GROWTH MONITORING –
THE BACKGROUND TO THE DEBATE
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A note by David Hall to explain the origins of the ongoing debate about monitoring growth in height as a routine procedure.

The 3rd edition of 'Health for All Children' was published in 1996, which means we were working on it in '94 and '95. At that time, taking due note of commentary by Tam Fry on behalf of the Child Growth Foundation, and the BSPED (British Society for Paediatric Endocrinology and Diabetes), we put forward proposals as to how children with poor growth could be identified. (See page 124, table 7.1 in the third edition). The crucial point is the one in italics, indicating that although we thought these proposals were very reasonable and that is why we had included them, we emphasised that they needed to be tested in practice.

Subsequently, Tam Fry organised an excellent workshop in Coventry which was well attended by people from a wide range of disciplines including the BSPED. We examined the evidence regarding the potential for detection of children with all the important causes of growth impairment or excessive growth. The literature showed that although there are many disorders which can present with growth failure, very few regularly do so and even fewer have growth failure as their main or only manifestation. That is why the discussion has focused on the two main targets, growth hormone deficiency and Turner's syndrome, because in these poor growth may be the only feature and the benefits of treatment are reasonably clear.

We then looked carefully at the issues of measurement error, in various settings and at a range of ages, and the implications of these for the ability to identify children with abnormal growth patterns. We also had a lengthy and fascinating discussion, led by Professor Tim Cole, about the benefits and pit-falls of incorporating parental height into the interpretation of measurements.

I think I was surprised as anyone at the outcome, but the mathematical evidence was very powerful. Quite simply, we ended with the conclusion that a height monitoring programme involving two or three measurements would fail to detect a significant number of true growth problems and would seriously over-detect normal children. Even that however might be acceptable if we had a simple way of sorting out the screen positive cases to determine those with pathology, but currently no such protocol exists. It is a relatively simple matter to exclude some of the important causes of short stature, but of course not growth hormone deficiency.

The work of Linda Voss is important, on the whole issue of understanding measurement, variation etc. She made the important point that if one has a large number of height measurements one can identify the abnormally growing child by establishing a trend. Of course, every paediatrician would accept that and clearly that would be the way to minimise the problem of measurement error that bedevils this subject, if one is trying to establish a universal monitoring argument. But this is hardly a practical proposition within the present structure of child health services and there is no reason to think that it could be delivered – it would need not only a big increase in healthcare resources in the prevention field (which

might be achievable) but also, and more important, a huge shift in parent behaviour as regards regular health checks.

There is a widespread misconception that prior to our intervention with 'Health for All Children', everything in the child health surveillance garden was lovely. It is true that until fairly recently in some countries with strong social traditions regarding child care, such as Sweden and Iceland, the vast majority of the population did indeed attend the child health clinics on all the specified occasions, but that has never been the case in the UK for as long as I have been in paediatrics. When I first took a very part time interest in community child health in Wandsworth, in 1979, I found that under 50% of three-year-olds attended for their review, and as always they were the wrong 50% - the inverse care law applied. That was long before I even thought of reviewing the literature on the subject.

The scanty amount of published evidence around the country shows that even in the best run services attendance has always dropped off dramatically after the second birthday. The prospect of getting even three measurements between two and five is very low, let alone enough measurements to truly establish a trend. If we thought that this was the most important issue in modern child health, and threw enough resources at it, we could probably get the attendance figures up to perhaps 80%. If we had established a case for regular surveillance for other reasons then we could easily add height monitoring, but so far all the evidence and argument runs against that model.

The case against height monitoring as the sole reason for regular health surveillance is based on the difficulties with the measurement procedure outlined above, which means there will always be substantial false positive and false negative rates, coupled with the rarity of the target conditions. When one looks at the incidence and prevalence of the target conditions, and then calculates the cost of the effort required, and finally the cost of each additional case detected and each additional centimetre of height attained, one gets a clearer idea of the difficulty one might have in presenting such an argument to those who control the budget.

My interpretation of these data is that a community-oriented surveillance approach, drawing on primary care teams and all the para-professionals in community services is the best way of detecting children with problems where families overlook them. The pursuit of a classic screening model, aiming for every child to have enough repeated height measurements to establish a trend, is a pipe dream. We need instead to invest in better training for GPs and other health care staff, and indeed for paediatricians – because some delays in diagnosis occur in general and community paediatric clinics owing to reluctance or hesitation in referring children for investigation.

Finally, as regards obesity, I need no persuading of the enormous importance of this subject. However, while I would agree entirely with the principle of monitoring BMI as a public health indicator, what we need is some evidence about what interventions to support.

David Hall