

Current opportunities and future challenges in child health in Papua New Guinea

PUKA I. TEMU¹ AND ROBERT T. DANAYA²

Department of Health, Port Moresby and Port Moresby General Hospital, Papua New Guinea

SUMMARY

Papua New Guinea (PNG) is at a crossroads in child health care. We know how to treat or prevent most of the diseases causing child and maternal mortality, but we are failing to deliver the services to where most of the people are dying. There is much to be learnt from early achievements in the development of health services in PNG. Between the 1950s and 1970s the infant mortality rate fell from 250-500 per 1000 livebirths to 77-100 per 1000 livebirths. This occurred predominantly because of an emphasis on public health programs and cost-effective standard treatment. Now the public health services have deteriorated, vaccine coverage is poor and health workers are not fully using the standard treatment resources available to them. The greatest academic and practical challenges facing medicine in PNG are to implement effective and consistent delivery of vaccines, and nutritional, basic curative and maternal care to remote or impoverished communities. The other unmet prerequisites for improvement in health status are that communities participate in and take some responsibility for their health care needs. There are now unprecedented opportunities for collaboration with international partners, churches, non-government organizations and community groups to achieve these goals. Specific key strategies in child health include the more widespread utilization of the 10-Step Checklist, adoption of some of the World Health Organization Integrated Management of Childhood Illness strategies, increased output of child health nursing training, improving vaccine delivery and cold-chain services, and new immunization strategies for acute respiratory infections. The National Health Plan 2001-2010, launched in August 2000, emphasizes the vital importance of public health; the need for greater access to quality health services; improving clinical skills among health workers at all levels; and cooperation between all interested parties. By 2010 the National Health Plan must be judged not on how good the plan seemed on paper, but on whether there was a measurable reduction in maternal and child mortality over the first decade of this century.

Introduction

In Papua New Guinea (PNG) the causes of most of the fatal diseases of childhood are well known and most of these diseases are preventable or treatable. Tremendous efforts have been made in the past to improve children's health in this country and these efforts are greatly acknowledged. However, further improvements in children's health remain one of the greatest challenges in public health in PNG. The primary goals are to prevent illness, suffering and death among children through immunization, good nutrition,

treatment of common diseases and prevention of child abuse. The government has committed to meeting this challenge by its participation in the United Nations World Summit for Children in 1990 and by re-endorsing the Convention on the Rights of the Child. While this demonstrates the political commitment at the highest level, there is a need for positive action at all levels and by all those who have responsibility for children. Multisectoral and multidisciplinary approaches are necessary if we are to realize this commitment.

The purpose of this paper is to describe the

¹ Department of Health, PO Box 807, Waigani, NCD 131, Papua New Guinea

² Port Moresby General Hospital, Free Mail Bag, Boroko, NCD 111, Papua New Guinea

past experiences, current opportunities, future challenges and strategies that are being put in place to achieve these goals.

The past efforts in improving child health

After the Second World War, Papua New Guinea was fortunate to have had a shrewd and dynamic Director of Health in Dr John Gunther. He established a network of aid posts throughout the country, promoting health campaigns against malaria, yaws, tuberculosis and malnutrition. He encouraged the establishment of maternal and child health (MCH) services, under the direction of Dr Joan Refshauge. Dr Gunther also encouraged relevant research and planned a basic medical training program for the country.

By the time Dr Gunther was promoted to Assistant Administrator in 1957 he had laid a solid foundation for the future of health services in the country. In those days it was all too evident that infant mortality was extremely high: in many areas half of the children were not around to see the government patrols come through the following year. In many areas the infant mortality rate (IMR) was estimated to be 500 per 1000 livebirths. Improvement occurred because of the dedication and commitment of the *kiaps* (government patrol officers) who enforced laws that ensured villagers lived healthier lifestyles. Missionaries too contributed to this change in health status; many were trained nurses able to deliver basic health care, especially to mothers and children.

Further expansion of MCH services occurred in the 1960s under Dr David Bowler, who succeeded Dr Refshauge. A senior health matron, Miss V. Bignold, with a dedicated band of nurses strongly supported by church health workers, further developed an impressive network of MCH services throughout the country.

Hospital paediatric services barely existed in 1960. There was only one paediatrician, Dr Bryan Ryan, who also acted as an obstetrician. Since then there has been a gradual building of hospital-based services led by paediatricians, most of whom are PNG citizens who have received most of their training within the

country. There is a thriving Paediatric Society, linked to the International Paediatric Association and the Association of Paediatric Societies in Southeast Asia.

There was a steady decline in IMR from the early 1960s (250 per 1000 livebirths) to 1971 (134 per 1000) and 1980 (72 per 1000). Across the country these major reductions in child mortality were attributable predominantly to public health interventions.

Despite improvements in health services fatal epidemics still occurred: Mt Hagen Hospital recorded 104 deaths from whooping cough in 1971. Tuberculosis (TB) was rampant on the coast then, as it is now. In the 1970s congenital syphilis and child abuse emerged as new problems, the latter probably being substantially underreported. Malaria, always a major killer, has become a greater problem with the arrival of chloroquine-resistant strains of *Plasmodium falciparum*.

Health facilities were expanded further by the upgrading of aid posts to bigger facilities (health centres and subcentres) to cater for the growing number of inpatients. Many of these are church-run facilities subsidized by the government. These facilities are able to provide child health services in the areas of growth monitoring, immunizations, health education, nutrition guidance, family planning, maternity services and treatment of common disorders. These health facilities are supported by provincial hospitals. There is approximately 1 nurse per 2000 population, 1 health extension officer per 10,000 and 1 doctor per 15,000 population. These are nationwide averages and some areas, particularly urban areas, are relatively better served, while others, particularly remote rural areas, are poorly served.

In areas where there are no doctors, nurses, health extension officers and community health workers diagnose and manage sick children with common illnesses. Post-basic paediatric nurse training programs have been running in Port Moresby since 1970 to assist rural nurses in this vital area of child health care. The Paediatric Standard Treatment Book has been produced since 1974 and is now in its 7th edition.

In the 1980s vertical disease-specific programs such as acute respiratory infection, diarrhoeal disease, malaria and tuberculosis control programs were established to tackle these common diseases. Programs were centrally based and resourced but aimed to cover the entire country with training of health workers, provision of supplies and equipment, drugs, supervision, and collection and analysis of disease-specific information.

In 1993, as part of the USAID-funded Child Survival Project (CSP), the Department of Health developed the 10-Step Checklist for the triage and management of sick children. The checklist described a process of integrated clinical assessment of the sick child, including screening for the most important causes of mortality and morbidity, assessment of nutritional status and immunization. The checklist was distributed to all child health workers and training in its use was organized through the CSP in all provinces of the country. Supervision 'patrols' were supported through the CSP, which, in principle, included supervision of clinical care in health centres and aid posts.

Current situation and opportunities

After continuing with support from UNICEF and AusAID, the CSP finally came to an end in 1997 and following this there has been little inservice training and no follow-up for the staff that were trained during the project. In the absence of funds, the supervisory patrol system ceased to operate in many areas.

Studies on the medium-term impact of the 10-Step Checklist indicate that peripheral health care workers now rarely follow the checklist. Routine screening for common severe childhood conditions is lacking and health workers are commonly practising the traditional approach of diagnosing and treating individual symptoms.

According to the figures put out by the World Health Organization (WHO), the current infant mortality rate is 77 deaths per 1000 livebirths (1). This has been static for the last decade and is one of the highest in the East Asia-Pacific region. The under-five child

mortality rate has not fallen for 20 years: 129 deaths per 1000 livebirths for males and 106 deaths per 1000 for females (2).

Treatable or preventable infectious diseases are still the major causes of child mortality and morbidity. Epidemics of vaccine-preventable diseases, particularly measles, still occur. These diseases are a major burden on health service resources, consuming drugs and supplies, health workers' time and the costs of inpatient care.

Recent reviews of the health services reveal that there are widespread deficiencies in essential medicines and some equipment and supplies such as oxygen. Supervisory visits to peripheral health facilities by clinicians are infrequent and most visits are for administrative purposes, rather than well-planned support visits encompassing training, auditing and clinical service. Moreover, there is a general lack of infrastructure maintenance. Many aid posts are closed due to lack of appropriately trained staff or supplies and poor maintenance. Immunization coverage has not yet reached the targets and the cold chain system is poor.

Despite early achievements over many years, past efforts have not been sustained. The lack of further reduction in mortality indicators over the past 20 years is of great concern and in some provinces child mortality has increased. In provinces where there are good road networks many families bypass aid posts and health centres to seek specialized health care. The challenge now is to improve the quality of the health services as well as to increase their accessibility.

Future challenges and strategies

In the 1960-1980s the major reductions in child mortality occurred because of public health initiatives. In many areas where there was a 75% reduction in child mortality over the 10-20 years after 1960, there were no or minimal hospital-based services. Unfortunately, over the years, the public health services have deteriorated. For this reason, further improvement in mortality indicators has been limited.

The decline in public health services is due to multiple factors: inadequate funding, inefficient management of funds, lack of supervision and support, and deterioration in roads and law and order. Public health initiatives must be fully resourced to complement hospital-based services.

The central role of public health is well understood by our major partners. The AusAID-funded Women's and Children's Health Project and the Health Sector Support Program are designed to rebuild the public health system. However, this task must be valued by all health workers and must be treated as top priority. It is also essential that communities value, respect and protect their public health facilities and health workers, if progress is to be made. Too often health workers have been victims of violence. A public health system cannot be sustained in such an environment.

There are additional challenges to be faced in the future, many of a social nature. One is the high annual population growth (currently 2.5%), resulting in a population growing faster than the economy and social services can sustain. It is anticipated that the population of PNG will double by 2015. Already there are signs of social disharmony throughout the country with increasing urban drift, unemployment, inflation and inadequate supply of basic amenities such as water, sanitation and housing, particularly in poorly planned squatter settlements. All sectors of government must work together to improve the living conditions of our people.

Another current and future problem is the HIV/AIDS epidemic, which is sweeping the nation. This will leave behind parentless children whom the *wantok* system, especially in the urban areas, may not be able to support. There will be other children whose education will be prematurely discontinued because parents may not be able to afford school fees. Such children may end up being victims of child sexual abuse, teenage prostitution or substance abuse. Paediatricians will need to be more vocal advocates for these socially disadvantaged children.

So the challenges to rebuild and sustain the public health services are substantial and there

are many impediments to such progress. But we have the will and the means to address them. Some of the specific interventions and goals to which the Health Department is committed include: eradication of poliomyelitis by the end of 2000, elimination of neonatal tetanus, reduction in measles epidemics, maintenance of a high level of immunization coverage and reduction in deaths due to acute respiratory infections (ARI).

ARI (including meningitis) is the most common cause of ill health in children and causes 40% of all deaths. Most ARI deaths are due to pneumonia or meningitis in infants. Two bacteria (*Haemophilus influenzae* and *Streptococcus pneumoniae*) are responsible for 80% of pneumonia and meningitis. We have known this for the last 20 years. Now efforts at treating ARI are failing, because of antibiotic resistance and because we are failing to deliver curative health services to where children are dying. An alternative preventive strategy is needed.

In 1999 the Health Department committed itself to the introduction of the conjugate *Haemophilus influenzae* type b (Hib) vaccine. Hib causes only 6-20% of pneumonia, but 40% of meningitis. Introduction of this vaccine must be seen as the first step in a preventive strategy for ARI. The Health Department is committed to exploring the use of other vaccines that may prevent deaths from ARI. An affordable vaccine against *S. pneumoniae*, the most common single killer of PNG's children, is urgently required. The newly set-up Bill and Melinda Gates Foundation is committed to the development and provision of vaccines against ARI pathogens in developing countries. This insightful international organization is an important future partner for PNG.

The implementation of aspects of the global WHO strategy for the Integrated Management of Childhood Illness (IMCI) may help meet some challenges of child health. The IMCI is a flexible holistic strategy, which is an advance on the disease-specific approaches of the past. It includes interventions for health promotion, preventive care and child development. The strategy builds on existing child health programs, including the Child Survival Project,

and contributes to other major initiatives including immunization, malaria control, promotion of breastfeeding and nutrition programs. The effective implementation of the IMCI strategy requires attention to 3 essential components, namely:

- improving the skills of health personnel in the prevention and treatment of childhood illnesses;
- improving health systems to deliver quality care; and
- improving family and community practices in relation to child health.

The Department of Health and its major partners, WHO, UNICEF and AusAID, have made a commitment to work together to incorporate this strategy into national health policies and implement it nationwide.

As a part of this process, the current 10-Step Child Health Checklist was recently revised. Plans are underway for training of health workers, in preparation for implementation throughout the country. This will be accompanied by wide-ranging support to strengthen the health service infrastructure, drug supplies, transport and supervision.

National Health Plan 2001-2010

The Health Department has now finalized the new ten-year National Health Plan 2001-2010, due to be launched at the National Health Conference in August 2000. This National Health Plan has the vision for improving the health of all Papua New Guineans, including children.

To address the major challenges and to effectively implement our priority health programs, our new National Health Plan follows a framework where:

- Health promotion and health preventive services will be vitalized through the healthy islands setting approach
- The majority of people will have access to quality basic health services

- The limited specialist care services will be equitably distributed
- Health workforce training will be oriented towards service needs with more emphasis on management training and improved clinical and technical skills
- Service delivery will be improved through adherence to minimum standards
- Cost-effective, well-tested and technically sound interventions will be used
- Positive health outcomes will be achieved through health reforms and in partnerships with other government sectors, churches and other non-government organizations, the corporate sector, international donors and the community.

The National Health Plan lists 4 key areas where attention must be focused if the health of our people is to be improved. These are:

- The health of mothers and children
- Efficient management of limited resources
- Accessibility to basic health services
- Community support for health services and programs.

Our vision is for a nation of healthy individuals, families and communities where self-reliance prepares all for healthy living in a healthy island environment. In approving the new National Health Plan the government has made a commitment to address the identified weaknesses in the health system and ensure that the health system is responding to the people's needs so that the health of our nation can improve. Now it is up to us to implement this. The future is in our hands.

REFERENCES

- 1 **World Health Organization Regional Office for the Western Pacific.** Country Health Information Profiles, 1999 Revision. Manila: WHO WPRO, 1999.
- 2 **World Health Organization.** World Health Report 2000: Health Systems, Improving Performance. Geneva: WHO, 2000.