

doi:10.1111/jpc.12804

REVIEW ARTICLE

Closing the gaps in child health in the Pacific: An achievable goal in the next 20 years

Trevor Duke, 1,2,3 Joseph H Kado, 4 James Auto, 5 James Amini 6 and Katherine Gilbert 7

¹Centre for International Child Health, Department of Paediatrics, University of Melbourne, ²Royal Children's Hospital, Murdoch Childrens Research Institute, ⁷Centre for Health Economics, Monash University, Melbourne, Victoria, Australia, ³School of Medicine and Health Science, University of Papua New Guinea, ⁶Department of Paediatrics, Port Moresby General Hospital, Port Moresby, ⁴Department of Paediatrics, Colonial War Memorial Hospital, Suva, and ⁵Medical School, University of Fiji, Lautoka, Fiji

Abstract: It is not inconceivable that by 2035 the substantial gaps in child health across the Pacific can close significantly. Currently, Australia and New Zealand have child mortality rates of 5 and 6 per 1000 live births, respectively, while Pacific island developing nations have under 5 mortality rates ranging from 13 to 16 (Vanuatu, Fiji and Tonga) to 47 and 58 per 1000 live births (Kiribati and Papua New Guinea, respectively). However, these Pacific child mortality rates are falling, by an average of 1.4% per year since 1990, and more rapidly (1.9% per year) since 2000. Based on progress elsewhere, there is a need to (i) define the specific things needed to close the gaps in child health; (ii) be far more ambitious and hopeful than ever before; and (iii) form a new regional compact based on solidarity and interdependence.

Key words: child mortality; International Child Health; Millennium Development Goals; neonatal; Pacific; public health.

Introduction

Since 2000, scientists and authors from the Bellagio group have written extensively on the global situation for child health, focusing on 42 countries as examples of needs, challenges, evidence of effective interventions and progress.¹⁻³ These are all large countries in Africa and Asia, none from the Pacific. There has been a neglect of the Pacific in the global literature on child survival and Millennium Development Goal No. 4 (MDG4) targets. Furthermore, much of the literature on child survival since 2000 has focused primarily on technical interventions, those proven to work in controlled trials and considered possible to reach universal scale in these poorest 42 countries. There has been less focus on regional or national road maps for achieving MDG4 targets, and even less on what follows 2015 at regional or country levels. There has also been little focus on complex activities and structures required to build a modern child health service in developing countries in the 21st century, activities that are not easily tested or have never been subjected to controlled trials.

The Pacific island states including Papua New Guinea (PNG) are not homogeneous. They vary in terms of economy, population size, the geographical challenges for their health services, and their culture and history. They also vary somewhat in child

Correspondence: Professor Trevor Duke, Centre for International Child Health, Department of Paediatrics, University of Melbourne, Parkville, Vic. 3052, Australia. Fax: 9345 6667; email: trevor.duke@rch.org.au

Conflict of interest: Apart from professional afflictions with ministries of health, professional societies and agencies responsible for child health in the Pacific region, we declare no commercial or other conflicts of interest.

Accepted for publication 10 June 2014.

health burdens and resources to address these. However, these countries share enough in common and have many shared transnational problems to consider what would be needed to reduce the gaps in child health between them, and between the Pacific countries and their nearest neighbours, Australia and New Zealand. We argue that a better future will only occur if we can create a Pacific community that is less constrained by sovereign borders and that co-operates on more of the problems and resources we share.

PNG has the overwhelming proportion of child deaths in the Pacific. There is an estimated 13 000 child deaths in PNG annually, with Solomon Islands the second highest number at around 500 deaths annually.

Sixteen things are proposed to close the gaps in child health. These are listed in Table 1. They are far easier said than done. Many require input outside the health sector. Some could be considered 'interventions', but several are areas that need strengthening to address specific distal or proximal causes of mortality and to build services to address the major gaps. The rationale for each is described below, along with examples from the Pacific region of the status of each if these actions, and why they are needed. Some will have a higher priority or require greater emphasis in some countries than others, but all are important to close the gaps by 2035.

1. A Focus on Neonatal Health

As has been described in the global literature on child survival, neonatal mortality represents a disproportionate fraction of child deaths relative to the time span of the first month of life. The same is true in the Pacific. While the need is comparable with other regions, how to achieve substantial and sustainable reductions in neonatal deaths in the Pacific context is not

T Duke et al. Child health in the Pacific

Table 1 Sixteen high-priority areas in the post-2015 child health agenda in the Pacific

- Neonatal health
- 2 Rural health services and rural development
- 3 Education of children, especially girls
- 4 Tuberculosis and HIV
- 5 A focus on urban settlements and environmental health
- 6 Properly structured child health programmes
- 7 A focus on quality and safety of paediatric and neonatal care
- 8 Models of management of chronic childhood conditions
- 9 Human resources and leadership
- 10 Reducing the unmet need for family planning
- 11 Social and legislative protection
- 12 New vaccines against pneumonia and diarrhoea
- 13 Nutrition
- 14 School and adolescent health
- Data, disease surveillance, population and health facility based information
- 16 A new type of partnership across the Pacific

HIV, human immunodeficiency virus.

strongly outlined in the published literature. The World Health Organization (WHO) has recently launched the Western Pacific Regional Strategy for Healthy Newborns, which focuses on early essential newborn care – the quality of routine care for all babies and the basic management of sick neonates. WHO and member states have set targets for 2020: national and sub-national neonatal mortality rates of 10 per 1000, at least 90% of all deliveries attended by a skilled birth attendant (nurse with midwifery skills, midwife or doctor), and 80% of health facilities where birth take place have implemented early essential newborn care. 5

A key consideration is the relative emphasis on community-based services and health facility-based neonatal care. In PNG, just over 50% of birth occurs in health institutions by a skilled birth attendant.⁶ In all other Pacific countries, the rates of facility-based delivery are 80% or more,⁶ including 85% in Solomon Islands and 99% skilled birth attendant rate in Fiji.⁷ In these countries, the emphasis should be on quality of health facility deliveries and the training and distribution of midwives or nurses with midwifery training.

However, the situation is not straightforward in some Pacific countries: despite the reported skilled birth attendant rates, many births occur in facilities staffed by nurse aides. Under WHO standards, nurse aides are not counted as skilled birth attendants without specific midwifery skills. In Solomon Islands, 30% of deliveries are done by nurse aides. In many Pacific countries, it is unlikely that trained midwives will be staffing each primary health clinic, so training of nurses and nurse aides in midwifery skills are needed.

Models of neonatal care appropriate to the Pacific countries are also needed; in most countries, there are only *ad hoc* approaches.⁸ The required models include standards and guidelines, facilities, equipment, drugs and commodities, and a referral structure. In Pacific countries, given the dispersed geography,

essential care of mothers and newborns will be decentralised, requiring nurses with neonatal skills in major health clinics and district hospitals close to where people live. However, care of highest risk neonates will be centralised: at a national level, in some smaller Pacific countries and at a provincial or divisional level in some larger Pacific nations, such as in PNG or Fiji. This requires a skilled workforce: paediatric medical and child health nurses with neonatal skills at these central levels, as well as obstetric and midwifery services. For the WHO regional newborn care goals to be achieved, such as technical skills and leadership will have to be deliberately and systematically developed.

2. A Focus on Rural Health Services and Rural Development

Despite rapidly growing urban areas, 79% of the Pacific population is rural,⁹ and there have not been adequate models to address the health and other needs of rural people. This is changing and rural development is occurring in many places, although not as fast in the Pacific as in Asia. While electricity supplies are reaching more homes and mobile phones are widespread, water and sanitation remain underdeveloped (only 13% and 15% of people living in rural areas in PNG and Solomon Islands, respectively, have access to improved sanitation facilities).¹⁰ The UNICEF Healthy Village concept was adopted by many ministries of health but not adequately implemented. The challenge is to support models for rural health service delivery and broader rural development, which are fit for the Pacific context, and ensure that they are sustained with adequate financing.

There are some examples of broader progress being made in rural areas. In PNG, the dispensation of K10 million annually to members of parliament is getting roads built or repaired, schools maintained and rural electrification programmes going, despite the risk that substantial amounts would be wasted or stolen. There is funding for small businesses and microfinance schemes, which have the potential to increase household income, and support of free education is allowing more children to have access to schools. Those gains need to be worked on and the limitations addressed through strengthened accountability mechanisms.

The model of rural health workers who are village-based volunteers has not worked at an effective scale in the Pacific as it has in some south Asian countries. The reasons include lack of policy at government level that addresses such volunteers, inadequate support and incentives for rural women to be involved, inadequate integration with routine health services, fragmentation of services and approaches, and role confusion with the nurse aides or community health workers who staff primary health facilities. Doctor-directed primary health-care services in rural areas of the Pacific are not feasible as Pacific medical schools are not producing graduates fast enough and remuneration for doctors is beyond what most major rural clinics can afford (although the influx of Cuban-trained doctors in Solomon Islands, Kiribati and Vanuatu provides some opportunity). Although a doctor-directed model occurs successfully in rural areas of Indonesia, Vietnam and other parts of Asia, other models are more appropriate in the Pacific and in some areas are Child health in the Pacific T Duke et al.

working well. In PNG, there is a training course for postgraduate doctors in rural medicine. Through this, doctors work and train at a district hospital level, and support nurses who work in the primary health clinics within their district. In Fiji, there is a nurse practitioners' course that trains experienced nurses to be independent practitioners in rural clinics and sub-divisional hospitals. Such models for improving the quality of health services in rural areas need continued support, especially in in-service training and development.

How to support rural health clinics in decentralised systems is crucial. There is a role for establishing teams that include district health centre staff, rural clinic staff and village health workers. Such teams can be supported with appropriate logistics to advance rural outreach into villages.

3. Education of Children, Especially Girls

In countries throughout the world, the largest determinant of child health is female literacy. In the Pacific, primary school completion rates are improving. In the Solomon Islands, primary school enrolment is 99%, but fall to 38% for junior secondary school and 23% for senior secondary school.¹¹ Attendance rates differ among social groups, being 10–20% higher among the richest quintile and urban dwellers than rural and the poorest quintiles.¹¹ In Fiji, since 2011, the Ministry of Education provides full transport assistance to eligible students attending schools within their school home zone, and this has increased attendance.⁷ In Fiji, 95% of children attend school regularly. Similarly, in the Solomon Islands, the risk of non-attendance is higher among rural and poor children.⁷ In 2015, in Fiji, all government-run primary and secondary education will be free.

Secondary education levels in Solomon Islands are reflective of the situation in a number of countries throughout the Pacific, particularly PNG and Vanuatu, but this is changing rapidly in many areas, and overall education demand is increasing. In the last decade, PNG has made notable expansions in basic education, and many provinces provide free primary school education; the number of students in elementary and primary schools was 31% higher (nearly 300 000 more children) in 2009, compared with 2006. Disruptions to education because of civil conflicts in Bougainville, Solomon Islands and Fiji in the first decade of this century are now history not to be repeated.

With these increases in primary education, infrastructure and teachers are lacking to cope with the current and future demands for secondary education, and this requires targeted investment. Additional investment is needed to ensure that curricula are preparing school leavers and graduates for work. Other countries have shown that major reforms in education can occur in a short time. In Vietnam, for example, within the first decade of the 21st century, new primary and secondary schools were built in most remote villages, increasing net enrolment in primary education from 90% in 2005 to 98% in 2012.¹³

Additional investments are also needed in early childhood education. While data on early childhood education rates in the Pacific are scant, estimates suggest that only 18% of children in Fiji attend pre-primary education, 49% in Solomon Islands and 59% in Vanuatu.

4. Tuberculosis and Human Immunodeficiency Virus

Human immunodeficiency virus (HIV) and tuberculosis (TB) prevalence rates vary across the Pacific, but they remain common threats to child health in all countries. In PNG, TB is probably the single most important health problem overall, maintains cycles of poverty within families and challenges current health programmes that have inadequate systems for prevention and managing children with chronic conditions. Tackling childhood TB will be achieved by improving detection and treatment of TB in adults, by improved prevention and detection of TB in children, by integrating HIV and TB care in maternal and child health programmes, and by developing appropriate models of chronic care for children. Solutions exist to do this, including the recently launched Road Map for Childhood Tuberculosis¹⁴ and the revisiting of older strategies for public health disease control.¹⁵

5. A Focus on Urban Settlements and Environmental Health

In general, children in urban environments have better health outcomes and have better access to health services than those in rural areas. However, in the Pacific, as in much of Asia, the urban spread is not always planned or controlled. Settlements have developed where unemployment, crowding, poverty, and poor sanitation and water supplies lead to 19th century disease patterns. Providing health services to children and families living in such settlements should be a high priority for city authorities. There are examples of this: Port Moresby National Capital District health services have received substantial investment in recent years and the Honiara Town Council heath service in Solomon Islands has also been boosted with funds and staff

There is evidence that urban public health is improving as a result of these changes. In late 2013–2014, there was a measles outbreak in PNG, which could have been as bad as previous ones, where in 1999–2001 a measles epidemic affected 30 000 children, and in 1 year there were nearly 300 measles-related deaths in hospitals alone. However, in 2013–2014, better urban public health, improved immunisation coverage, especially through supplemental immunisation activities, and a more timely outbreak response have limited this outbreak, with much fewer deaths than in previous epidemics.

There is a lot more to do in national capital cities throughout the Pacific, and in provincial capital cities of PNG, including Lae and Madang, where large urban settlements exist. There is more emphasis on town planning and beautification, which is helped by insightful city governors and forthcoming sporting events (such as the Pacific Games), but there is also a risk that people in urban settlements will be evicted rather than provided for. Environmental health, including water and sanitation infrastructure as well as waste management, is a major issue in urban centres across the Pacific. Economic growth has been associated with investment in roads and sewerage in many towns, but in urban settlements and rural areas, this is still lacking. The recent floods in Honiara in April 2014 demonstrated the additional vulnerability of children living in settlements to natural disasters.

T Duke et al. Child health in the Pacific

6. Properly Structured Child Health Programmes

There are models for improving child health services. The adoption of the Child Survival Strategy16 from 2005 by many Pacific Island states and national adaptations of this strategy have enabled more formal structures for child health services. These components include a single national plan for child health, an official overseeing body (e.g. the Child Health Advisory Committee in PNG and the Clinical Network in Fiji) and a monitoring framework. The national committees' roles are to review the results of disease surveillance, new regional initiatives, and international and local research. The committees have policy and advocacy roles. They are responsive and made up of senior people with epidemiological, clinical, public health, maternal health and policy making skills. National plans are holistic, evidence-based and aligned with MDG4 targets and United Nations agency goals, but locally developed.¹⁷ However, this process of developing a structure for child health needs to be scaled up to more countries. 18 The traditional link with maternal and child health (MCH) services is essential and needs to be maintained, despite the complexity of the child component of МСН.

7. A Focus on Quality and Safety of Paediatric and Neonatal Care

In the last decade, examples of clinical quality improvement have emerged from the Pacific, and these need to be built upon. Many countries have a long history of standard treatment, ¹⁹ and the WHO Hospital Care for Children strategy provides a holistic approach to improving quality by addressing triage, emergency care, treatment, the diagnostic approach, supportive care and monitoring, and discharge planning and follow-up. ²⁰ Over 500 child health workers from Solomon Islands, PNG, Fiji and elsewhere have completed this course, and the ministries of health have endorsed the guidelines as national standards. Accompanying these guidelines are standards for essential medicines, equipment, infrastructure, reporting and auditing. Examples of assessing these standards against existing services need to be duplicated in many countries. ^{21,22} Quality improvement can be effective in Pacific countries, with very low cost investment.

8. Models of Management of Chronic Childhood Conditions

In every district or province in Pacific countries, there are some children with chronic non-communicable illnesses: epilepsy, asthma, rheumatic or congenital heart disease, cerebral palsy, diabetes, cancer or the long-term effects of neonatal illness. While each condition is uncommon compared with acute respiratory infection and febrile illnesses, taken together, these chronic conditions comprise a substantial burden of disease. Preventable complications, including malnutrition, poor control of the primary disease, non-compliance with treatment or prophylaxis, and loss to follow-up lead to a large burden on the health system of complications and preventable deaths, and large social and economic burdens on families and communities. Such children need mechanisms for long-term follow-up and

care. Such models need to provide basic and ongoing care at a primary health level and specialist care at a district or provincial hospital level. This requires clear treatment plans, effective communication between primary and referral levels, parental education and empowerment, and targeted drug supplies for less common diseases in the specific primary care settings these children are managed.

Even less addressed than chronic physical conditions are mental health and developmental problems. Some services for children with developmental problems such as cerebral palsy, impaired vision and deafness exist, but are rudimentary and often dependent on philanthropy. Services for disabled children need to be better co-ordinated and supported, and specific skills in holistic care for such children need to be taught in health training curricula for nurses, doctors and paediatricians.

9. Human Resources and Leadership

The Pacific countries have different health service needs compared with Asia, where the last two decades have resulted in substantial increases in the training of doctors and nurses. In the Pacific, there are major gaps between health workforce's current and projected requirements, especially in nurses. The gaps exist in every location, and especially acute in rural areas.

With the decentralisation of health systems in the region, provincial or district governments have greater responsibilities. Committed and well-trained individuals are needed at a provincial and district level to oversee child public health programmes; manage, understand and use child health data effectively; co-ordinate the up-skilling of health workers in current treatment approaches for children; advocate and promote standards for good quality care; and communicate with the national leadership for child health. In the Pacific, paediatricians and child health nurses carry out these roles. 23,24 PNG is currently the only country in the Pacific with a programme for training child health nurses, and this country now has one programme where there were formerly four. Smaller countries in the Pacific, with even more limited number of practising paediatricians, have no such training programmes, although Fiji and Solomon Islands are working at developing such a course. This is in contrast to midwifery training, which exists in all but six of the smallest Pacific countries. Serious investment in child health nursing training across the Pacific is needed if goals in the next 20 years are to be achieved.

National paediatric societies, working closely with ministries of health, can be effective in upholding the child health agenda by providing technical advice on national child health priorities, maintaining standards for clinical care, leading child health training, and advocating and lobbying for broad child health issues and turning policy into practice. PNG has a strong paediatric society, but the rest of the Pacific Island countries have weaker or no professional bodies. The Pacifika Paediatric Association, recently launched in New Zealand, may fill this role, but close connection with ministries of health is needed to enable influence, and a multi-country professional body needs to develop this. An alternative is the incorporation of a Pacific paediatric association into an existing national society, such as the Paediatric Society of PNG, making a venue for exchange of ideas to assist fellow island states. Although it is not just

Child health in the Pacific T Duke et al.

numbers, professional influence is aided by critical mass: one paediatrician per 100 000 population is a minimum requirement, and few Pacific countries are close to this.

Workforce planning in recent years in the Pacific has involved projections of staff required, but these have often not been followed up by the harder task of supporting or building institutions of training to produce sufficient community health workers and nurses.

10. Reducing the Unmet Need for Family Planning

This has been measured recently in two Pacific nations, Vanuatu and Solomon Islands, where the unmet need for family planning is estimated to be 28–33% and 11–12%, respectively. Estimated effects of the reduced fertility (down to 2.1% in Vanuatu and 3.5% in Solomon Islands) are substantial falls in maternal and infant deaths and substantial net cost savings.²⁵ Substantial levels of unmet family planning needs are also reported from demographic and health surveys (DHSs) in Samoa (45.6%) and Tuvalu (24.6%).²⁶

In most countries in the Pacific, abortion is only legally available to save a woman's life. Ministries of health and academic and professional bodies across the Pacific can play an important role in research and discussion on the impacts of such limiting legislation, for example, how women currently access abortion services and the related health impacts for women and children.

11. Social and Legislative Protection

In some settings in the Pacific child sexual abuse is tragically common. Often this starts in early childhood, with the perpetrators being loosely connected males who are transient within households or living close in the same village or settlement. Child sexual abuse often leads to infections including gonorrhoea and chlamydia, sometimes to physical injury or pregnancy, and untold emotional trauma. When detected, child sexual abuse is often dealt with through customary law, with the victim's family receiving financial or other types of compensation. In many societies, it is uncommon for a prosecution of the perpetrator, and psychological support to child victims is rare. There are appropriate laws to protect children from harm, but these are not enacted. Protection of children from physical injury within the home and schools also needs to be addressed, where many children are subjected to violent discipline. Fiji has mandatory reporting by professionals, but this legislation is not followed by other Pacific countries.

To address this is beyond the health sector, but more social workers who are trained in child protection are needed, and more awareness and support for child victims are crucial. As is community condemnation demonstrated by effective dealing with perpetrators. In addition, the police and the broader justice sector can do more to respond to such crimes in ways that keep children safer and demonstrate condemnation of perpetrators. Within the health sector, higher standards for patient referral by nurses and doctors to the relevant social welfare and justice departments in cases of suspected abuse or pregnancy in children who are under the age of consent are needed. New models of collaboration between health practitioners, social workers,

police and justice officials are emerging, for example, Family and Sexual Violence Case Management Centre in Lae, PNG, which needs sustained support and should be replicated in other areas, based on best practice. Finally, where social welfare offices are housed within ministries of health, such as in Solomon Islands, they need to be given appropriate financial and political support to do their role within and outside the health sector.

12. New Vaccines against Pneumonia and Diarrhoea

Vaccines against *Streptococcus pneumoniae* and rotavirus are being introduced. In 2014, 13 countries in the Pacific will have conjugate pneumococcal vaccine and 5 have rotavirus vaccine introduction, the largest for both being Fiji. PNG and Solomon Islands have successful applications to the Global Alliance for Vaccines and Immunizations for introduction of pneumococcal conjugate vaccine for 2014–2015. Countries in the Pacific have taken vaccination very seriously in the last 15 years. Highburden countries like PNG and Solomon Islands have regular supplemental immunisation activities in an effort to remain polio-free and as part of efforts towards measles elimination.

Other Pacific countries have also improved vaccine coverage since 2000.^{27,28} These are major achievements in the context of increasingly complex Expanded Program of Immunizations programmes and many other health sector pressures. Much work is needed to sustain this, by countries and through regional collaboration.

13. A Focus on Nutrition

The key elements are protection of breastfeeding and improving the quality of complementary feeding on the first years of life. Much malnutrition in the Pacific begins at around 4-6 months and is due to poor quality of complementary feeding. Mothers and care givers often introduce foods too early, and very often complementary foods are not energy dense and have low protein content. Community education, more support for breastfeeding mothers, updating of the existing legislation to include the International Code of Marketing Breast-milk Substitutes and enforcing existing legislation, micronutrients, de-worming and growth monitoring are all needed. There is a strong need for a well-thought-out communication strategy on nutrition in all Pacific island countries. Improving the quality of care for malnourished children is also essential, where in PNG, for example, the case fatality rate for severe malnutrition is 18-23%.29

14. School and Adolescent Health

There is an increasing demand for school health services in the Pacific, and it is a high-impact strategy, especially given the focus on prevention of non-communicable diseases. Such programmes are active in some countries, including as in Fiji where there are well-trained school health nurses, but school health programs are not well developed in many Pacific countries. The WHO Global School Health Initiative was started in 1995, and is now more important than ever.³⁰ Human papillomavirus

T Duke et al. Child health in the Pacific

vaccine, HIV prevention, sexual and reproductive education, nutrition education, prevention of substance abuse and smoking, and school screening for rheumatic heart disease are just some of the things that can be part of the school health agenda in this decade.

15. Data, Disease Surveillance, Population and Health Facility Based Information

In writing this paper, it is striking how limited the populationand facility-based data from the Pacific are. Relative to countries in Asia and Africa, there are big gaps in data on school attendance, the proportion of the population living in urban settlements, child protection, trends in immunisation coverage, numbers of children working and disease-specific health outcomes. Countries in the Pacific have relied upon 10-yearly DHS for population-based data. There is evidence of some improvement in this space, and scope for much more. Locally developed population-based data sources, such as the Family Health Card in Solomon Islands are receiving some support and a district health management system is being compiled from the various data sources.

There is a need to pay greater attention to the collection and analysis of patient level information from facilities by ministries of health. This would build greater evidence of the major causes of child mortality and morbidity, as well as practices for treating and referring patients, referral practices, and how these causes and practices vary between provinces and across different levels of the health system. Such evidence would not only support more evidenced-based responses but help inform more equitable resource allocation within the health system.

Pacific countries have not been able to record data using the complex International Classification of Diseases-10 coding system. In this they are similar to most developing regions. Most systems in use only record a single cause of admission or death, leading to underestimation of co-morbid problems, particularly malnutrition, anaemia, and underlying medical or social conditions. However, in PNG, a programme to record all hospital admissions in a simple and standardised way has resulted in data of over 78 000 admissions and 5800 deaths in 4 years. Disease burdens, vaccine-preventable disease surveillance, and disease-and age-specific mortality rates and co-morbidities are now available.²⁹ This concept is being extended to other Pacific countries and provides essential data for policy and practice.

16. A New Type of Partnership across the Pacific

In the next quarter century, the Pacific nations cannot lag behind the rest of Asia and Australasia as they do now. We need a new approach that recognises that while some transnational health problems – such as multidrug-resistant TB, HIV and influenza outbreaks – are commonly cited shared threats, few problems are country-specific, and the solutions, while requiring contextualisation, are common to all. Many countries in Asia have rapidly developed because of opening of markets, rural development, investing in education and quality primary health, opening up of tertiary education across the region and investing in infrastructure, particularly in rural areas. We need

a new compact with the Pacific that recognises sovereignty, respects and preserves culture and diversity, and works more closely at all levels of government, business and civil society. Solidarity between nations recognises our interdependence. The multiple points of interdependence and common interest with the Pacific are not well recognised in Australia, but include the flow of energy (such as liquid natural gas from PNG), the shared fishing zones and the health of our oceans, and the conservation of the Great Barrier Reef, which stretches to the east and north of PNG, and rain forests. Previous examples include the peoples of the Pacific's contribution to the defence of Australia in the Second World War. Other current examples are the Pacific fruit picking visas and the love of travel throughout the region. Recently, our interdependence has been demonstrated by the attempts to co-operate on the problem of refugees, clumsy political and transactional attempts at regional co-operation to be sure. However, more mature attempts would recognise the potential of welcoming some people of diverse backgrounds, new skills and a strong work ethic to the Pacific; a desirable step in creating an economically sustainable Pacific community. Interconnectedness can be found in tertiary education and skills development, and health professional societies. The Pacific has much to teach us about community and culture, and the ancient cultural links with Aboriginal and Torres Strait Islander culture are part of Australia's history that need to be better understood. These and other points of solidarity provide the basis for equal co-operation, not aid.

If the 16 things described in this paper in child health can be achieved in the next 20 years, inequity in child health across the Pacific and Australasia would be markedly reduced. That would be a worthwhile aim for the post-MDG era and a good target for all our countries until 2035, based on regional solidarity. Given the remarkable progress that has occurred in child health in many Asian countries and how far PNG and Pacific countries have come in the last 50 years, we should not be reticent about the progress that can be made, but more ambitious than in the past to close the gaps.

Acknowledgements

We acknowledge the input of many paediatricians in the Pacific, including Dr Divi Ogaoga, Dr Titus Nasi (Solomon Islands) and Professor John Vince (University of PNG).

The Centre for International Child Health (CICH) is associated with the RE Ross Trust (Victoria). We are grateful for their support to child health training and research in Papua New Guinea and the Solomon Islands. CICH is a World Health Organization Collaborating Centre for Research and Training in Child and Neonatal Health.

References

- 1 Black RE, Cousens S, Johnson HL et al. Global, regional, and national causes of child mortality in 2008: a systematic analysis. Lancet 2010; 375: 1969–87.
- 2 Black RE, Moris SS, Bryce J. Where and why are 10 million children dying every year? *Lancet* 2003; **361**: 2226–34.
- 3 Bryce J, Black RE, Walker N, Bhutta ZA, Lawn JE, Steketee RW. Can the world afford to save the lives of 6 million children each year? *Lancet* 2005; 365: 2193–200.

Child health in the Pacific T Duke et al.

- 4 Liu L, Johnson HL, Cousens S *et al*. Global, regional, and national causes of child mortality: an updated systematic review for 2010 with time trends since 2000. *Lancet* 2012; **379** (June 9): 2151–61.
- 5 Western Pacific Regional Office of World Health Organization. Maternal and Child Health. 2014. Available from: http://www .wpro.who.int/topics/reproductive_health/maternal_child_health brochure.pdf [accessed February 2014]. Manilla, WHO.
- 6 United Nations Children's Fund. State of the World's Children. 2014. Available from: http://www.unicef.ca/sites/default/files/imce_uploads/ UTILITY%20NAV/MEDIA%20CENTER/PUBLICATIONS/sowc_2014.pdf [accessed February 2014].
- 7 United Nations Children's Fund. Children in Fiji 2011: An Atlas of Social Indicators. 2011. Available from: http://www.unicef.org/ pacificislands/Fiji_Equity_Atlas_Web_version.pdf [accessed February 2014]. Suva, Fiji.
- 8 Milner K, Duke T, Bucens I. Reducing newborn mortality in the Asia-Pacific region: quality hospital services and community-based care. *J. Paediatr. Child Health* 2014; **49**: 511–48.
- 9 United Nations. Statistical Yearbook for Asia and the Pacific. 2013. Available from: http://www.unescap.org/stat/data/syb2013/ESCAP-syb2013.pdf [accessed January 2014].
- 10 United Nations. Millennium Development Goal Indicators: the Official United Nations site for the MDG Indicators. 2014. Available from: http://mdgs.un.org/unsd/mdg/Data.aspx [accessed April 2014].
- 11 United Nations Children's Fund. Children in Solomon Islands 2011: An Atlas of Social Indicators. 2011. Available from: http://www.unicef.org/pacificislands/Children_in_Solomon_Islands_2011_An_Atlas_of_Social_Indicators(1).pdf [accessed 1 August 2014], 1–80. Suva, Fiji. ISBN: 978-982-9033-04-8.
- 12 United Nations Children's Fund. Papua New Guinea Education. 2014. Available from: http://www.unicef.org/png/activities_4369.html [accessed April 2014].
- 13 World Bank. World Bank, World Development Indicators. 2014. Available from: http://databank.worldbank.org [accessed April 2014].
- 14 World Health Organization, United Nations Children's Fund, Center for Disease Control (U.S.), International Union Against TB and Lung Disease, Stop TB Partnership, United States Agency for International Development. Roadmap for Childhood Tuberculosis: Towards Zero Deaths. 1–40. Geneva, Switzerland, World Health Organization, 2013.
- 15 Amini J, Poka H, Kumbu J et al. The crisis of tuberculosis in PNG the role of older strategies for public health disease control. PNG Med. J. 2012: 55: 1–4.
- 16 WHO Regional Office for the Western Pacific. WHO/UNICEF Regional Child Survival Strategy: Accelerated and Sustained Action Towards MDG 4. Geneva: World Health Organization, 2000. ISBN 9290610875.
- 17 PNG Paediatric Society, Department of Health PNG. Child Health Plan and Strategic Implementation Plan 2009–2020. 2009. Available from: http://pngpaediatricsociety.org/wp-content/uploads/2013/06/ PNG-Child-Health-Policy-and-Plan-2009-2020.pdf [accessed April 2014], PNG Department of Health. 1–97.

- 18 Jayawardena N, Subhi R, Duke T. The Western Pacific Regional Child Survival Strategy: progress and challenges in implementation. J. Paediatr. Child Health 2012; 48: 210–19. [E-pub Dec 2010].
- 19 Paediatric Society of Papua New Guinea. Standard Treatment for Common Illnesses of Children in Papua New Guinea, 9th edn. Port Moresby: Department of Health, Papua New Guinea, 2011.
- 20 World Health Organization. Hospital Care for Children: Guidelines for the Management of Common Illnesses with Limited Resources. Geneva: WHO, 2013. ISBN 92-4-154670-0. Available from: http://www.who.int/child-adolescent-health/publications/ CHILD_HEALTH/PB.htm, www.ichrc.org.
- 21 Auto J, Nasi T, Ogaoga D, Kelly J, Duke T. Hospital services for children in Solomon Islands: rebuilding after the civil conflict. J. Paediatr. Child Health 2006; 42: 680–7.
- 22 Sa'avu M, Duke T, Matai S. Improving paediatric and neonatal care in rural district hospitals in the highlands of Papua New Guinea: a quality improvement approach. *Paediatr. Int. Child Health* 2013; 34: 75–83. [Epub ahead of print]; Dec 6:2046905513Y0000000081.
- 23 Colquhoun S, Ogaoga D, Tamau M, Nasi T, Subhi R, Duke T. Child health nurses in the Solomon Islands: lessons for the Pacific and other developing countries. *Hum. Resour. Health* 2012; **10**: 1–9. Available from:: http://www.human-resources-health.com/content/pdf/ 1478-4491-10-45.pdf:doi:10.1186/1478-4491-10-45 [accessed 10 December 2014].
- 24 Subhi R, Duke T. Leadership for child health in the developing countries of the Western Pacific. J. Glob. Health 2014; 1: 96–104.
- 25 Kennedy EC, Mackesy-Buckley S, Subramaniam S et al. The case for investing in family planning in the Pacific: costs and benefits of reducing unmet need for contraception in Vanuatu and the Solomon Islands. Reprod. Health 2014; 10: 1–11. Available from: www.reproductive-health-journal.com/content10/1/30 [accessed February 2014].
- 26 United Nations. UN World Contraceptive Use 2010. 2014. Available from: http://www.un.org/esa/population/publications/wcu2010/WCP_2010/Data.html [accessed February 2014].
- 27 Ministry of Health and Medical Services SI, World Health Organization, United Nations Children's Fund, GAVI Alliance, Japan International Cooperation Agency. *International Review of the Expanded Programme on Immunization in Solomon Islands, November 2012*. 2014. Available from: http://www.wpro.who.int/immunization/documents/international_epi_review_SLB_nov_2012.pdf?ua=1 [accessed 1 August 2014] World Health Organization.
- 28 World Health Organization, United Nations Children's Fund. WHO and UNICEF Estimates of Solomon Islands Immunization Coverage: 2002–2012. 2013. Available from: http://www.childinfo.org/files/ Solomon Islands 2000 2012.pdf [accessed 1 August 2014].
- 29 PNG Child Health Advisory Committee. Annual Child Morbidity and Mortality Reports 2010–2012. 2013. Available from: http://pngpaediatricsociety.org/?page_id=192 [accessed April 2014].
- 30 World Health Organization. The WHO Global School Health Initiative. 2014. Available from: http://www.who.int/school_youth_health/gshi/hps/en/ [accessed April 2014].