

# Developing Public Health Guidance - What are the Data Gaps?

## Review of the Gaps in the Evidence Identified by NICE in the UK

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### Introduction

Public health policy is understood to be a major determinant of overall population health.<sup>1</sup> However, developing public health guidance can be difficult due to the lack of sufficient evidence on the effectiveness and cost-effectiveness of possible interventions.

The National Institute for Health and Clinical Excellence (NICE) in the UK develop evidence-based public health guidance.<sup>2</sup> NICE consider and assess a broad scope of evidence before developing their guidance and they transparently publish the gaps in the evidence that they identify for each area. Public health areas covered by NICE policy include smoking cessation, reduction of alcohol consumption, promotion of physical activity, social and mental wellbeing and prevention of injury.

### Objectives

The objective of this study was to identify the major gaps in the evidence base that has been used to develop the NICE public health policy recommendations.

### Methods

As of December 2010, NICE had published a total of 31 guidance documents, each on a different area of public health. We grouped similar data gaps into categories and then extracted the information from each document into a grid. The data gaps were then compared between public health guidance topics.

### Results

The most commonly identified gaps in the evidence for the 31 areas of public health assessed by NICE are shown in Figure 1.

The most prevalent data gap, identified by 25 of the 31 guidance documents (Figure 1), was a lack of evidence on the effectiveness of public health interventions in specific subgroups of the population, particularly ethnic minorities, age subgroups and those from different socioeconomic backgrounds (Figure 2). In fact, the three areas of public health that identified the greatest number of data gaps were all specific to particular age groups of people: mental wellbeing of older people, substance misuse in young people and physical activity for children.

Figure 2: The subgroups for which there is a lack of evidence

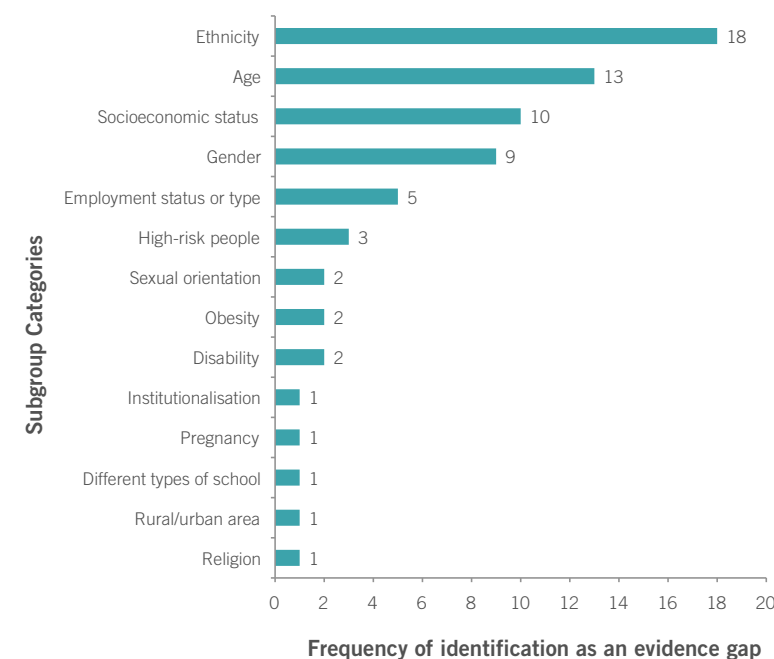
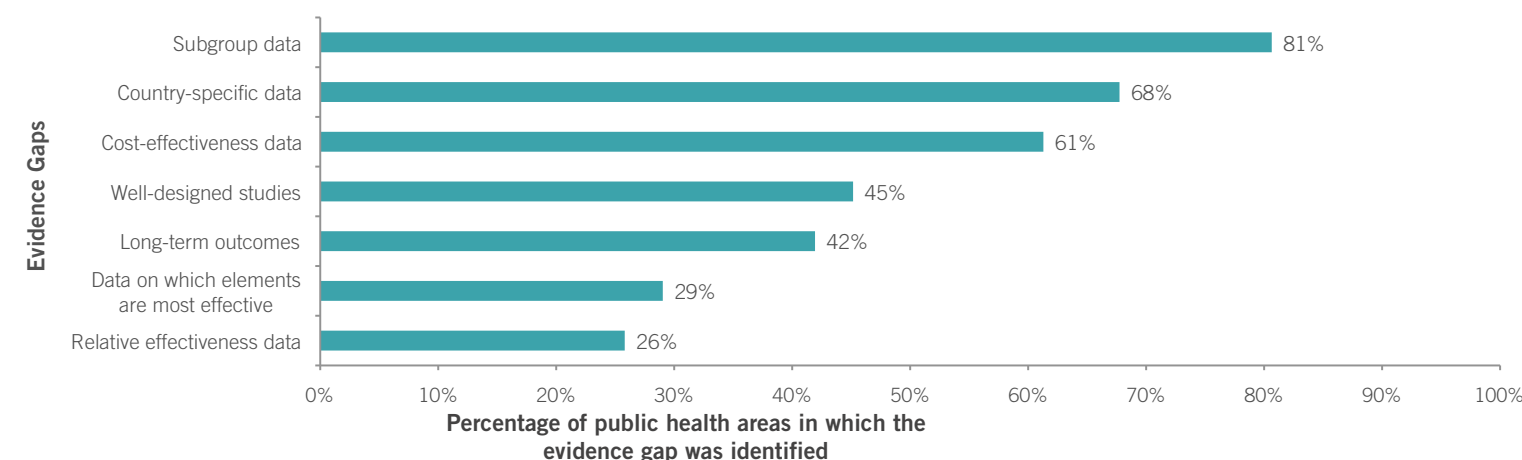


Figure 1: The most common evidence gaps in public health research



The second major gap in the evidence, discussed for 21 public health areas, was a lack of data specific to the country of interest (in this case, the UK).

A lack of cost-effectiveness evidence was reported by 19 documents as a barrier to developing public health guidance and 4 of these specifically noted the difficulty of determining quality-adjusted life years (QALYs) in the public health arena.

Further major data gaps included a lack of well-designed studies (14 documents), a lack of long-term outcomes (13), insufficient evaluation of which elements of an intervention make it effective (9) and a lack of evidence on the relative effectiveness of interventions (8).

Other gaps in the evidence identified in more than one public health area were a failure to link measured outcomes to health outcomes, poor consideration of the evidence in light of the wider legal and social context, and a lack of effectiveness data on the use of incentives and rewards.

### Discussion

#### Subgroup data

Subgroup data is hard to collect due to the minority nature of most of the subgroups. However, it is often these minorities who are most vulnerable and thus could benefit to a greater extent from public health interventions. Where possible, public health research should increase the collection of demographic characteristics such as ethnicity and age to allow post-hoc subgroup analyses or research should be specifically targeted to minority groups that are predicted to be most in need.

#### Lack of data specific to country of interest

A lack of country-specific data is a common problem, but can be overcome by using modelling techniques to adapt available data to the context of the country of interest. Alternatively, governments should prioritise public health issues specific to their country and target research to those areas in order to generate useful country-specific data.

#### Cost-effectiveness research

Research into the cost-effectiveness of public health interventions is unlikely to be privately funded, as it often is with health technologies, and it is therefore rare. Additionally, collection of the necessary data on the resource use and the overall effectiveness of the intervention is difficult. The problem of QALY measurement in the public health arena is due to the difficulty in estimating the extension of life across the population that is directly associated with the intervention, as well as the difficulty in measuring the change in quality of life following implementation of a public health intervention. New methods of QALY measurement need to be devised for the public health arena.

### Conclusion

- Public health policy guidance is produced despite the existence of major gaps in the evidence; the guidance could be more robust if these gaps were addressed. Research into public health interventions is therefore of paramount importance to the development of evidence-based guidelines.
- Researchers should focus efforts upon identifying particular subgroups in which interventions are particularly effective or ineffective and on generating country-specific data.
- Cost-effectiveness data are particularly lacking

### References

- <sup>1</sup> Raphael D, Bryant T. The state's role in promoting population health: Public health concerns in Canada, USA, UK, and Sweden. *Health Policy* 2006;78:39-55.
- <sup>2</sup> <http://guidance.nice.org.uk/Topic/PublicHealth>