Read with care: Diabetes-related amputation in the media

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Seventy diabetes-related amputations take place every day in England, but it is the regional variation in diabetes-related amputation rates that has captured the media's attention in recent weeks (see, for example, the BBC's coverage at bbc.in/hQ6L3X). The catalyst for this interest was the publication of *The NHS Atlas of Variation in Healthcare* (DaSilva and Gray, 2010a).

The authors of this document are RightCare, an NHS group tasked to "increase the value from the resources allocated [to health care] and directly address variations in spend, activity and outcomes" (DaSilva and Gray, 2010b). In partnership with a range of organisations, RightCare (DaSilva and Gray, 2010a) produced the Atlas, in which variations in quality of care and outcomes for a range of clinical areas are illustrated geographically in 34 maps of England.

One of the clinical areas covered by the Atlas is the incidence of major amputations among people with type 2 diabetes. Amputation rates (per 1000 people with type 2 diabetes) vary widely across the country with the difference between the "best" and "worst" regions being two-fold. The south-west of the country fairs worst, while the south-east fairs the best.

Sir Muir Gray, who led the Atlas research team and is the document's co-editor, said: "Most people in the health service are so focused on what they're doing, working so hard, they've got no idea if they are doing better or worse than someone else. The Atlas is now going, for the first time, to give them a clear idea of where they are."

I would suggest that clarity on major amputation rates for diabetic foot specialist teams and other diabetes care providers remain unclear. Interpretation of the data provided by the Atlas on diabetes-related major amputation rates must be accompanied by a clear understanding of what is being reported and its context.

Before drawing conclusions about the performance of one strategic health authority over another, I would encourage readers of the journal to cast an eye over the excellent article by Professor William Jeffcoate (2005), "The incidence of amputation in diabetes". Professor Jeffcoate reminds the reader that many factors underlie differences in amputation rates and should be considered before drawing comparisons between centres. Yet, beyond standardising for differences in age and sex, no information is provided by the Atlas' editors on data standardising between the regional populations. Factors that are likely to influence type 2 diabetes-related amputation rates include the prevalence of diabetes in the region, the number of specialist centres and the case mix (social, ethnic and disease severity), to name but a few.

Given the extensive scope of the Atlas, necessarily some information has been omitted and the reader is left to make a number of assumptions. A major omission is the editors' definition of a major amputation. Various centres define major amputation in different ways – midfoot, hindfoot, above the level of the ankle. All of these amputations can all be described as "major", although the

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implications of each type may be profoundly different. The editors' meaning of major amputation needs to be clarified.

Professor Jeffcoate also makes the important point in his 2005 article that the use of amputation as a marker of severe disease is problematic. Amputation is a treatment, and number of treatments is a poor indicator of both disease burden and quality of care. Rather, he says: "Quality of care of foot disease in diabetes can, and should, be best assessed in terms of survival, function/incapacity and wellbeing."

Of course, alongside the variation in amputation rates sits the well-known statistic that some 85% of diabetes-related amputations are preventable (International Diabetes Federation). The "options for action" to reduce diabetes-related amputation suggested by RightCare are, in fact, only one: to establish integrated multidisciplinary diabetic foot teams. The success of the diabetic foot team in Ipswich is highlighted.

While there is evidence that the presence of a multidisciplinary diabetic foot team can significantly reduce amputation rates (Cheer et al, 2009), membership of – and support for – these teams varies from region to region. Once the diabetic foot has moved into a complex diseased state the capacity to influence outcome is tempered; 5-year mortality rates for first neuropathic, neuroischaemic and ischaemic foot ulcer are 45%, 18% and 55%, respectively (Moulik et al, 2003), while mortality rates following diabetes-related amputation ranges from 39% to a staggering 80% at 5 years (Reiber, 2001).

The Atlas also suggests that nearly a quarter of people in England with type 2 diabetes in 2007/8 did not receive a "foot check". The content or outcome of a "foot check" is not defined, but the data may not be synonymous with diabetic foot risk stratification, which has been demonstrated to predict foot ulcer development and ulcer healing (Leese et al, 2007). This is in contrast to the situation north of the border where the Scottish Care Information-Diabetes Collaboration has captured foot risk stratification data in the preceding year for a mean of 61% of people with diabetes in Scotland, across a range of health boards (Stang, personal communication). Clearly, high-quality foot screening feeding into appropriate care pathways will impact on the incidence of major amputation.

The publication of the Atlas is to be welcomed and the criticism levelled in this editorial is not directed at the editors of the Atlas. This editorial's message is directed at those who quote data uncritically; bold statistics should always be viewed with caution.

The Atlas suggests that there are areas for improvement in diabetic foot care. However, the message for the media and commissioners is that investment in diabetic foot care services is essential if the morbidity, mortality and economic burden associated with the condition is to be reduced. The Atlas should not be used as a crude bludgeon against clinicians who dedicate their working lives to improve the care of others in regions that appear not to "measure up". ■

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