation programme has been run by Child Health Systems which are in the process of being replaced as part of the National Programme for Information Technology (NPfIT) implemented by Connecting for Health, a Government agency. The Health Protection Agency (HPA) expressed concerns about the first system to be rolled out in August 2005. Since then, some of the problems which have resulted from the new systems have been well publicised, including the inability of systems to track children and calculate vaccination coverage.[1–3] In London, two systems, the Child Health Interim Application (CHIA) and the Electronic Care record system (RiO) have been implemented without a call and recall function, with clear implications for patient safety. The opportunity was lost to improve immunisation in London, the worst place for this to have happened because London's coverage is poor — and is the reason that the UK fails to meet its World Health Organization targets on immunisation.[4] The city stands in contrast to other European capitals such as Paris, and to other cities in the UK which face similar challenges in having large mobile and deprived populations. London's bad coverage has gone hand in hand with bad data, and bad data are toxic.[5]

GLOBAL PRIORITY OF IMMUNISATION

Immunisation keeps us all healthy. Its global priority is shown by the excess of $1.7 billion given to childhood vaccines by Bill and Melinda Gates in 1999–2007, mainly to the World Health Organization and Global Alliance for Vaccines and Immunization (GAVI), for a range of purposes from training of healthcare workers and leaders, developing new vaccines and delivery methods, through to increasing the vaccine coverage of children in the poorest countries.[6] The success of immunisation relies on having good vaccination coverage and timely vaccination, and these depend on having systems which call and remind parents. Reminder and recall systems alone increase coverage by up to 20%.[7 8] Without slick and efficient systems, vaccinations are given late which can leave children unprotected at their most vulnerable ages. This is equivalent to a fall in vaccine coverage for a disease such as pertussis, which kills unvaccinated children in the first few months of life.

The success of the UK immunisation programme has been built on computerised Child Health Systems pioneered in West Sussex in the 1960s[9] and, by the mid-1980s, deployed in most health districts.[10] These resulted in a real improvement in both immunisation programme monitoring and vaccine coverage in districts using computer-managed systems.[11] The systems were at the cutting edge of clinical information systems and a model for how an IT system can integrate several functions with benefits to all, supporting clinical decision-making at local level as well as ensuring local implementation and national monitoring of a major public health programme. Information from such systems is used operationally at local level to send out invitations for childhood immunisations, produce lists of children who do not attend for health visitors to follow up, and to produce general practice level coverage data for local action.[12] In England, Primary Care Trusts (PCTs) are the organisations responsible for commissioning local health services. PCTs produce and report coverage data to the HPA, which collects the mandatory data on behalf of the NHS Information Centre through the Cover of Vaccination Evaluated Rapidly (COVER) programme. The analysis of such data and its feedback to local level is critical for improving coverage. The World Health Organization recognises such systems to be integral to every vaccination programme, and a determinant of their success.[13]

Successful immunisation programmes are built on stability in the health service,[14] health visitor and practice nurse recruitment and retention, and good co-ordination by immunisation champions, supported at executive level and by public health leadership at local, regional and national levels. But without a call and recall system, the information required at local level to run the programme, and at regional, national and international level to direct strategy, is lost; this is the engine that drives the programme.

By the start of this millennium many of the Child Health Systems were antiquated and we hoped that they could be replaced by better systems which would integrate the accumulated wisdom of experience with the exponential advances in information technology. Connecting for Health presented the opportunity to start afresh.

What happened to child health information systems in London?

In 2005 Connecting for Health put an interim system, CHIA, into 10 PCTs,[15] and this is being replaced by the final product, RiO, which has been rolled out across the rest of London following its launch in 2006. The call and recall functionality was regarded as an optional extra by Connecting for Health. This seems to flow from the idea of patient choice, a central philosophy of Connecting for Health.[16] Here a worthy-sounding and politically fashionable idea collides with the clinical and public health reality of running a complex programme for the whole population. Leaving it up to parents to decide when their child is vaccinated undermines the national immunisation programme because immunisations are recommended and work best at specific ages.

Clinicians and public health specialists with expertise in the UK immunisation programme would hesitate to move to systems which either relied on family doctors to run an appointments system without setting any standard of care, or expected parents to know which vaccinations are due when. The vaccination programme starts so early, is crowded and changes about every 2 years, so it is already hard enough for health professionals to keep up with current recom-

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mendations. The omission of call and recall functionalities reflects the lack of clinical engagement identified in the review of NPfIT by the National Audit Office in 2006.[17]

To be fair, local variations to arrangements for call and recall have existed in parts of the UK. The Child Health System in some areas sends lists of children who require immunisations to some general practices which have agreed to make the appointments, or invites parents to make an appointment at their practice. Relying on GPs to send out appointments and chase up those who don't attend is not optimal. The extent to which GPs will follow up parents who do not attend is variable. Practices can now opt out of providing immunisation altogether. In some areas children continue to attend child health clinics for immunisation. In urban areas list inflation presents a challenge to providing accurate vaccination coverage.[18] Unregistered children are excluded from any GP-based system, and there is the potential in some areas to increase inequalities in health because of variations in the quality of primary care provision. Finally, Child Health Systems have a wide range of functions other than immunisation which may be compromised if the system is fragmented.

There have been numerous problems and unacceptable delays faced by those working on the Immunisation Programme in London. These may well have been exacerbated because Connecting for Health has responded to concerns and to media coverage by dismissing the possibility that there may be a problem for children in London.[19–21] The PCTs did not ignore the possible risk and undertook an audit of the period of disruption, under the leadership of the Government Office for London.

How has CFH responded?

In March 2007 the Public Accounts Committee produced their findings on the NPfIT.[22] Despite previous protests from the HPA, clinicians and others, Connecting for Health took the position that children are not placed at any increased risk as long as their immunisations are recorded in the parent-held red book and general practice records.[18–20] This runs counter to the evidence on the importance of call and recall systems, and of measuring coverage in order to achieve high enough levels to protect the population from outbreaks of infectious disease.[7] The first step in improving coverage is improving its measurement; for example, this led to an increase of 36% in coverage in the US state of Georgia.[5] This is a clinical safety issue for the national immunisation programme, and should be addressed with some of Connecting for Health's estimated budget of up to £20 billion.[22]

What has been the outcome?

For quarter after quarter through 2006, 2007 and 2008 and 2009, PCTs in London have either been unable to report immunisation coverage or published data with caveats about its accuracy.[23] The time spent dealing with the new systems has been an unmeasured opportunity cost for the NHS in London. Over the past 2 years the number of children potentially affected by the disruption to the programme has been accumulating by the thousands. There is no easy way to ensure that their needs will be met once they reach school age, but we are relying on immunisation to provide them with lifelong protection. To its credit, the London Assembly in 2006 called for evidence on immunisation, part of a growing momentum for action to improve the protection of London's children.[24] The likelihood of success is small unless the new Child Health Systems being rolled out across London have all the required functionality to support delivery of the immunisation programme, including the ability to track children as they move in, out and around London, to call and recall children for immunisation and to report vaccination coverage. These functions were integral to the old systems rolled out in the 1980s, and should be integral to the systems being rolled out two decades later.

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