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Highlights from this issue

Nick Brown, *Editor-in-Chief*

Scene – 1953, provincial theatre: final act. Frisson of suspense ripples through audience. Main protagonist: detective inspector. 'Why haven't I realised before?'
Injured victim: 'Why didn't you just open your eyes'.
Adversary-doppelgänger: Placing musket (softly but dramatically) on the floor.
'So, you've finally foiled me. I thought that stating the obvious would throw you off the trail. Simple, but effective, knowing that you would doggedly follow instructions.'

GLOBAL CHILD HEALTH: SOLAR POWERED OXYGEN CONCENTRATORS

Pneumonia is the largest cause of child deaths in low-income countries, and though still falling, the global burden is still around 800 000 per year, despite a steady decline since the introduction of *S. pneumoniae* and *H. influenzae* vaccination. Beside antibiotic resistance, lack of availability of oxygen in rural hospitals results in one of the major modifiable contributory factors. Trevor Duke and colleagues evaluated a programme for improving reliable oxygen therapy using oxygen concentrators, pulse oximeters and sustainable solar power in 38 remote health facilities in Papua New Guinea consisting of a quality improvement spoke, identification of gaps, problem solving and corrective measures. The concentrators were powered by solar panels, affording 3 days' autonomy. The mortality incidence rate ratio in the post (2 to 4 years after the programme), pre (2–4 years before) postintervention was 0.60 (95 % CI 0.45 to 0.81), one of several favourable outcomes. The design (pre-post), of course, cannot account for other temporal changes but the beauty of the study is its simplicity: tapping into a natural resource (sunlight) that in PNG, like many peri-equatorial countries is constant and reliable. It is obvious that health facilities need a reliable source of power and oxygen to function, but as has been highlighted further in the COVID-19 pandemic, these can be scarce resources. ***See page 224***

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CYSTIC FIBROSIS (CF) SCREENING

The CF blood spot screening programme has been an outstanding success. Screening largely consists of an immunoreactive trypsin, which, if high, is followed by DNA testing for CF transmembrane related mutations (IRT-DNAin Wales for example) and,in some guidelines (the rest of the UK) a further IRT if before the back up sweattest). Most CF NBS false negative cases are due to an IRT concentration belowthe screening threshold but, and here's theso-obvious-that-we-didn't-think-of-it twist, that the accuracy of IRT resultsis dependent on the quality of the dried bloodspot (DBS) sample. IRTconcentrations in smaller DBS specimens(<8 mm diameter,<20 µL in volume) are upto 18% lower than those from correctly filled DBS specimen collection-devices (10 mm mm diameter,~50 µL volume). Iolo Doull andcolleagues tested contributors of false negative results in Wales over theperiod 996–2016 with robust numerator data. Over the era, of 673 952infants screened, 239 were diagnosed with CF (incidence 1:2,819). Thesensitivity of the programme was 0.96, and positive predictive value (as itshould be in a screening programme) was 0.478. Eighteen potential falsenegatives were identified, eight of which were excluded (screened outsideWales, complex comorbidities or no identified CFTR variants of the 10 remaining-false negatives, 9 (90 %) had a low DBS IRT and at least onecommon CFTR variant and thus should have received a sweat test under theprogramme. DBS cards were examined for five of the nine false negativecases—all were classified as small/insufficient or poor quality. This studyreaffirms the adage about 'even the obvious needing to be stated at least once'.To my mind, this raises two immediate questions: shouldn't the test taker (andthis is easier said than done) be retaking those cards in which the diameter ofthe spot suggests inadequate sample volume (an extra heel prick but look at thedividends) and should the lab be analysing these 'spots' at all? ***See page 253***

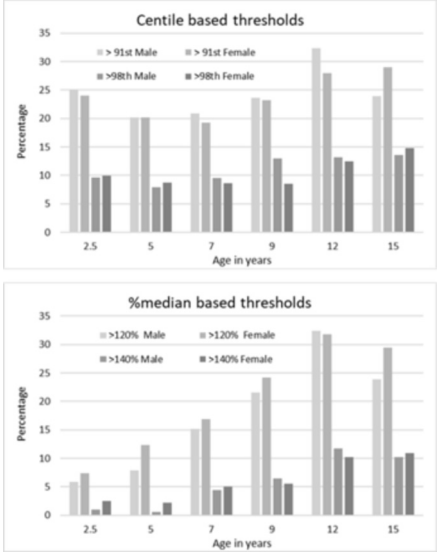

Figure 1 Data from the Gateshead millennium study.

OVERDIAGNOSIS OF PRE-SCHOOL OBESITY

"No examination is complete without complete centile chart with standard deviation scores' is the time-honoured shrill of the well-intentioned supervisor. No one would disagree in principle, but during an ongoing non-corona-related pandemic, obesity deserves re-examination. Why now? Because the 'epidemic of obesity' starting in infancy doesn't quite ring true given the tendency to regress to the mean in young children and the natural increase in standard deviation (obese to thin cut offs) with age. Charlotte Wright's persuasive Viewpoint argues the case for an alternative to the standard deviation centile +/-2 SD around the mean warning cut offs. The issues stem partly from the thresholds having on been extrapolated from adult high-risk standard deviations above the mean. This, though, doesn't quite make sense: the trajectories are hard to predict, and BMI z score starts to change much later in childhood. The case is presented for the mathematically more stable in preschool children, relation (by percentage) of the median. Data from the Gateshead Millennium study (figure 1) demonstrate the differences: at the age of 2.5 years, the proportion above the 91st centile was around 25% while using the alternative approach where this cut off corresponds to a 120% median the proportion is only 6% (boys) and 8% in girls. This isn't, of course, advocating for the abandonment of weight, height and BMI for the inherently more complicated, expensive and time consuming alternatives like skin fold thickness, bioimpedance, hydrogen labelled water or MR imaging for coelomic fat: these could be equally susceptible to the same issues with mean and SD. What is clear, though, is that one should understand the limitations of any tools (whether chart or lab test) is the context in which they should be interpreted. They are, after all, like everything in life, fallible. ***See page 212***
Detective Inspector: 'The clues were all there—how did I fail to see them?'
Curtain down-sustained applause.

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