Outcomes in paediatrics and child health

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Abstract

Health care strives to make a positive impact on patient's health. Historically outputs of health care were used to assess the impact of health care interventions and this article addresses the difference between outputs and outcomes. The NHS, Public Health and Children's Outcome Frameworks are described and a link between the Quality Standards developed by the National Institute for Health and Care Excellence and the Outcome Frameworks is made. Disease specific outcomes in asthma are described and the development of patient related outcome measures and patient related experience measures shows how these can bring the views of children and their families into service transformation. Some of the remaining methodological issues with outcome measures are described, as there is more to do to make these truly effective.

Keywords outcome frameworks; outcomes; outputs; patient related experience measures; patient related outcome measures

Introduction

The essence of health care is patients getting better; but measuring our impact is more complicated than it may seem at first sight. For many years' health care activities such as the number of operations done or the number of appointments provided in a service were used as a proxy for outcomes to measure the health service. This happened in large part because these activities were relatively easy to count and so data could inform a commissioning discussion and key performance indicators were straight forward to develop. However, activities are in essence outputs of health care and, while these quite rightly remain important elements of performance in health care systems, outputs are not sufficient for measuring our impact and gradually a focus on outcomes is emerging.

Outputs versus outcomes

How are outputs and outcomes different from each other? This is not always easy to answer, but a logic model is a good way to illustrate the difference (Figure 1). In business, outputs are what is produced; products, services, profits, and revenues. Whereas outcomes are the difference the outputs make or to put it another way, the reason why they are made. The outcome may be in creating fun, developing relationships or making a difference in some other way. In educational institutions, outputs are programs, training, and workshops; outcomes are new knowledge,

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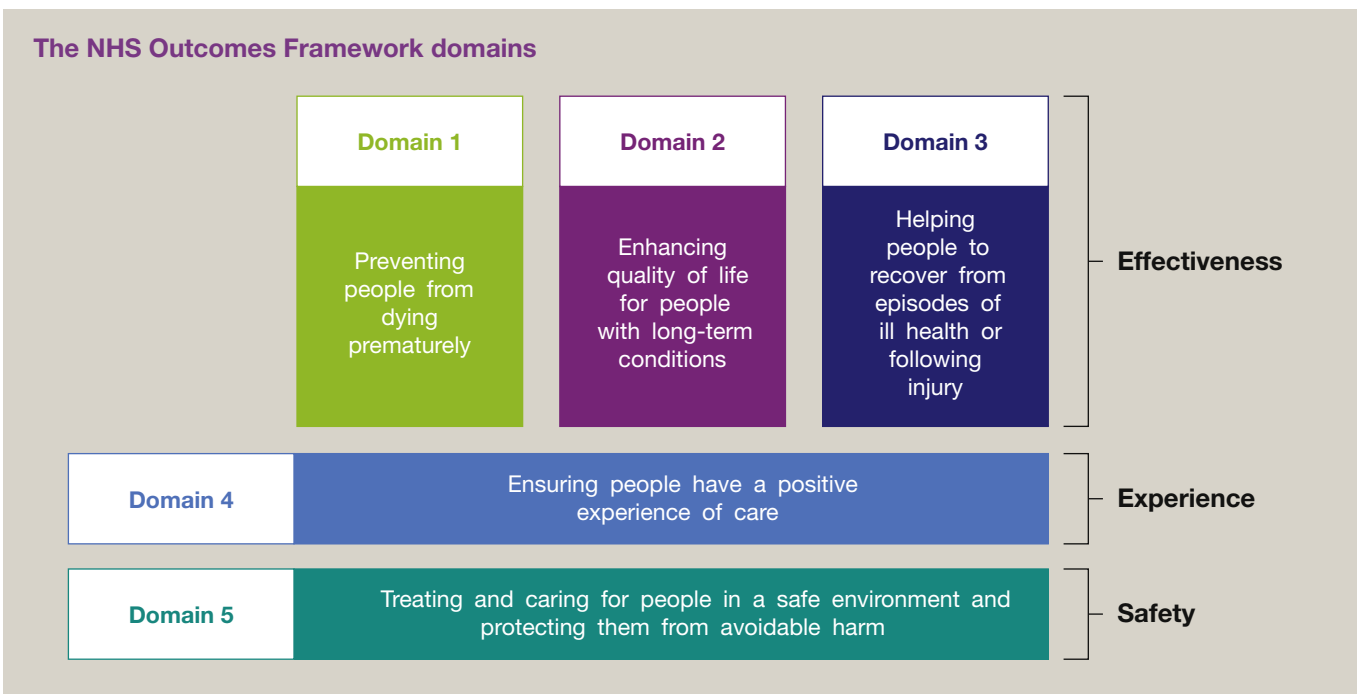new skills or changed behaviour. If a construction company's outputs are project designs and the miles of roads built, outcomes are the difference made by the outputs; better traffic flow, shorter travel times, and fewer accidents. Perhaps a specific example with more clinical relevance may help to drive home the difference. If the output (the product) is a car seat for babies, the outcome (the difference the product makes) is keeping children safe in cars.

Outcome frameworks in healthcare

The National Health Service has three outcome frameworks that are relevant to clinicians working with children; the NHS Outcome Framework, the Public Health Outcome Framework and the Children's and Young People's Health Outcomes Framework.

The NHS Outcome Framework has five domains (Figure 2). Domain 1 is *Preventing people from dying prematurely* and this has two improvement areas for children - Reducing Infant mortality and improving five year survival from all cancers in children. Domain 2 is *Enhancing quality of life for people with long-term conditions* and has an improvement area for children of reducing unplanned hospitalisation for asthma, diabetes and epilepsy in under 19 year olds. Domain 3 is *Helping people to recover from episodes of ill health or following injury* and has two improvement areas for children. The first is preventing lower respiratory tract infections (LRTI) in children from becoming serious measured by reducing emergency admissions for children with LRTI. The second is improving dental health with reductions in tooth extractions in secondary care for children under 10 years of age. Domain 4 is *Ensuring that people have a positive experience of care*. The area for children is Improving children and young people's experience of inpatient services. Domain 5 is *Treating and caring for people in a safe environment and protecting them from avoidable harm* with Improving the safety of maternity services by reducing the admission of full-term babies to neonatal care as an improvement area.

The Public Health Outcomes Framework (Figure 3) has also has five domains and has indicators about the proportion of children growing up in poverty (defined as household income of less that 60% of national median income), school readiness, pupil absence, 16−18 year olds not in education, employment or training and first time entrants into the youth justice system. There are indicators on the proportion of babies born with a low birth weight, breastfeeding rates and overweight and obesity rates in children aged 4−5 and 10−11 years old. The Public Health Outcomes Framework also includes indicators on Infant mortality, hospital admissions caused by unintentional and deliberate injuries, mental health of looked after children, smoking aged 15 years, immunisation uptake and the rates of dental decay age 5 years.

The National Child and Maternal Health Intelligence Network (ChiMat) developed a tool to present the indicators from the Public Health and NHS Outcomes Frameworks that are most relevant to the health and wellbeing of children and young people in an easily accessible way to support local decision making. The data can be seen at https://fingertips.phe.org.uk/profile/cyphof. ChiMat was established in response to the recommendations of the Children and Young People's Health

A logic model

Figure 1 A logic model.
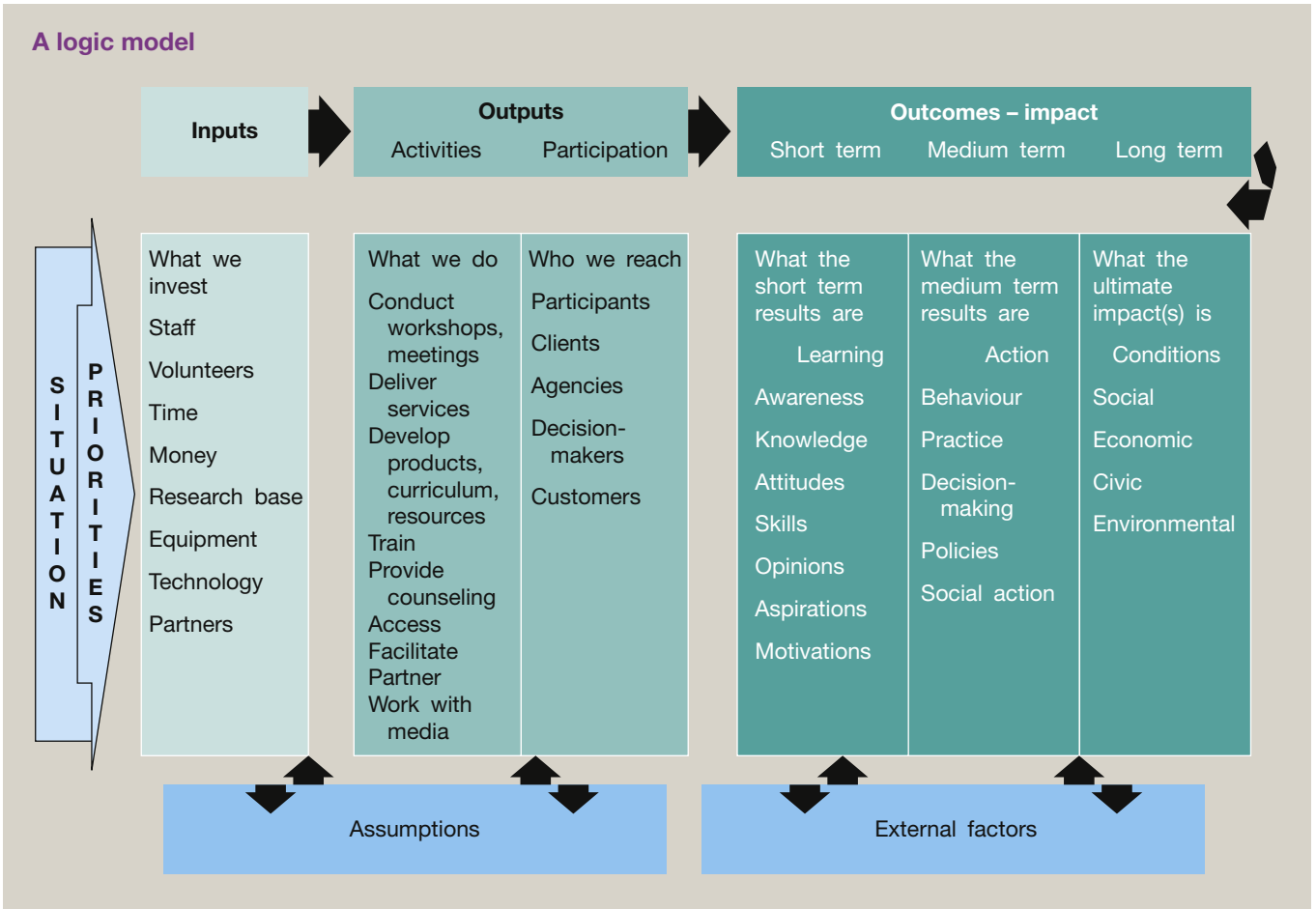
The NHS Outcomes Framework domains

Figure 2 The NHS Outcomes Framework domains.

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