Tailoring immunisation service delivery in a disadvantaged community in Australia; views of health providers and parents

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ABSTRACT

In 2014 the Australian immunisation target was raised from 90% to 95% of children to be fully immunised. A national priority is to identify geographic areas of low coverage and implement strategies to improve immunisation rates. Using The World Health Organization's Tailoring Immunization Programmes (TIP) Guidelines, the aim of this study was to identify areas of low immunisation coverage for children in the Hunter New England Local Health District, New South Wales, and to gain a deeper understanding of the factors influencing immunisation in those areas in order to develop tailored strategies for increasing immunisation coverage. Data from the Australian Immunisation Register was used to identify geographic areas of low coverage. Data from interviews and focus groups with parents and service providers were used to gain a deeper understanding of the factors influencing immunisation in those areas. The regional city of Maitland in New South Wales was identified as having a persistently high number and relatively high proportion of children not fully immunised (n = 427, 15.4% in 2016). Themes from 59 stakeholder interviews and focus groups included; (i) limited engagement with health services unless the need is urgent, (ii) multi-dimensional access barriers to immunisation services in Maitland, (iii) a flexible, supportive family centred, primary health care approach, utilising strong partnerships, is most likely to be effective in increasing childhood immunisation rates in Maitland, (iv) data can be used more effectively to inform service providers about trends and individual children not fully immunised. TIP guidelines proved useful for identifying areas of low coverage and providing an understanding of determining factors and the strategies most likely to be effective. Understanding the complex problems many parents face and the access barriers that contribute to low immunisation coverage is essential in developing appropriate solutions. Finding ways to support parents and remove those barriers can contribute to higher coverage. In Maitland, targeted outreach and home visiting has been implemented in consultation with community and health service representatives to ensure that the children from socially disadvantaged populations identified do not miss out on vaccination.

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1. Introduction

The World Health Organization's (WHO) recommended immunisation schedules have been widely implemented internationally, contributing to a significant decline in childhood morbidity and mortality [1]. However, there has been a re-emergence of measles,

pertussis and diphtheria in some European countries, associated with inadequate levels of immunisation [1]. WHO's Regional Office for Europe therefore developed the Guide to Tailoring Immunisation Programmes (TIP) [2], which draws on evidence from social psychology, the medical humanities, and behavioural science to assist service planners in identifying pockets of low coverage within a region and design strategies most likely to be effective in increasing immunisation within that target population. A recent evaluation of TIP found its strengths to be in community engagement, qualitative research methods, generating local insights and in the relationships established through the process [3].

In Australia the National Immunisation Program Schedule [4] determines the recommended childhood vaccines (see Fig. 1). In 2014 the Australian Chief Medical Officer raised the aspirational target from 90% to 95% of children to be fully immunised [5]. A stated national priority is to identify geographic areas of low coverage and implement strategies to improve immunisation rates [6]. Immunisation is provided largely by general practitioners (GPs) under Medicare, the national funding model for medical services that underpins primary care. Bulk billing occurs when GPs bill Medicare directly and accept the rebate as full payment with no out of pocket cost to the patient [7]. GPs may charge additional fees at their discretion. A recent systematic review found that these supplementary payments reduced primary care utilisation by vulnerable groups, including individuals with low income and those in particular need of care [8]. The Australian Government introduced an amendment bill in 2016 entitled 'No Jab, No Pay' which tightened existing requirements that children be fully immunised in order to qualify for certain family assistance payments [9].

In the region covered by the Hunter New England and Central Coast Primary Health Network (PHN), immunisation coverage rates were above the national average for children aged one (93.1% vs 91.3%), two (91.3% vs 89.2%) and five years (94.8% vs 92.2%). Despite these achievements the new target of 95% remained elusive.

To tailor vaccination programs, TIP uses a step-by-step approach including a formative phase and a planning phase (see Fig. 2). We focused on the formative phase which involved using available data and stakeholder interviews to identify the problem and gain a clear understanding of the target groups (both children and service providers). Using TIP guidelines, the aim of this study

was to identify areas of low immunisation coverage in children aged five years and under in the Hunter New England Local Health District (HNELHD) and gain a deeper understanding of the factors influencing immunisation in those areas. The results will be used in the planning phase, to inform the development and implementation of evidence based strategies.

2. Materials and methods

Both quantitative and qualitative methods were used. To identify pockets of low immunisation coverage, data from the Australian Immunisation Register (AIR) were used. The register provides demograhpic data for children that are at least 30 days overdue for specified vaccines. State health authorities grant AIR access to public health services, GPs and other accredited immunisers, who are then able to generate relevant reports [10].

Initially, 2014 data from resident HNELHD children aged one, two and five years of age were used to determine the numbers not fully immunised according to SA2 locations (stastical areas of approximately 10,000 residents). Australian Bureau of Statistics 2011 Census population data were used to determine rates [11]. This process identified the SA2 areas [12] of Maitland East and Maitland West as having the highest number of under-vaccinated children (described in Results). Maitland is a growing regional city in NSW. In 2016 the population was 79,340 with Aboriginal and/or Torres Strait Islander people accounting for 5.1% of the total. Its economy relies on manufacturing, healthcare services and retail trade. In 2011, overall unemployment was 5.0%, below the national rate of 5.6% [13]. Maitland is relatively socio-economically disad-

Age	Vaccine
Birth	• Hepatitis B
2 months	• Hepatitis B, diphtheria, tetanus, acellular pertussis (whooping cough), Haemophilus influenzae type b, inactivated poliomyelitis (polio) (hepB-DTPa-Hib-IPV) • Pneumococcal conjugate (13vPCV) • Rotavirus
4 months	• Hepatitis B, diphtheria, tetanus, acellular pertussis (whooping cough), Haemophilus influenzae type b, inactivated poliomyelitis (polio) (hepB-DTPa-Hib-IPV) • Pneumococcal conjugate (13vPCV) • Rotavirus
6 months	• Hepatitis B, diphtheria, tetanus, acellular pertussis (whooping cough), Haemophilus influenzae type b, inactivated poliomyelitis (polio) (hepB-DTPa-Hib-IPV) • Pneumococcal conjugate (13vPCV) • Rotavirus b
12 months	• *Haemophilus influenzae* type b and meningococcal C (Hib-MenC) • Measles, mumps and rubella (MMR)
18 months	• Diphtheria, tetanus, acellular pertussis (whooping cough) • Measles, mumps, rubella and varicella (chickenpox) (MMRV)
4 years	• Diphtheria, tetanus, acellular pertussis (whooping cough) and inactivated poliomyelitis (polio) (DTPa-IPV)

Fig. 1. Australian National Immunisation Program Schedule from November 2016.