



# **Strengthening Development Partner Support to Immunisation Programs in the Pacific**

Strategic Review

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## Acknowledgements

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## Acronyms

AEFI	Adverse Event Following Immunisation
AFP	Acute Flaccid Paralysis
AFR	Acute fever and rash
CBA	Cost Benefit Analysis
CDC	US Centers for Disease Control
CRS	Congenital rubella syndrome
DAC	Development Assistance Committee of OECD
DFAT	Department of Foreign Affairs and Trade
DHS	Demographic and Health Survey
DP	Development Partners
DQS	Data quality study
DTP	Diphtheria, Tetanus, Pertussis
EPI	Expanded Program on Immunisation
EU	European Union
EVM	Effective Vaccine Management
EVMA	Effective Vaccine Management Assessments
FSM	Federated States of Micronesia
GAVI	Global Alliance for Vaccines and Immunisation
GNI	Gross National Income
GPEI	Global Programme for the Eradication of Polio
GVAP	Global Vaccine Action Plan
HepB	Hepatitis B
Hib	<i>Haemophilus influenzae</i> B
HoH	Heads of Health
HPV	Human Papillomavirus Vaccine
HSS	Health Systems Strengthening
ICC	Inter-Agency Coordinating Committee
IHP+	International Health Partnership
IPV	Inactivated Polio Vaccine
JICA	Japan International Cooperation Agency
MCV	Measles containing vaccine
MHMS	Ministry of Health and Medical Services
M(M)R	Measles (Mumps) Rubella
MNT	Maternal and neonatal tetanus
NCD	Non- communicable diseases
NZMFAT	New Zealand Ministry of Foreign Affairs and Trade
OECD	Organisation for Economic Co-operation and Development
OPV	Oral Polio Vaccine
PCV	Pneumococcal Conjugate Vaccine
PHC	Primary Health Care
PICs	Pacific Island Countries
PICTs	Pacific Island Countries and Territories
PIPS	Pacific Immunisation Program Strengthening
PNG	Papua New Guinea
RDT	Rapid Diagnostic Test
RMNCAH	Reproductive, Maternal, Newborn, Child and Adolescent Health
RV	Rotavirus vaccine
SAGE	Strategic Advisory Group of Experts on Immunisation
SIA	Supplementary Immunisation Activities
SDHS	Samoa Demographic Health Survey
SPC	Secretariat of the Pacific Community

STAG	Strategic Advisory Group
TA	Technical Assistance
TAG	Technical Advisory Group
ToR	Terms of Reference
UN	United Nations
UNICEF	United Nations Children’s Fund
US	United States
USAID	United States Agency for International Development
VII	Vaccine Independence Initiative
VPD	Vaccine-preventable diseases
VVM	Vaccine vial monitors
WASH	Water, sanitation and hygiene
WHO	World Health Organization
WPR	Western Pacific Region

### Clarifications to text

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Region	The 22 countries and Territories of the Pacific Community
Western Pacific Region (WPR)	The 37 Member States and areas of the Western Pacific Region, one of the six regions of the World Health Organization
Development partners	All governments, departments or agencies that provide technical or financial support to countries to implement national development plans

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## Executive summary

### Observations

Immunisation is a core element of primary health care (PHC) and widely accepted as a low-cost, high-impact intervention and global “best buy” in public health. It prevents communicable diseases that potentially threaten all ages. It is one of the most cost-effective interventions and has made substantial contributions to reducing childhood mortality, morbidity and the costs of ill health.

New vaccines being introduced in Pacific Island Countries (PICs) will further reduce child mortality due to pneumonia and diarrhoea. Immunisation of infants and children with Human Papillomavirus Vaccine (HPV) and Hepatitis B Vaccine (HepB) also protect against cervical and liver cancers later in life. Immunisation should be a high priority for government health expenditure.

PICs experience a range of difficulties related to delivery of services to remote, scarcely populated islands and to weaknesses in the underlying health system that limit provision of quality primary health care to all communities.

Despite the challenges, the impact of immunisation in PICs over the past 10-15 years has been impressive. All PICs have remained polio-free since 1989<sup>1</sup>, endemic transmission of measles has been interrupted, all countries except Papua New Guinea (PNG) are considered to have eliminated maternal and neonatal tetanus (defined as <1 case per 1,000 live births at district level) and Hepatitis B infection rates have been substantially reduced.

Analysis of trends for the third dose of Diphtheria, Tetanus, Pertussis (DTP-3) coverage for PICs reveals that vaccine coverage rates are generally high with half the countries showing consistently high coverage over the past four to five years. However coverage rates of a number of PICs have long fallen below desirable levels. A number of countries, especially those with weak health systems find it difficult to reach or exceed 80 per cent coverage or show declining levels.

Despite significant progress, immunisation programs remain fragile. Imported outbreaks of measles have occurred in the Pacific in recent years, but have been limited to the few countries which have a low immunity profile due to the failure to sustain consistently high levels of measles vaccine coverage and to population movements in and out of country. Due to the highly infectious nature of the virus and the high mobility of populations, **outbreaks pose an ongoing threat to all countries in the region and beyond.** Current coverage levels are not adequate to ensure that countries remain polio-free and measles-free in the event of disease importation.

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<sup>1</sup> The PICs have been polio-free since 1989, but were certified (along with the rest of the Western Pacific Region) as polio-free since 2000.

Immunisation programs are undermined by health system deficiencies that impact on access, equity, quality and overall performance. Trained health staff are in short supply, operational budgets are inadequate, regular supervision by senior managers is often lacking and data may not be used to best effect to improve performance. Sustained high levels of coverage can only be achieved through ensuring an effective health system that enables provision of quality primary health care (PHC), including immunisation, for all. This requires investment in recovery of routine health and immunisation systems with improvements requiring tailored solutions based on country-specific analysis to access underserved and hard to reach children. The World Health Organisation (WHO) has highlighted the need for renewed attention to increasing outreach and to strengthen linkages with communities.

Concerns over data quality are common and some countries demonstrate large discrepancies between data generated through the routine health information system and that from population-based surveys.

Routine immunisation remains the bedrock of a strong program. Supplementary immunisation activities (SIAs) have been widely used over the past decade to boost immunity and control measles in PICs. SIAs will continue to play an important role but should not detract from ensuring high coverage through routine services.

At the PHC level, services are often integrated and a single nurse may deliver all health interventions. S/he often lacks adequate skills and is overloaded with responsibilities for many priority health programs. The most challenging elements of immunisation, such as outreach to remote communities, tend to suffer first. Outreach services are also limited by lack of operational funds at the service delivery level.

Vaccine supplies are generally reliable in the region. Thirteen PICs obtain vaccines through the Vaccine Independence Initiative (VII) that procures WHO prequalified vaccines at competitive prices. High airfreight costs from the central store in Fiji to countries increase the cost of program operations. Once vaccines arrive in country, weak and inefficient logistics systems (e.g. stock management, distribution, data) can prevent reliable supply of vaccines at service delivery sites.

The cold chain generally has adequate capacity but is of varying age and quality. A program of phased replacement with solar technology is underway, but getting skilled technicians to remote locations to service equipment is problematic.

Surveillance, particularly for acute flaccid paralysis (AFP), once the flagship of polio eradication, has faltered, in some countries, as they experience no cases of wild poliovirus. PICs excluding PNG are considered a single epidemiological block and as a blocak have generally notified expected rates of non-polio AFP cases.<sup>2</sup> However within the block some countries with larger populations including Samoa, French Polynesia, Guam and FSM have either not reported or reported significantly lower numbers of cases than expected.

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<sup>2</sup> In 2014 the non-polio AFP rate was 1.5/100,000 population under 15 years of age (against the expected rate of 1/100,000 population).



The technical effectiveness of development partners, mainly the United Nations Children’s Fund (UNICEF) and WHO, is reported to be high. They contribute widely to planning, operations support, disease surveillance, strengthening the cold chain, vaccine procurement and introduction of new vaccines in countries. Demand from countries often exceeds their capacity to respond. A pilot program is underway in three countries to implement a “one-UN” model that may offer broader lessons in integration of immunisation with wider PHC services.

There are clear opportunities to improve the aid effectiveness of all development partners’ (DP’s) support<sup>3</sup>. Some countries are making progress, for example in better aligning DPs support to the national plan and budget and to country systems of finance and accountability. Some are reviewing the quality of DPs support against aid effectiveness criteria during annual reviews. Some DPs continue to provide support outside of the national planning, budget and planning framework, and their support can be seen as *ad hoc* and disruptive at times.

The cost of immunising a child has risen markedly following introduction of new and more expensive vaccines. Sustainability is a mounting concern and for many countries the cost may be unaffordable without continuing external support<sup>43</sup>.

Despite future financing concerns related to the cost of new vaccine introduction, our view is that lack of funds *per se* is not always the main reason that countries are currently faltering. A major gap appears to be around leadership and accountability, with the need for greater oversight by managers at all levels, and more effective use of information for management. There are examples of good practice, such as regular review by senior managers of core national indicators to monitor progress, and joint annual reviews of sector progress.

Immunisation is a regional public health good. Given continuing threats from vaccine preventable diseases, particularly importation of measles and polio, there is a strong case for greater oversight at the regional level to monitor risk, highlight key issues of concern and stimulate coordinated action. It could help mobilise support, including from PIC to PIC, in the event of outbreaks, and encourage DPs to focus resources on areas of need.

Immunisation has been very high on international agendas and at the core of primary care services for decades. The impression from the limited country visits during this review is that it is now regarded as one among many priorities. The crisis of non-communicable diseases was reported as *the* main challenge facing ministries of health. Global vaccine coverage stagnated in the 1990s as donor attention was directed to other health challenges. A similar shift may now be occurring in the Pacific.

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<sup>3</sup> Donor Partners to the PICs’ immunisation programs include WHO, UNICEF, DFAT, MFAT, United States Agency for International Development (USAID), US Centres for Disease Control (CDC), France and Japan International Cooperation Agency (JICA).

<sup>4</sup> This is particularly the case for Small Island States, including micro-states in large oceans, where *per capita* costs to serve small, very dispersed island populations are among the highest operational costs in the world.

## Recommendations

### Pacific Island Countries

1. Strengthen leadership, management and accountability for immunisation in the face of multiple health priorities and stretched budgets.
2. Strengthen key elements of health systems that impact on immunisation performance, to ensure universal access to services, particularly for underserved populations.
3. Prioritise routine immunisation services and introduce a second dose of measles vaccine if not already part of the schedule. Periodic supplementary immunisation activities have a place in boosting measles immunity but should not detract attention from raising routine coverage.
4. Review national surveillance systems and reinforce zero reporting and outbreak response protocols.
5. Improve data quality and data management to improve program effectiveness. Periodic coverage surveys, and data quality assessments have a place where the reliability of routine information systems is of concern.
6. Maintain inventories of equipment to plan and budget for phased replacement of the cold chain. Dedicated specialist staff should carry out maintenance of new technologies such as solar panels.
7. Continue using the Vaccine Independence Initiative for procurement of vaccines and other health-related items. Strengthen links between national EPI and central medical stores/pharmacy units.
8. Review school health policy to maximise opportunities to increase vaccine coverage.
9. Maximise opportunities to integrate immunisation programming (planning, budgeting, outreach, supervision and training) with other PHC initiatives.
10. Strengthen oversight and accountability mechanisms to improve immunisation performance, including the effectiveness of development partner support in the Pacific region.
11. Include immunisation as a standing agenda item at meetings of HoH and Ministers of Health linked to a broader discussion on health security within the region.

### Development partners

12. Improve the effectiveness of development assistance to countries through support of national planning/ budgeting processes and priorities within the national plan. Coordinate support for challenging countries around tailored solutions based on country-specific analysis.
13. Maximise opportunities for integration of immunisation support with other health interventions particularly at the primary level.
14. Commission an analysis of the scale and limitations of current development practice. For example, to quantify the level of fragmentation and duplication, transaction costs for government, volatility of external finance and technical assistance, and its impact on rational planning and implementation.

## **Pacific Island Countries and Development Partners**

15. Establish a standing Strategic Advisory Group (SAG) on immunisation for the Pacific

# 1. Introduction

## 1.1 Background

Strengthening disease prevention programs including immunisation has long been central to primary health care (PHC) in all countries. Immunisation is regarded as one of the most cost-effective health strategies, protecting countries from major health challenges that contribute to their mortality and disease burden, and pose threats to the collective health, economic and trade interests of the region.

Most Pacific Island Countries (PICs) have made major gains in routine vaccine coverage<sup>5</sup>. All countries remain polio-free, have reduced cases of maternal and newborn tetanus, reduced Hepatitis B (HepB) prevalence and introduced a number of new vaccines that will further improve health outcomes. Periodic outbreaks of measles have been limited to those few countries that have failed to achieve consistently high levels of measles containing vaccine (MCV) coverage<sup>6</sup>. Due to the highly infectious nature of the virus and the high mobility of the island populations, measles outbreaks pose an ongoing threat to all countries in the region and beyond.

Despite significant progress, immunisation programs in the Pacific face many challenges, and gains remain fragile. PICs tend to experience a range of difficulties related to delivery of services to remote, scarcely populated islands and to weaknesses in the underlying health system that limit provision of quality PHC to all communities.

This rapid and broad review has attempted to assess immunisation performance and the impact and effectiveness of development assistance for immunisation over the past decade. The intended audience is PICs and their health development partners (DPs). The review has looked for opportunities to improve the effectiveness of support to countries and to strengthen oversight and accountability across the region<sup>7</sup>.

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<sup>5</sup> The Secretariat of the Pacific Community (SPC) includes 22 PICs in its list of members: American Samoa, Cook Islands, Federated States of Micronesia (FSM), Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, Niue, Northern Mariana Islands, Palau, Papua New Guinea (PNG), Pitcairn Islands, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, and Wallis and Futuna.

<sup>6</sup> In 2014 measles outbreaks occurred in FSM, (index case from Philippines), Solomon Islands (index case from PNG) and Vanuatu. (index case Solomon Islands).

<sup>7</sup> Heads of Health of PICs agreed for this assessment to be undertaken, and SPC facilitated that agreement.

## 2. Objectives, methodology, limitations

### 2.1 Objectives

The scope of work is set out in the terms of reference (ToR) at Annex 1. The ToR were formally approved by a sub-group of Heads of Health (HoH), members of the Quintilateral group and Unicef<sup>8</sup>. The task was guided by aid quality and aid effectiveness principles. Specific objectives were:

- To undertake a broad strategic review of immunisation programs and country and regional support (progress, current issues and challenges, bottlenecks to improving immunisation performance) with a focus on those countries with the lowest coverage rates<sup>9</sup>.
- Develop, based on the results of the review, a working draft of a roadmap to improve the effectiveness of immunisation programs in the region, again with a focus on low performing countries and DP support.

### 2.2 Methodology

The review aimed to build on, and add value, to existing documentation. It involved a desk review of key materials related to immunisation and development effectiveness over the past 10 years, supported by visits to three countries (Solomon Islands, Kiribati and Samoa) and interviews with a wide range of stakeholders. During country visits the team met key informants in DPs, ministries of health and other ministries, a range of health facilities and vaccine stores. The team provided feedback to representatives at the end of each country visit, and held a debriefing session of findings and recommendations for representatives of regional health organisations in Suva. To supplement the field observations, we relied on the previously undertaken desk reviews of each country. The schedule of country visits is at Annex 2, a list of those consulted at Annex 3 and main documents reviewed at Annex 4. Summary country reports are at Annex 6. Further discussions were held with staff of WHO, UNICEF and others in Suva to improve early drafts.

The review team comprised a health specialist and team leader (Stewart Tyson) and an immunisation specialist (John Clements). We were joined for the country visits by a staff member from the sub-regional office of the Secretariat of the Pacific Community (SPC) (throughout). World Health Organization (WHO) in Kiribati and Samoa and United Nations Children's Fund (UNICEF) staff/consultants in Kiribati, Solomon Islands and Samoa represented their agency and provided further depth and insights. The participation of the SPC member throughout was of great benefit in understanding the context and in sounding out emerging recommendations.

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<sup>8</sup> The Quint group comprises DFAT, NZMFAT, World Bank, WHO and SPC.

<sup>9</sup> The review will consider the collective impact of immunisation support provided by development partners the sub-region over the past decade. The review will focus on Kiribati, Solomon Islands and Samoa however it is anticipated that the findings and recommendation will be relevant to many PICS.

### 2.3 Limitations

There are severe limitations to such a brief mission. Only three island countries were visited and these did not reflect those with the lowest immunisation rates. Each review was conducted over two to three working days, too short a time to carry out an in-depth review of the program. It is clearly impossible to understand or do justice to the range of complex issues facing the 22 countries of the Pacific and to extrapolate findings from these brief visits. Despite this, a number of common issues emerged repeatedly through document review and interviews.

Representatives from the sub-regional offices of UNICEF and WHO were unable to take part throughout the visit program as planned however UN staff provided substantive input throughout the process and to various drafts of the report.

Data inconsistencies were common in all countries. There was also difficulty in verifying, at times conflicting statements from the small numbers of informants. Where very different views were heard from more than one source we have included them in the text.

Other than for issues related to financial management (World Bank) we could find no detailed country analysis on the effectiveness of DP assistance.

## 3. Observations - Immunisation

### 3.1 Context

While there are considerable differences between the 22 PICs (Table 1) many face common challenges. Delivering services is very costly to small, widely dispersed communities spread across a vast area of ocean. Many countries face a lack of basic infrastructure including transport and communication links. Maintenance of a reliable cold chain is problematic and there is a shortage of skilled health workers, particularly in rural areas. Many island communities do not have access to quality primary health care. There is extensive population mobility between islands and migration to urban centres in some countries. PICs are susceptible to extreme weather events including cyclones, floods and other disasters that can divert resources (both human and financial) to immediate needs and disrupt regular services for many months.

**Table 1 Contextual differences within Pacific Island Countries**

	High	Low
Urban	100%	13%
Population size	7.3 million	1,200
Population density (per square mile)	504	6
Annual population growth/decline	+2.5%	-0.4%
Flight of the tertiary educated	81%	8%
Communicable disease burden	48%	12%
GDP growth (2007-12)	+5%	-0.8%

Source: Presentation at Pacific Health Ministers Meeting April 2015

### 3.2 Relevance, impact, outcomes

#### 3.2.1 Relevance

Immunisation is a core element of PHC and widely accepted as a cost-effective, high-impact intervention and global “best buy” in public health. It prevents communicable diseases that potentially threaten all ages<sup>10</sup>. In most settings it is provided equitably to all children. It has made substantial contributions to reducing childhood mortality, morbidity and the costs of ill health. Around 17 per cent of all deaths in children under five years old globally are from vaccine preventable diseases (VPDs)<sup>11</sup>. New vaccines being introduced in PICs will further reduce child mortality due to pneumonia and diarrhoea. Immunisation of infants and children with Human Papillomavirus Vaccine (HPV) and HepB also protect against cervical and liver cancers later in life. Immunisation should be a high priority for government health expenditure.

<sup>10</sup> PICs are no strangers to infectious diseases. In 1875, between 27,000 and 50,000 Fijians died during a catastrophic outbreak of measles in a virgin population. Other Pacific islands suffered similarly. (Cliff A, Haggett P, Smallman-Raynor M. Measles. An historical geography of a major human viral disease. Blackwell. 1993. Page 129).

<sup>11</sup> Global Immunization Data. UNICEF 2012. [www.unicef.org](http://www.unicef.org). 66031/2 – 4 January 2016

### 3.2.2 Impact

Over the past 15 years, the overall impact of immunisation activities across the 22 PICs has been impressive. Since the Western Pacific Region (WPR) was certified as polio-free in 2000, all countries have remained polio-free, despite the continued threat of wild poliovirus importations from other countries. Endemic transmission of measles has been interrupted and Hepatitis B infection among children has been substantially reduced. Safer deliveries and administration of tetanus toxoid to pregnant women has resulted in a marked reduction in cases of maternal and neonatal tetanus (MNT), with the majority of cases (285 cases since 2000) being reported from only one country – Papua New Guinea (PNG). MNT has now been eliminated in all other PICs<sup>12</sup>. The benefits continue to increase with the introduction of new vaccines. Overall immunisation coverage is relatively high, with the exception of a few countries.

Routine and supplementary immunisation activities have reduced the number of reported measles cases dramatically. The PICs, other than PNG, are considered as one epidemiological block for the purposes of measles and polio surveillance and verification/certification. Populations at highest risk for exposure to measles virus are those from countries or territories that have historical associations with other countries that are currently experiencing measles outbreaks. Vanuatu and Solomon Islands are at high risk of measles due to their low coverage and proximity and frequent cross border exchange of goods and services with PNG (in the case of Solomon Islands); the United States-affiliated countries and territories (American Samoa, Guam, Mariana Islands, Marshall Islands, Micronesia, and Palau) have close links with the Philippines where measles is endemic as in PNG.

The WPR was the first WHO Region to include infant HepB immunisation in the national programs of all its Member States. Palau, American Samoa and Cook Islands have been verified as having reached the final goal of HepB control (<one per cent sero-prevalence among five year olds) and Tonga has been verified as having reached the interim goal (< two per cent sero-prevalence). Six countries have submitted data for verification. Three PICs (Solomon Islands, Kiribati and Vanuatu) require further program improvement. Sero-surveys have been planned/are ongoing in other countries.

Immunisation has evolved dramatically from the 1980s to 2015. With the global push for Universal Child Immunisation by 1990, the decade of the 1980s resulted in substantial investment and gains globally. But immunisation stagnated in the 1990s, with many countries losing gains. Following the launch of the Global Alliance for Vaccines and Immunisation (GAVI) in 2000, there has been a renewed global focus. The Global Vaccine Action Plan (GVAP) and Global Polio Eradication Initiative (GPEI) added further impetus<sup>13</sup>.

While eradication of polio has been a long standing goal there has been a shift in ambition from disease control to elimination for a number of VPDs. Immunisation schedules have become more complex with substantial increases in the number of

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<sup>12</sup> [http://www.wpro.who.int/immunization/news/vaccination\\_week/en/](http://www.wpro.who.int/immunization/news/vaccination_week/en/)

<sup>13</sup> Global Polio Eradication Initiative (GPEI). [www.polioeradication.org](http://www.polioeradication.org)  
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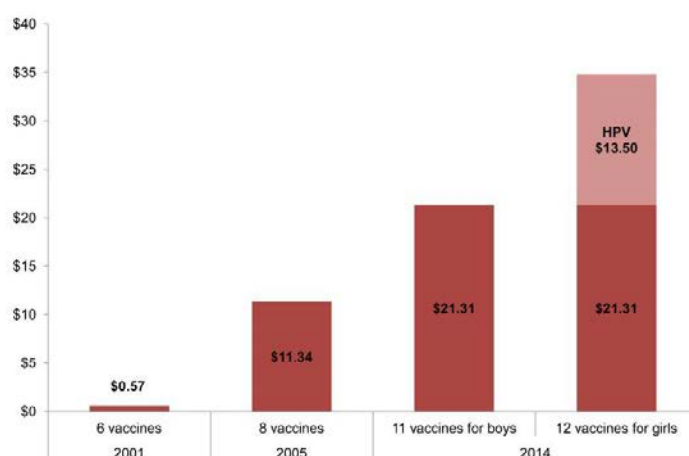
vaccines, doses, visits, and cost of vaccines<sup>14,13</sup>. This has led to an increase in the cost of fully immunising a child (Table 2) and of vaccines (Figure 1). There is now the risk that such an increase will become unsustainable for some countries without external assistance.

**Table 2 Change in immunisation indices 1980-2012**

Index	1980	2012	Increase (times)
Number of vaccines	6	14	2.5x
Doses per child	8	33	3x
Vaccine volume per fully immunised child	28ml	327ml	11x
Cost per fully immunised child including delivery	US\$15	US\$35	2.5x
Population growth	4 billion	7 billion	1.7x

Source: GAVI presentation by Director EPI to WHO SAGE meeting, Geneva April 2015

**Figure 1 Vaccine cost per fully immunised child (US\$)**



Source: UNICEF contract prices as of May 8, 2014. Costs based on lowest-available price to UNICEF. Legend: HPV – Human Papillomavirus Vaccine

<sup>14</sup> Cost includes vaccine and costs of training health workers to deliver them  
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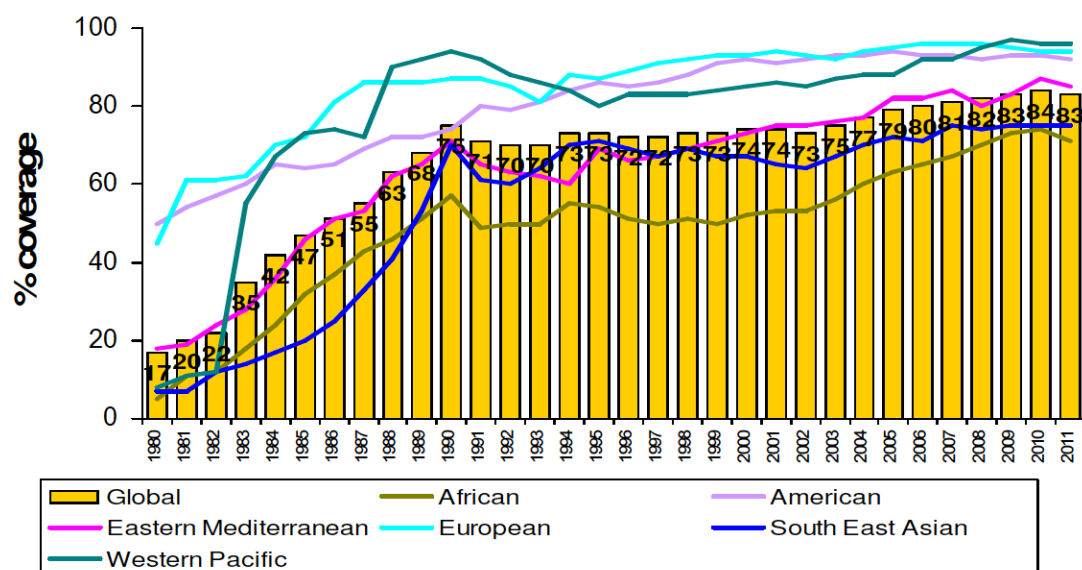
### 3.2.3 Outcomes (Coverage)

#### 3.2.3.1 General picture

Determining the accuracy of reported coverage rates is problematic. Recent Demographic and Health (DHS) surveys in PICs all suggest much lower coverage than reported levels or best estimates from the WHO/UNICEF joint reporting form. Much of this can be explained by the differing methodologies and ages surveyed with the DHS methodology being somewhat less applicable to immunisation coverage. A further factor is the uncertain denominator used in a number of countries. For routine reporting, Samoa has used an estimate of birth numbers that remained the same for a number of years rather than population estimates from the census. Effective birth registration underway in some countries will help improve accuracy.

Coverage rates are generally good, but there has been a trend, over the past two to three years, in some PICs, of declining or stagnating levels, consistent with the global picture (Figure 2). There is also considerable variation both between countries and between years within countries. While the outside observer may expect small island states in the Pacific to have similar conditions and therefore similar coverage rates, this is not the case.

Figure 2 Global coverage with DTP3 1980-2011<sup>15</sup>



<sup>15</sup> This graph does not show PICs' coverage specifically, but these countries are included in the WHO/WPR data. However, being so much larger than PICs, China contributes disproportionately to the overall picture.

Table 3 DTP-3 coverage in PICs 2010-14

Year	DTP-3 coverage (%)				
	2010	2011	2012	2013	2014
American Samoa	<u>N</u>	N	N	N	90
Cook Islands	<u>99</u>	93	98	98	99
Fiji	<u>99</u>	99	99	99	99
French	<u>N</u>	N	N	N	~99
Kiribati	<u>91</u>	99	94	95	75
Marshall Islands	<u>94</u>	87	80	79	78
FSM	<u>85</u>	84	81	81	81
Northern Mariana	<u>N</u>	N	N	N	90
Nauru	<u>99</u>	99	79	87	95
Niue	<u>99</u>	98	98	99	99
Palau	<u>69</u>	84	89	99	95
PNG	<u>56</u>	61	63	68	62
Samoa	<u>87</u>	91	92	95	91
Solomon Islands	<u>90</u>	99	99	94	88
Tonga	<u>82</u>	82	77	82	82
Tuvalu	<u>89</u>	96	97	90	90
Vanuatu	<u>65</u>	65	64	64	64

Source: Data from WHO country profiles 2015. Coverage data are WHO/UNICEF estimates except for 2014 data that have not yet been accommodated by WHO/UNICEF.

Data in **RED** are for values less than 80%.

Data in **YELLOW** are values between 80-89%

Data in **GREEN** are values above 90%

N – not known as these countries report directly to France, or US and do not report disaggregated data to WHO

Table 3 shows the trends in Diphtheria, Tetanus, Pertussis (DTP-3) coverage for PICs. Half show consistently high coverage rates for DTP-3 for the last four to five years. A number of PICs are dropping behind or failing to increase their coverage to adequate levels (Kiribati, FSM, Marshall Islands, PNG, Tonga, Vanuatu). Faltering coverage is of particular concern in Solomon Islands, PNG and Vanuatu. Further improvements in coverage will require tailored solutions based on country specific analysis to address health systems issues, and improve access to underserved and hard to reach children<sup>16</sup>.

High routine coverage is the bedrock for all other immunisation activities. Raising routine immunisation rates to high levels and sustaining them are priorities for all

<sup>16</sup> Summary notes: PIPS meeting June 23 2015  
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countries but is not easy. Knowledge of which children are unimmunised is essential to planning corrective strategies. Despite high reported DTP1 coverage in Samoa, the 2014 DHS data indicated that only 50 per cent of children had received all vaccines by 18 months age as recommended. While the survey indicated some improvement since the 2009 survey it highlighted that eight per cent of children had received no vaccines. No single strategy can be applied to every PIC to achieve best coverage levels. Supplementary immunisation activities (SIAs), periodic immunisation pulses and special immunisation days are all used to boost immunity but many would not consider these as routine activities.

Countries should introduce new vaccines on the basis of a feasibility assessment of evidence including affordability and the capacity of the health systems and immunisation services. Adding new vaccines to the schedule may be inappropriate until programs have reached and sustained high routine coverage<sup>17</sup>.

Vaccine doses scheduled around the time of birth (BCG and HepB) pose special problems. For babies born in health facilities (the proportion varies widely between PICs), providing a birth dose is relatively straightforward, but those babies delivered at home present difficulties.

Typically coverage is high until the DTP-3 dose, but falls for vaccines given later in the schedule such as MCV and doses after the first year of life. These require additional strategies. Possible approaches include:

- Scheduling an immunisation visit in the second year of life to deliver vaccines such as DTP-4, MCV-2 and eventually IPV-4 and to provide catch up immunisation for those vaccine doses missed during the first year of life.
- Establishing routine school immunisation record check and follow up immunisation with missed doses of measles, rubella and other vaccines so all children can enter school protected from VPDs. Compulsory school-entry immunisation is debatable as it may obstruct the attendance of children from primary school in countries where school attendance is already below target.
- Countries provide MCV as measles, mumps and rubella vaccine (MMR) or as measles and rubella vaccine (MR) at 12 or 15 months with a second dose (MCV-2) between 13 months and six years. All but three PICs provide a second dose of MCV. Table 4 shows MCV coverage across the Pacific from 2010-14. The picture is very different from DTP-3 coverage. Many more countries show persistent low levels over many years. MCV-1 coverage improved in 2014 with 11 PICs achieving over 90 per cent. Guam (included as, despite inadequate data, coverage is low), Marshall Islands, PNG, Tonga, and Vanuatu show persistent low levels of coverage. MCV-2 coverage levels are lower and may reflect relatively recent introduction. By 2015 Vanuatu, Solomon Islands and PNG had not yet introduced MCV 2 into the national schedule.

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<sup>17</sup> GAVI would only support new vaccine introduction in its original funding phase if DTP routine coverage was high enough. Instead, it would offer Health Systems Strengthening (HSS) support.

Table 4 Measles containing vaccine coverage in PICs 2010-2014

Year	Coverage (%)									
	2010		2011		2012		2013		2014	
	MCV1	MCV2	MCV1	MCV2	MCV1	MCV2	MCV1	MCV2	MCV1	MCV2
American Samoa	No data								85	N
Cook Islands	99	98	89	96	97	98	97	95	98	98
Fiji	94	94	94	94	94	94	94	94	94	94
French Polynesia	No data								~99	N
Guam	No data								82	N
Kiribati	89	21	90	61	91	9	91	84	91	84
Marshall Islands	97	90	88	74	78	58	79	56	79	53
FSM	80	75	92	75	91	70	91	75	91	75
Nauru	99	99	99	99	96	81	97	88	98	94
New Caledonia	No data								~99	N
Niue	99	99	99	98	99	98	99	99	99	99
Palau	39	39	86	83	91	86	99	98	83	81
PNG	55	--	60	--	67	--	70		65	--
Samoa	61	45	67	65	85	67	99	87	91	78
Solomon Islands	85	--	90	--	99	--	93	--	93	--
Tonga	68	67	66	66	62	62	67	67	67	67
Tuvalu	85	87	98	90	98	93	96	84	96	84
Vanuatu	53	--	53	--	5	--	53	--	53	--

Source: Data from WHO country profiles. Coverage data are WHO/UNICEF estimates.

Data in **RED** are values less than 80%.

Data in **YELLOW** are values between 80% and 89%

Data in **GREEN** are values above 90%

N – not known as these countries report to directly to France, or US and do not report disaggregated data to WHO.

### 3.3 Accelerated disease control (measles/rubella, polio, hepatitis B)

#### 3.3.1 Measles and rubella

Routine and supplementary immunisation activities have reduced the number of reported measles cases in the WPR by 96 per cent from 1974 to 2008; and 25 countries and areas have either eliminated or nearly eliminated measles. The Member States of the WPR resolved to eliminate measles, that is, the sustained interruption of endemic measles virus transmission<sup>18</sup>. The core strategies include achieving and maintaining 95 per cent population immunity against measles virus through routine and/or supplementary immunisation activities, sensitive and timely case-based surveillance, and access to an accredited laboratory to confirm suspected cases and detect virus. Measles incidence in 2012 was at an all-time low of 5.9 cases per million population. However, despite reasonably high coverage reported through routine services and SIAs, measles outbreaks have occurred in PICs in the last decade (Table 5). Of concern is that current coverage levels in many PICs suggest a vulnerability to future outbreaks.

<sup>18</sup> Articulated in Regional Committee resolutions in 2003, 2005 and 2010  
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attributed to an earlier failure to achieve high population immunity among age groups that had been targeted by the routine immunisation program and measles SIAs<sup>21</sup>.

Examination of the data for MCV reveals a rather different picture from DTP-3 data. MCV schedules vary, but in general, all countries administer MCV-1 at 12 or 15 months. Most PICs had achieved over 90 per cent MCV-1 coverage in 2014. The low rates in Marshall Islands (79 per cent), PNG (65 per cent), Tonga (67 per cent) and Vanuatu (53 per cent) are of particular concern. Coverage rates for the second dose of MCV (MCV-2) are more telling. The scheduled age varies widely (15 months, 18 months, four years, or six years) and did not seem related to high or low coverage particularly. Only four countries reported MCV-2 rates above 90 per cent. Marshall Islands (53 per cent), Tonga (67 per cent), FSM (75 per cent) and Samoa (78 per cent) are of concern and are not reaching high enough coverage with MCV-2 to ensure measles control in the face of an introduced case. These countries need to take additional measures to ensure adequate measles control.<sup>22</sup>

PNG, Vanuatu and Solomon Islands, have not yet introduced a second dose of MCV. Solomon Islands is planning introduction in 2016 and Vanuatu has introduced MR in 2015 but not yet planned to introduce MCV-2.

The 2013 Vanuatu DHS indicated that measles coverage for one year-olds was 53 per cent (compared with 66 per cent in 1990). The measles data in Vanuatu quoted in the DHS is a reasonable match with the information on measles vaccine coverage amongst one-year olds reported by the Global Health Observatory Data Repository<sup>23</sup>. This provides a long time series of data, which shows that coverage declined gradually for about a decade after 1998, and has since remained static. Coverage was at its highest in the mid-1990s. The situation in Vanuatu appears to be slightly better for measles vaccine than for most other vaccines - between 2007 and 2014 coverage dropped for all other vaccines. The DHS reported rate of 33 per cent fully immunised children is extremely low. Informants suggested that ministers of health and heads of departments have not remained in office long enough to provide continuity of leadership and institutional memory to run programs successfully. Following the devastating 2015 cyclone, there has been strong support from partners. As a result, it is possible that coverage has markedly improved since then.

### 3.3.2 Measles SIAs

Countries implement SIAs as part of their measles control strategy. From 2000-15 WHO recorded 121 SIAs in the WPR including 45 in Pacific countries, with most carried out in PNG and Vanuatu<sup>24</sup>. Well-executed SIAs in the Pacific have delivered positive results; in 1999, 14 countries performed coordinated SIAs with the result that measles transmission virtually stopped for several years. Other SIAs have not had the desired impact; The 2012 SIA in Solomon Islands following severe floods did not

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<sup>21</sup> Unprotected (non-immune) individuals include those who failed to seroconvert after immunisation or were not immunised.

<sup>22</sup> This is an interpretation by consultants of the immunisation data presented above. All data is from WHO country profiles. Coverage data are WHO/UNICEF estimates.

<sup>23</sup> Global Health Observatory Data Repository. <http://apps.who.int/gho/data/node.main.A826>

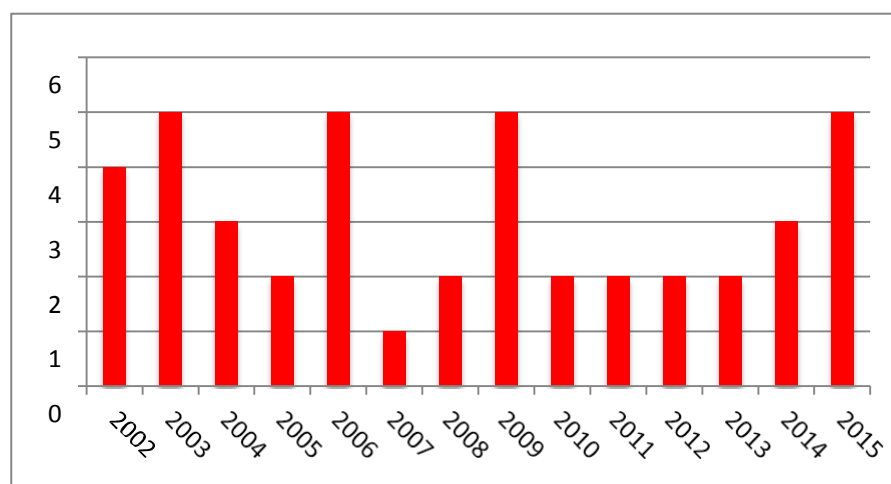
<sup>24</sup> Source: WHO (2012). Retrospective measles data on supplementary immunization activities 2000\_2010. Available from: [http://www.who.int/immunization\\_monitoring/data/](http://www.who.int/immunization_monitoring/data/)



prevent an outbreak of measles from occurring within two years. It is likely that coverage was less than reported, or the efficacy of the vaccine had been compromised through inappropriate transport and/or administration (or both). In contrast, countries such as French Polynesia have accomplished high levels of routine coverage with MCV-1 and MCV-2 through a functioning health system, without resort to SIAs<sup>25</sup>.

The most common reason for conducting an SIA has been the need to protect against or react to measles outbreaks. Samoa has used SIAs to immunise age-cohorts of under-immunised individuals that resulted from low coverage in previous years. The 2014 SIA in Solomon Islands was in response to an outbreak of measles following the floods earlier in the year, and in Vanuatu in 2013 in response to low routine coverage, and in 2015 as part of a strategy to introduce measles and rubella containing vaccine. Fiji carried out an SIA in 2011 in response to an outbreak of rubella. (Note that the 2015 figure was that reported in July 2015 and includes planned SIA.) Figure 3 shows the frequency of SIAs in PICs from 2002-15. There has been little change in frequency over more than a decade. In 2014, FSM undertook SIAs in three states in response to an outbreak. In 2015, PNG undertook two SIAs (one major campaign and one catch-up).

**Figure 3 Number of supplementary immunisation activities in PICs 2002-2015**



Source: WHO data: Summary\_Measles\_SIAs\_2000\_to\_2011.xls<sup>26</sup>

DPs have generally responded quickly and positively to requests for support of SIAa when an outbreak threatens children or where a vulnerable age cohort of under-immunised children has been identified. It is important to conduct effective SIAs that attain high coverage with potent vaccines. Poorly executed SIAs may not prevent an outbreak occurring in the next few years.

SIA can deliver integrated services to underserved and marginalised populations and improve equity. The support can lead to improved staff skills and performance that may positively impact other PHC services. The duration of the benefits is unclear and there

<sup>25</sup> French Polynesia is the best example to date

<sup>26</sup> WHO (2012). Retrospective measles data on supplementary immunization activities 2000\_2010. Available from: [http://www.who.int/immunization\\_monitoring/data/](http://www.who.int/immunization_monitoring/data/) Summary\_Measles\_SIAs\_2000\_to\_2011.xls and from WPRO data on line



can be diversion effort from vital health in For example, a review in South Africa documented a significant decrease for eight program indicators after an SIA. The total number of fully immunised infants decreased by 29 per cent during the month of SIA implementation. The review concluded that SIA campaigns might negatively impact health systems during the period of implementation by disrupting regular functioning of services and diverting resources from other activities<sup>27</sup>.

There remains an unequivocal risk of measles outbreaks in PICs as with the rest of the Western Pacific countries. Countries such as PNG, Solomon Islands and Vanuatu have MCV-1 coverage low enough to sustain measles transmission and these three countries have not yet introduced a second routine dose of measles vaccine. Measles has been transmitted from one island to another. Lower performing countries undoubtedly place all other countries in the region at potential risk<sup>28</sup>. However, the risk would likely be minimal for countries that have achieved high MCV-1 and MCV-2 coverage.

As countries have introduced MCV-2 into their routine schedule, and as coverage of this dose has risen, the pool of unimmunised children has fallen. Adding a second dose into the routine system should obviate the need for an SIA if coverage for both doses is at 95 percent. However, a number of countries have not yet reached high coverage with MCV-2. It is inevitable that SIAs will continue to be used to increase the immunity profile when numbers of susceptible children exceed one birth cohort in countries with fragile health systems and measles coverage below 95 percent.

The decision to undertake an SIA should not be taken lightly as there are considerable practical difficulties in the Pacific environment. The logistics effort in reaching far-flung islands with vaccine and personnel is huge and the costs are high. While SIAs have specific roles and will probably continue to be relevant for some time to come, the preferred strategy should be achieve high routine coverage. SIAs should be well designed to meet specific needs, be carried out effectively, and should include other relevant public health interventions to increase the health impact and make them more cost-effective<sup>29</sup>. Little lasting benefit is likely to be derived from a poorly executed SIA.

### 3.3.3 Polio

The last indigenous case of wild poliovirus in the Western Pacific Region (WPR) was reported in Cambodia in 1997. The Region was certified polio-free in 2000<sup>30</sup>. Since certification, the Region has experienced three wild poliovirus importations. In response, the transmission of wild poliovirus following the importation was rapidly stopped.

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<sup>27</sup> Vergueta S, Jassat W, Hedberg C, Tollman S, Jamison D, Hoffman K. Measles control in Sub-Saharan Africa: South Africa as a case study. *Vaccine*, Volume 30, Issue 9, 2012 21 February, 1594–1600.

<sup>28</sup> In 2014 measles spread was tracked from PNG to Solomon Islands to Vanuatu and from the Philippines to FSM

<sup>29</sup> Vince JD, Datta SS, Toikilik S, Lagani W. Integrated package approach in delivering interventions during immunisation campaigns in a complex environment in Papua New Guinea: a case study. *Vaccine*. 2014 Aug 6;32(36):4614-9.

<sup>30</sup> <http://www.wpro.who.int/topics/poliomyelitis/en/>

As part of the “polio endgame”<sup>31</sup> all ten PICs who are using exclusively OPV in their immunisation program made formal commitments in 2014 to introduce at least one dose of inactivated polio vaccine (IPV) by the end of 2015<sup>32</sup>. Kiribati introduced IPV in June 2015 and Solomon Islands, Tuvalu, Tokelau, Nauru, Samoa and Cook Islands have followed since. The remaining countries will introduce IPV by December 2015. Tuvalu and Tokelau have introduced an all IPV schedule, thus withdrawing OPV altogether. UNICEF and WHO are providing support including vaccine and operational funds for introduction of IPV and implementation of the switch plan.<sup>33</sup>

Table 6 OPV3 coverage rates 2012/13/14 for selected PICs

Country	OPV-3 Coverage (%)*		
	2012	2013	2014
Cook Is	98	98	99
Fiji	99	99	99
Kiribati	92	91	79
Marshall Is	80	79	77
FS Micro	81	81	81
Nauru	79	87	95
Niue	98	99	99
Palau	89	99	95
Samoa	95	95	91
Solomon Is	99	99	94
Tonga	79	84	84
Tuvalu	97	90	90
Vanuatu	65	65	65

Data in **RED** are values less than 80%.

Data in **YELLOW** are values between 80% and 89%

Data in **GREEN** are values above 90%

Table 6 shows that coverage for OPV-3 is below 90 per cent for five countries. This raises the question of whether these countries would be able to avoid a significant polio outbreak if a single case were to be introduced<sup>34</sup>. A number of other health conditions mimic polio in presenting with acute flaccid paralysis (AFP). Surveillance needs to identify cases of AFP, and then verify that none of these cases are polio<sup>35</sup>. The AFP surveillance data indicates that the PICs as an epidemiological block (minus PNG) have met the non-polio AFP rate over recent years. However some individual PICs with larger populations, for example, Samoa, French Polynesia, Guam and FSM have either not reported or reported significantly fewer cases than expected. Surveillance may have faltered, as countries experience no cases of wild poliovirus and perhaps complacency sets in.

<sup>31</sup> The polio “endgame” is the group of strategies needed globally to finally eradicate and maintain global eradication of wild poliovirus. This includes switching from oral polio vaccine (OPV) to inactivated polio vaccine (IPV).

<sup>32</sup> The polio “endgame” is the group of strategies needed globally to finally eradicate and maintain global eradication of wild poliovirus. This includes switching from oral polio vaccine (OPV) to inactivated polio vaccine (IPV).

<sup>33</sup> The switch plan involves changing the routine immunisation schedule from the use of (OPV) alone to the introduction of IPV and the introduction of bivalent OPV, and the eventual cessation of OPV.

<sup>34</sup> A single case of imported polio is regarded as a public health emergency.

<sup>35</sup> There is an expected population rate of AFP from causes other than polio. If countries report too few non-polio AFP cases it indicates that the surveillance system is not effective.

### 3.3.4 Hepatitis B

In 2013, the WPR adopted the goal of reducing the prevalence of HepB infection to less than one per cent among young children by 2017, with a milestone to reduce prevalence to less than two per cent for 2012. A serological survey is required to measure whether the reduction target has been reached. As of January 2015, the WPR Hepatitis B Expert Resource Panel has verified achievement of the <1 per cent goal in 12 countries. Cook Islands, American Samoa and Palau have achieved the final goal. Tonga has achieved the interim goal. Six other countries have conducted sero-surveys and have data ready for submission. Overall regional coverage in 2013 was 91 per cent for HepB-3 and 76 per cent for HepB birth dose. Major challenges include ensuring health facilities have supplies of monovalent vaccine for the birth dose and reaching home births<sup>36</sup>. Nearby countries such as Indonesia have well-trying strategies in place to reach home births.<sup>37</sup>

### 3.4 New vaccine introduction

A goal of the Regional Framework for Implementation of the Global Vaccine Action Plan in the Western Pacific is to introduce new and improved vaccines and technologies<sup>38</sup>. The framework recognises that countries need to make evidence-based decisions, taking into account disease burden as well as surveillance, cost, the role of other disease prevention control measures, vaccine characteristics, vaccine supply, and the state of the immunisation program and health system. Countries need to plan for long-term financing of any vaccine they choose to introduce. PICs are fully involved in this planning process but the consultant team were unable to determine if this remains at the level of Expanded Program on Immunisation (EPI) coordinators or HoH, and whether long-term costs are reflected in overall health budgets.

All PICs have introduced *Haemophilus influenzae* B (Hib) vaccine and HepB. Despite the costs, several countries have already introduced, or are considering introducing, one or more of the newer vaccines including pneumococcal conjugate vaccine (PCV), rotavirus vaccine (RV), MR and IPV. Eleven countries have introduced, or partially introduced, HPV vaccine for adolescent girls<sup>39</sup>. Kiribati and Vanuatu introduced the vaccine as a pilot in 2010 and 2013 respectively through the Australian Cervical Cancer Foundation but there have been questions around the sustainability of the introduction. Solomon Islands is currently piloting HPV in two provinces with GAVI support.

These new vaccines will result in substantial health benefits in the future. However it is clear that visited countries have not adequately considered the long-term financing needs and may face difficulties in sustaining the programs without continuing external financial assistance. Table 7 lists actual new vaccine introduction in Pacific Islands.

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<sup>36</sup> Monovalent hepatitis B vaccine contains only HBV, and is not combined with other vaccines such as DTP.

<sup>37</sup> Creati M, Saleh A, Ruff TA, Stewart T, Otto B, Sutanto A, Clements CJ. Implementing the birth dose of hepatitis B vaccine in rural Indonesia. *Vaccine* 2007, 25(32):5985-93.

<sup>38</sup> Regional Framework for Implementation of the Global Vaccine Action Plan in the Western Pacific. Regional Office for the Western Pacific. WPR/RC65/8. 20 August 2014.

<sup>39</sup> American Samoa, Commonwealth of the Northern Marianas, Cook islands, FSM (exceptionally, Chuuk is 66031/2 – 4 January 2016

With the exception of Solomon Islands, Kiribati (selected vaccines) and PNG, PICs do not benefit from GAVI support for the introduction of new vaccines. Accordingly, they have had to pay for vaccine procurement from government budgets, albeit with support from DPs at times. UNICEF and WHO provide technical and financial support to Solomon Islands (for introduction of PCV, HPV and IPV;) to Kiribati (RV and IPV); to Vanuatu (MR and IPV); and to seven other PICs (IPV). Rotavirus vaccine introduction in Kiribati is part of a comprehensive child survival package and integrated with nutrition and water, sanitation and hygiene (WASH). UNICEF has raised funds for three years, procured the vaccines and is providing in-country technical assistance for training and introduction. WHO has provided technical assistance to establish sentinel surveillance to collect baseline and end-of-project incidence data to determine its impact.

Table 7 New vaccine introduction in PICs 2005-17<sup>40</sup>

Country/ Territory	Prior to 05	06	07	08	09	10	11	12	13	14	15
Cook Islands	HepB, MCV2		MR		Hib						IPV
Fiji Islands	HepB, Hib MR							PCV RV	HPV		IPV
Kiribati	HepB	MR		Hib	MCV2				PCV		IPV, RV
Marshall Islands	HepB, Hib				MR RV				IPV		
FSM	HepB, Hib MCV2, MR					PC, RV'			IPV		
Nauru	HepB, MCV2				Hib MR						IPV
Niue	HepB, Hib, MCV2, MR				PCV		IPV				
Palau	HepB, Hib MCV2, MR			PCV	RV						
PNG	HepB			Hib							IPV
Samoa	HepB, MCV2, MR			Hib							IPV
Solomon Islands	HepB			Hib				MR			IPV, PCV, HPV
Tonga	HepB, Hib MCV2, MR										IPV
Tuvalu	HepB, MR	MCV2			Hib						IPV
Vanuatu	HepB						Hib				IPV, MR

Source WHO database

<sup>40</sup> Data in this table are derived from information supplied by countries to WHO/UNICEF.  
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## 3.5 Cold Chain and Vaccine Procurement

### 3.5.1 Cold chain

A well-functioning cold chain is essential to immunisation services. There is considerable variation in the quality of the cold chain through the islands. Samoa has an excellent walk-in cold room in Apia and electric refrigerators in all health facilities, each with a back-up generator. In Solomon Islands, the cold chain was reviewed in 2009 and 2012. The 2012 evaluation of vaccine management (EVM) revealed that findings and recommendations of the previous EVM had not been budgeted for, nor largely implemented<sup>41,42</sup>. A 2014 UNICEF delegation visited Solomon Islands in follow up to GAVI graduation discussions and the 2012 EPI review. Similar issues to the 2012 EPI review were raised during the visit with MoH.

Positive findings from the three countries visited included the conversion to solar power in many remote locations, and a program of gradual replacement of old stock. The capacity of the cold chain has been increased to accommodate increased storage requirements of new vaccine introduction. Although vaccine vial monitors are used (to monitor exposure to heat) on all UNICEF-procured vaccines, the condition of the vaccine at the end of the cold chain is uncertain. A data logger study would determine if vaccines had been exposed to freezing temperatures<sup>43</sup>. The assessment team was unable to determine if countries had discussed limiting the cold chain in lower level facilities where it cannot be adequately maintained.

### 3.5.2 Vaccine procurement

All PICs other than those aligned with the United States or France procure all or most of their vaccines through the Vaccine Independence Initiative (VII)<sup>44</sup>. FSM and Marshall Islands also procure BCG through VII. This system enables pooled procurement of a reliable supply of high quality vaccines at competitive prices. It is a revolving fund that enables countries to pay following delivery. UNICEF staff support the EPI coordinator in each country to quantify stock needs, and UNICEF manages the fund. VII was evaluated in 2006 and 2010 and found to be of continuing value to participating countries<sup>45</sup>. One area of concern is the dependence on one airline to transport the vaccines to the islands. This service is not always reliable and vaccines may be not be prioritised over other airfreight. The capital base of VII was recently increased to enable procurement of a wider range of health commodities including cold chain equipment.

A few countries choose to procure all or some vaccines independently and others may

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<sup>41</sup> Solomon Islands EVM assessment, 16 July - 24 August 2012. Findings and Recommendations.

<sup>42</sup> The last EVM assessment was conducted in 2012 and an EVM Improvement Plan was developed. The previous EVM assessment was carried out in 2009 and only 20 per cent of the recommended improvements had been fully implemented by 2012, another 30 per cent being partially implemented. The next EVM assessment is planned for August 2017

<sup>43</sup> Wirkas T, Toikilik S, Miller N, Morgan C, Clements CJ. A vaccine cold chain freezing study in PNG highlights technology needs for hot climate countries. *Vaccine* 2007; 25, 691-697.

<sup>44</sup> However Fiji procures HPV, RV and PCV and FSM procures BCG through the VII.

<sup>45</sup> The Vaccine Independence Initiative in PICs; a vision for the future. A review conducted by an independent consultant for UNICEF, Suva, Fiji. UNICEF Pacific Office, April 2006  
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do so in the future. Governments should strengthen the links between national immunisation managers and pharmacy staff who are responsible for wider procurement and management of the overall drugs and vaccines budget.

### 3.6 Surveillance and laboratory services

Surveillance of a number of syndromes including acute fever and rash and AFP is vital to identify potential disease outbreaks, to rapidly confirm suspected cases through blood tests and stool samples, and to contain outbreaks. Such syndromic surveillance varies from the active (weekly reporting of zero cases) to passive whereby only suspected cases are reported. Unfortunately passive reporting may equate to no reporting. This is likely to be due to complacency, as polio cases have not been seen for many years. It is likely that PICs will experience further outbreaks of measles and the outbreak notification and response system should be regularly reviewed and reinforced.

The quality of laboratory indicators in the Pacific remains a concern. Many of the smaller islands rely on laboratories in Fiji, Honolulu, Guam, Australia, French Polynesia, or New Zealand to provide serological testing of samples during outbreaks, but turnaround times are slow and numbers of samples processed are limited by budget constraints.

### 3.7 Costs of vaccination in the Pacific

It was not possible to calculate the costs of immunising children in the Pacific through this limited exercise. WHO has estimated the global cost at US\$35 per capita per fully immunised child including delivery<sup>46</sup>. In Vanuatu, a recent microplanning exercise showed variation in reaching a child from 8 USD to 58 USD per child (excluding the cost of vaccine and staff salary). This review identified a number of cost drivers that will add substantially to that amount.

Purchasing power for vaccine procurement and other supplies is markedly reduced by the relatively small quantities involved and the cost of doing business is dramatically increased after emergencies. Timely deliveries of supplies are dependent on commercial carriers and weather, and delivery costs to widely dispersed populations are high. While the VII enables countries to procure vaccines at competitive prices, the costs mount as the vaccine is delivered down the cold chain to the child. The small populations of the PICs are dispersed over a massive area of ocean and vaccines are all transported from manufacturer to the Fiji central store and on to countries by airfreight<sup>47</sup>. Delivery to outlying islands may also be by air and to remote communities by boat. Costs are high at each level. Inefficient quantification of vaccine needs and outbreak responses can lead to multiple small orders and more freight costs. Table 8 shows how most orders attract freight costs of around 20 per cent of the cost of the vaccine, but it costs a much higher percentage for the more remote, smaller islands.

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<sup>46</sup> WHO presentation to SAGE meeting, Geneva April 2015.

<sup>47</sup> The central cold store in Fiji acts as the storage and distribution centre for vaccines received from manufacturers under the VII arrangements  
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Table 8 VII Freight costs as a percentage of vaccine cost 2014

Country	Freight costs (overseas + inter-Pacific) as percentage of annual vaccine and device costs in 2014
Cook Islands	25%
Fiji	5%
Kiribati	22%
Marshall Islands	36%
FSM	112%
Nauru	17%
Niue	173% <sup>48</sup>
Samoa	6%
Solomon Islands	19%
Tokelau	48%
Tonga	8%
Tuvalu	14%
Vanuatu	10%

Source: UNICEF Pacific Office records  
2015

Transportation between the countries' many islands is mainly by ferry, outboard motorboat or canoe; there are limited and expensive inter-island flights. The average distance a patient must travel to get treatment at a national referral hospital may be more than 240km, with a range of 40-600km in Solomon Islands. Various factors combine to prevent or delay visiting a clinic, including difficult terrain reducing accessibility to remote populations, non-availability of transport, and travel logistics and costs<sup>49</sup>. Reaching the last 10 per cent of any population with services typically involves disproportionate levels of effort and cost.

Supervision and outreach visits are often restricted by limited operational budgets and high costs of reaching outer islands, and the lack of direct transport routes<sup>50</sup>.

During SIAs, the cost per immunised child will be influenced by the size of the target age group and whether additional PHC interventions, such as Vitamin A and deworming drugs are provided. This is good practice, spreads costs and will reduce the overall cost per immunised child<sup>51</sup>. However, there may be a threshold of interventions after which one may see a negative impact on the campaign.

The three countries that have received GAVI support for new vaccine introduction are entering the final transitional phase of support in which they will pay an increasing proportion of the vaccine cost (although this policy was under consideration

<sup>48</sup> Freight costs per dose are very high for Niue, reflecting the small number of doses ordered.

<sup>49</sup> Health Service Delivery Profile, Solomon Islands, 2012. Developed in collaboration between WHO and the MHMS. [http://www.wpro.who.int/health\\_services/service\\_delivery\\_profile\\_solomon\\_islands.pdf](http://www.wpro.who.int/health_services/service_delivery_profile_solomon_islands.pdf)

<sup>50</sup> To supervise health staff in Kiritimati Island from Tarawa, the main island of Kiribati, involves multiple airfares and overnight stops in Fiji with a return ticket quoted at US\$2,200. An alternative is to transit through Honolulu at even higher cost.

<sup>51</sup> Cost savings are achieved through apportioning costs across departmental budgets.

at the time of the review). The annual new vaccine costs for Solomon Islands are estimated to rise from US\$50,000 to almost US\$500,000 between 2015 and 2022.

GAVI has recognised that graduating countries (when they attain middle income status) may be unable to assume costs of all available and desirable vaccines. Some argue that this is a matter of choice rather than lack of resources. However Pacific countries already allocate a substantial share of the budget to health, have little room for fiscal expansion and have many competing health and wider development priorities including vulnerability to natural disasters.

### 3.8 Equity

DHS data show that for the most part, immunisation is provided equitably across populations by indicators of gender, rural and urban residence and wealth quintiles. However, inequity does occur due to considerable challenges with access to widely dispersed communities. There is not only variation in coverage between countries (Table 3 DTP3 coverage) but also within countries. Solomon Islands experiences considerable inter-provincial variation that reflects both difficult access and local migration (Table 9).

**Table 9 Rapid Coverage Assessment - Vaccine coverage by province Solomon Islands 2013**

Province	Coverage %									
	Target pop 2014	BCG	Hep B <24hr	Hep B3	Pent1	Pent3	OPV1	OPV3	MCV	TT
Malaita	4525	70.2	52.7	53.4	70.7	65.4	73.1	66.4	71.2	51.8
Makira/Ulawa	1600	75.8	46.7	57.9	72.2	69.9	72.8	67.8	74.3	46.1
Isabel	809	90.9	69.1	69.3	88.0	94.2	90.2	92.1	92.5	60.9
Guadalcanal	2600	81.9	45.1	62.5	82.6	73.3	83.8	73.8	90.7	45.8
Central Islands	882	91.0	44.8	49.8	53.5	51.6	54.1	45.4	96.6	19.8
Temotu	645	81.4	68.5	73.6	80.8	81.4	81.4	79.2	71.3	87.3
Honiara City	2764	121	116	122	128	114	131	115	74.2	131.2
Choisuel	921	61.5	45.1	48.4	69.9	72.6	70.4	73.9	66.0	62.6
Western P	2652	79.8	70.0	72.5	74.8	72.4	71.8	74.6	65.7	77.5
Renbel	92	45.7	55.4	55.4	80.4	66.3	60.9	44.6	42.4	34.8
Totals	17490				83%	77%			76%	

Source: Hilman I. Mission Report. Measles-Rubella Supplementary Immunization activities in the Solomon Islands. UNICEF Consultant. 17 September to 28 November 2014.



### 3.9 Other elements of immunisation programs

#### **Staffing, supervision, integration and training**

Senior managers need to monitor progress, question why planned activities did not take place and ensure follow up actions. This will require more effective use of information for management. Field supervision is often limited and conducted on an ad hoc basis. While the review team observed supportive supervision at clinics in Kiribati and Samoa, they were unable to determine the amount and quality. Remote clinics in Solomon Islands indicated they had received no visit (let alone seen a supervisor) for more than two years and indicators in the 2014 Joint Assessment indicate a falloff in outreach activities in the provinces. We met managers who had recently taken over the EPI role and were not yet conversant with the program. Frequently the EPI national manager is the only dedicated EPI staff member. It would be very useful to have an “understudy” able to support the EPI manager and be ready to take over if the manager moved on

At the health centre, service delivery is often integrated as most nurses who immunise children also provide all other services. The staffing of many health posts may be inadequate due to the difficulty of retaining staff in remote areas, high turnover, absenteeism and inadequate supervision. Nurses are increasingly burdened with a heavy workload that is only likely to increase as new vaccines are introduced and other health initiatives are launched. Lack of integration of services represents a missed opportunity at all stages; planning, service delivery, outreach, supervision, and training.

Much immunisation training continues to be carried out away from workstations and lasts several days. Training limited to immunisation only represents a missed opportunity to integrate with other PHC programs and may not be cost effective. Distance learning does not seem to have been pursued – peripheral facilities are unlikely to have internet access. There is no obvious follow up on identified shortcomings to improve performance.

#### **Communication**

Mobile phone coverage is poor across much of the Pacific Islands, and communication with remote clinics is generally by high frequency radio. But this is often unsatisfactory, as radios break down and/or many remote clinics do not have electricity. Of the visited countries, Samoa is an outlier in having few facilities on its two main islands and is able to connect all by telephone landline, yet coverage data is poor.

#### **Waste disposal**

There was evidence of efforts to dispose of immunisation waste correctly, but the island environment often hampered this. Most remote locations practiced burning and shallow burying. More sophisticated systems were also in place using a collection system and incinerators. Both human solid waste and immunisation-generated waste are hard to dispose of on such small landmasses. There is a danger of serious contamination of the environment from these, and a regional waste disposal policy for the Pacific islands would be useful.

### 3.10 Challenges to sustaining and improving immunisation

Most countries have achieved relatively high coverage of vaccines. However an effective program must achieve consistently very high levels of coverage of every cohort of children every year. The Regional Technical Advisory Group recommends that measles elimination requires that each country achieve 95 and 90 per cent coverage at national and district levels, respectively, to prevent or control outbreaks.

#### **Health system weaknesses**

Achieving and sustaining high vaccination coverage in the long term can only be achieved through an effective health system that is able to ensure reliable, quality services at the primary level. This requires strengthening of all system elements: adequate financing, enough trained and motivated health workers, effective data systems, infrastructure, reliable supplies and logistics and management and supervision. While possible to improve immunisation outcomes in the short term through a 'vertical' or targeted approach this is not sustainable. Deficiencies in leadership, accountability and managing for results have been highlighted by Pacific Heads of Health (see 4.2 below).

#### **Pressure on resources**

Many PICs face the health systems challenges described above. While national immunisation programs are largely funded from domestic resources, they also rely on external support. The costs of immunising children will continue to rise for a number of reasons including increasing populations and the need to meet substantial increases in the vaccine bill in future.

All PICs face multiple burdens including continuing high levels of communicable diseases, a non-communicable diseases (NCD) crisis, and persistent high fertility levels that place substantial demands on the limited health budget. The costs of dealing with the NCD burden will consume a very large proportion of future resources. Many sectors and ministries contribute to improvements in health outcomes and make demands on the country budget. Health already accounts for a high proportion of the government budget and, in the face of multiple competing development challenges and demands, it is unlikely that the health share will increase substantially.

Most PICs are classified as middle-income countries with expectations that they will cover a larger part of their budgetary needs for health. Development assistance is falling, and most countries have limited room for fiscal expansion. While the health of Pacific communities is improving, progress is slower than, and falling behind, the rest of the world. Introduction of new vaccines should be determined by available budgets and recurrent funding and, as with HPV experience, may be unaffordable without continuing external support. The limited resources available make effective regional and bilateral support by DPs all the more important (explored below).

### 3.11 Strategic Framework for immunisation

The global immunisation framework – the vision for the ‘decade of vaccines’ is set out in the GVAP (2011-20). The WPR of WHO has translated this global framework to the context of its own region. Table 10 sets out essential strategies and activities to achieve goals that have been agreed by all countries.

**Table 10 Immunisation goals and targets, WPR**

Regional Immunisation goal	Indicator and target	Status 2015 in 22 PICs
1. Sustain polio free status and implement polio endgame strategy	Sustain polio free status Timely detection and response Introduce IPV by October 2015 and withdraw type 2 component of OPV by mid-2016	Polio free since 2000 IPV on track
2. Maternal and neonatal tetanus elimination	Achieve by 2015	Achieved except PNG
3. Measles elimination	Eliminate measles by 2012	Still periodic outbreaks in 2014
4. Hepatitis B accelerated control	Reduce sero-prevalence to less than 1% in 5 year old children by 2017	Off track
5. Rubella elimination	No target set	MR introduced in all but one country
6. Japanese Encephalitis control		Not a problem except PNG
7. Meeting regional vaccination coverage goals	Reach 95% national coverage and 90% district coverage for all vaccines by 2020	Off track
8. Evidence based introduction of new vaccines	All L/MIC develop evidence based plans for NV introduction by 2016 All L/MIC introduce one or more vaccines by 2017	All PICs have introduced Hib/HepB

Source: Regional Adaptation of GVAP for context of Western Pacific –Appendix 1

The global and regional plans are highly relevant to PICs, and all PICs have all committed to ambitious goals to eliminate or eradicate a number of vaccine preventable diseases. However global coverage has plateaued since 2009. Globally, all the ambitious mid-point (2015) targets of the GVAP are off track other than the introduction of new or underused vaccines. WHO has highlighted the need to increase routine immunisation through health system strengthening, to reinvigorate community linkages, to improve the quality of data, and ensure a sustainable supply of vaccines especially post GAVI graduation.<sup>52</sup>

<sup>52</sup> Missed targets are: DTP coverage >90% nationally and >80% in every district, stop polio, elimination of maternal and neonatal tetanus, measles elimination in four regions, rubella elimination in two regions. Source WHO SAGE Meeting April 2015.

With only five years remaining to 2020 it is unlikely that all WPR GVAP goals can be achieved although there will likely be further progress towards each goal. The framework sets out the range of strategies and activities needed to meet the goals.

However at the country level, immunisation is only one of many priority health and development issues that far exceed the resources available. To implement all relevant activities proposed in the GVAP framework, PICs will require additional external resources. In the absence of continuing support each country will need to determine the relevance and affordability of each component.

Immunisation has been very high on international agendas and at the core of primary care services for many decades. The impression from our limited country visits is that in the Pacific immunization is now only one among a number of priorities and that the NCD crisis is seen as *the* main challenge facing ministries of health. Global vaccine coverage stagnated in the 1990s as donor attention was directed to other health challenges, and that shift has perhaps also occurred in the Pacific.

## 4. Development Effectiveness for Immunisation

### 4.1 Changing aid and development context

The OECD Development Assistance Committee (DAC) highlights the 22 island countries and territories of Oceania as the highest *per capita* recipients of development aid globally – at USD 223 per capita in 2013, almost five times that of Africa<sup>53</sup>. Ninety percent of aid comes from five donors; Australia, France, Japan, New Zealand, and the United States (US), and one multilateral partner, the European Union (EU). Aid allocation by country is influenced by historic links; most French aid goes to the three French territories, and most US support to the three US-associated states. The EU funding supports 14 PICs and four territories. Australia and New Zealand support the 14 other countries of the Pacific Island Forum<sup>54</sup>. Japan also provides support to these countries. Some 50-70 per cent of aid goes to the social sectors. This diversity has contributed to different vaccine schedules, varying levels of country support, and different approaches to health financing and coordination around aid effectiveness principles – this makes a common approach challenging.

Many countries remain highly dependent on donor funding and some, particularly small island states, may continue to be for a long time. Only three countries have benefitted from GAVI support, which is entering its final ‘graduation’ phase<sup>55</sup>.

Over the past 10 years development partners have contributed substantial technical support and finance. Yet, compared to other regions, there is a limited number of DPs, few of whom provide large-scale support or flexible funds through the country budget to boost operational funds. WHO and UNICEF are the main providers of technical and program support, with limited and declining support from Japan for cold chain and vaccine management. The US Centers for Disease Control (CDC) provides financial and technical support to the US-associated Pacific Islands. It also provides wider technical and in-kind support for special projects, including strengthening surveillance and outbreak responses, improving data quality and verifying HepB status.

Most DPs have supported targeted interventions in a few countries. Only Australia and New Zealand provide support through a range of instruments. These include specific programs on immunisation (bilateral health programs to countries), central and/or regional funds to UNICEF, WHO, the World Bank and SPC, support to domestic organisations to support countries and contributions to GAVI. A number of PICs have mobilised private support for the introduction of new vaccines. Recent reductions in budgets from Australia, New Zealand and Japan and planned reductions in Global Fund and GAVI support to the Pacific will require countries to further increase the effectiveness and efficiency of immunisation programs that will increasingly rely on domestic funding.

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<sup>53</sup> Development Aid at A Glance: Oceania, Development Assistance Committee (DAC), Organisation of Economic Cooperation and Development (OECD) 2015 Edition.

<sup>54</sup> The Pacific Islands Forum is an inter-governmental organization that aims to enhance cooperation between the 16 independent countries of the Pacific. It includes Australia and New Zealand.

<sup>55</sup> PNG, Solomon Islands and Kiribati.

## 4.2 Coordination mechanisms for immunisation

Immunisation has been central to primary health care for many decades, with strategic planning, coordination and oversight mechanisms evolving from the global to the country level. As discussed in 3.11, the GVAP sets the global framework for the ‘decade of vaccines’ 2011-20 with six high-level goals. The Western Pacific Regional Framework adapts these goals to the specific needs of the region. It sets out eight goals and 36 priority actions to guide country programs. Table 11 shows how global frameworks cascade to country level.

**Table 11 Immunisation frameworks by level**

Level	Framework	Leadership, Governance and Oversight	Technical support and advice
<b>Global</b>	GVAP	World Health Assembly	Strategic Advisory Group of Experts on Immunisation (SAGE) <sup>56</sup>
<b>WPR (37 countries)</b>	Regional Framework for the Implementation of GVAP	Western Pacific Regional Committee	Technical Advisory Group (TAG) <sup>57</sup>
<b>Pacific Community (22 PICs)</b>	Healthy Islands Vision	Health Ministers meeting HoH meeting	WHO, Pacific Immunisation Program Strengthening (PIPS) <sup>58</sup>
<b>Country</b>	National Health Strategic Plan	Head of Health and senior executive	WHO/UNICEF
<b>Immunisation program</b>	Multi-year and annual operational plans	Director RMNCAH or Maternal and Child Health <sup>59</sup> EPI Coordinator	WHO/UNICEF

**The Pacific Immunisation Program Strengthening initiative (PIPS)** was established in 2004 as a regional mechanism to coordinate and mobilise technical and financial support to national programs in PICs. It involves all engaged technical and donor agencies and aims to improve coordination and the efficient targeting of assistance. It also contributes to capacity building, the sharing of best practice, and seeks to overcome obstacles. While intended to be an annual event, meetings are dependent on available resources.

<sup>56</sup> SAGE sits at the global level to guide global policy.

<sup>57</sup> TAG deals with technical issues within programs.

<sup>58</sup> PIPS limits its technical oversight to the Pacific Community.

<sup>59</sup> RMNCH Reproductive Maternal Newborn Child and Adolescent Health, Maternal and Child Health.

**Pacific Health Ministers** have held biennial meetings since 1995. A broad review of progress in health over the period was presented at the 2015 meeting and is summarised below<sup>60</sup>.

### ***Summary of 2015 review of meetings of Pacific Health Ministers***

While the health of Pacific communities is improving, progress in the sub-region is slower than the rest of the world, and even falling behind. The NCD burden is increasing and most countries face a double or triple health burden<sup>61</sup>. A conclusion was that while health financing is a major issue, available resources could be used more effectively.

The review highlighted patchy progress due to lack of leadership, continuity and follow up. At the sub-regional level, discussions did not lead to sustained action. Of the 379 recommendations made by Ministers between 1995 and 2015, 87 per cent had no timeframe, targets or monitoring mechanism, and the responsibility for implementing recommendations was unclear. There was loss of continuity between meetings.

DPs (Australia, New Zealand and UN agencies) were considered to have had a disproportionate influence in setting the agenda with PICs having limited input. The review identified important barriers at the country level; global policy and framework overload, unpredictability of external funds, uncoordinated vertical programs, and for some countries, being chronically under aided. Important system barriers were the loss of integrated community-based approaches and of technically skilled workers from rural areas. Weak health management at the community and district level and lack of effective information systems and reporting further impeded progress.

Since 2011 Ministers have taken greater ownership of the process and countries are more engaged in setting the agenda. Recent meetings have been more limited in scope to allow more discussion in small groups, and have included fewer inputs from DPs.

In 2013, an annual meeting of country **Heads of Health (HoH)** was established to bring continuity, lead implementation on recommendations and ensure feedback to ministers' meetings<sup>62</sup>. It also prioritises the agenda for future meetings of ministers. The forum enables HoH to build networks, share best practice and learn from experiences of other PICs. The Health Ministers and HoH meetings address the whole spectrum of health and development issues facing the Pacific region.

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<sup>60</sup> The Healthy Islands Journey (1995-2015); Achievement, challenges and the way forward. April 2015. The review was carried out by an independent evaluator, Don Matheson with assistance from WHO technical and SPC public health staff.

<sup>61</sup> Continuing burden of communicable diseases, persistent high fertility and a rapidly mounting non-communicable disease burden.

<sup>62</sup> HoH is usually the permanent secretary or Director of Health in the government structure.



### 4.3 Technical effectiveness of partners

The main technical assistance (TA) for immunisation across the region is provided by WHO and UNICEF with more limited and targeted support from CDC and Japan. DFAT provides TA for health systems strengthening by embedding staff in ministries or through short term consultantancy. This review found the technical support by UNICEF/WHO to be appropriate and reported as of high quality, although given limited resources, it is inevitably spread thinly in response to country demands. Assistance was reported to be valued by recipients. Cooperation is close between the agencies, with examples of rational division of responsibilities across countries and complementary inputs. We found no evidence of competition between agencies, though Governments do sometimes approach both agencies for support which risks duplication. Table 12 outlines the range of support provided by the agencies and examples of coordination.

**Table 12 WHO/UNICEF immunisation support to PICs**

Area of support	Activity (TA +/- Financial support)	Cooperation /task sharing
Planning	Multi-year and annual planning	Led by WHO
Operations	Mid-level management training	Led jointly
Procurement	Manage the VII process and the regional warehouse TA to countries in forecasting and stock management.	Led by UNICEF
Cold Chain	Control Temperature Chain study Procurement/distribution of cold chain equipment Development of Cold Chain guidelines Vaccine wastage Assessment	CC support led by UNICEF UNICEF cold chain guidelines WHO revision of EPI policies.
Polio end game Measles	IPV introduction and OPV switch plans TA for the switch from MCV to MR	Divided the support and communications for 10 PICs
New vaccine introduction	Training Business case studies Feasibility Post-introduction evaluation of new vaccines Comprehensive child survival package for Kiribati including RV vaccine and WASH	Surveillance of Kiribati project TA/finance for introducing PCV and HPV Country Assessments
Outbreak response	Co-developed Regional Measles Risk Assessment tool. Support during outbreaks	



Area of support	Activity (TA +/- Financial support)	Cooperation /task sharing
Surveillance	Syndromic and laboratory HepB sero-survey study	Led by WHO
Capacity building	Support PIPS meetings Country support for EPI managers meeting.	UNICEF and WHO work with PIPS partners to develop agenda.
Vaccine safety	Guidelines development	Led by WHO.
Monitoring and evaluation	EPI Review EVM/ Effective Vaccine Management Assessments (EVMA)	Share lead/participation in EVM/EVMA
Routine vaccination	Staff in Vanuatu, Solomon Islands, Samoa, Kiribati and FSM provide technical and operational assistance in microplanning, staff capacity building, outreach activities, data management, supportive supervision.	Strategically place EPI staff/consultants.
Support to SIA and immunisation weeks	Support MR catch up campaign. World Immunization Week Communications Strategic Plan	UNICEF vaccine procurement, communications, training and microplans; WHO operations, microplanning and training
Advocacy and promotion of immunisation	Communications and social mobilisation activities	Led by UNICEF.
Resource mobilisation	Procurement of pentavalent vaccines for Vanuatu and RV introduction in Kiribati through external funds , support for HPV in Cook Islands	Led by UNICEF.
GAVI	UNICEF lead in Solomon Islands, WHO in Kiribati	Joint contribution to annual sector reviews and immunisation program reviews

Source: Discussions with UNICEF/WHO staff during eview

Both agencies support countries to meet immunisation targets set out in the regional framework. TA appears to be responsive to country needs, and requests are approved by HoH in country.

Another view expressed during the review was that UNICEF/WHO can pursue immunisation in a vertical manner without attention to wider health agendas and that, particularly in resource-constrained counties, the two agencies and other DPs could better help countries plan, budget and implement immunisation within integrated public health programs and budgets.

This highlights a long-standing tension: striking the right balance in the health sector

between targeted programs such as immunisation (that score well on delivering short term measurable results), and efforts to strengthen the wider health system as the only sustainable way to deliver high vaccine coverage year on year.

The focus on short term gains in health by DPs has often by-passed aid effectiveness concerns, longer term transformational change, and more sustainable whole-of-sector approaches that focus on greater alignment with country needs, institutions and priorities but are more challenging to measure<sup>63</sup>.

#### 4.4 Development effectiveness

The Pacific Aid Effectiveness Principles (2007) adapt the Paris Declaration on Aid Effectiveness (2005) to the Pacific context<sup>64</sup>. The international community has committed to numerous agreements to enhance aid effectiveness most recently the Busan Partnership for Effective Development Cooperation (2011)<sup>65</sup>. There is no shortage of commitments and principles on aid effectiveness, but delivery has been slow<sup>66</sup>. Coordination at the country level remains challenging. Measuring development effectiveness is difficult without agreeing a baseline, relevant milestones and indicators for each recipient country. The review team was unable to identify any comprehensive diagnostic exercise at the country level that documents and quantifies the scale of the aid effectiveness challenges around key issues such as TA, impact and burden of multiple initiatives, transaction costs due to numerous missions, separate reporting requirements and review overload<sup>67</sup>. The exception is the work underway in three countries with World Bank support around public expenditure management which appears to be convincing more DPs to include their support in the national budget, aligned to priorities within the national plan and channelled through national finance, procurement and accountability systems.

##### 4.4.1 Planning and budgeting – immunisation

WHO and UNICEF support countries to develop comprehensive multi-year immunisation plans based on needs to meet immunisation goals and targets. The agencies also support planning exercises in other targeted areas. This may result in multiple disease or health issue specific plans and budgets based on need. Many are regarded as priority public health programs, for example, NCD, reproductive health, malaria, tuberculosis<sup>68</sup>. These competing causes come up against the reality of limited budgets during annual planning exercises where departments must prioritise activities from their comprehensive plans for the year ahead. When resources are

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<sup>63</sup>Progress and challenges in aid effectiveness: what can we learn from the health sector? OECD Working Party on Aid Effectiveness /Task Team on Health as a Tracer Sector. June 2011(report for the Busan Partnership for Effective Development Cooperation. Fourth High Level Forum on Aid Effectiveness, November 2011. Busan, Korea.

<sup>64</sup> Pacific Aid Effectiveness Principles. Pacific Islands Forum Secretariat. 2007.

<sup>65</sup> PICs have also agreed on other important regional mechanisms; the Pacific Plan for Strengthening Regional Cooperation and integration (2008) and the Forum (Cairns) compact on strengthening development cooperation in the Pacific (2009).

<sup>66</sup> Small Islands, big challenges: rethinking the Pacific aid architecture. J Rogers (DG SPC?) Devpolicy Blog, Development Policy Centre October 2010.

<sup>67</sup> Solomon Islands had 77 missions in 2014, (albeit down from 131 in 2013).

<sup>68</sup> Solomon Islands reported 35 programs in the central MHMS.

constrained program managers have at times turned to DPs with an interest in progressing a specific agenda. This has led to DPs funding activities through parallel financing mechanisms and reporting processes outside the oversight of the administration. In the past this undermined the planning, budgeting and accountability process.

Common problems reported were:

- Unreliability of donor funding and funding release not synchronised with the national financial calendar.
- Commitments not confirmed until after finalisation of the government budget and annual plans, and use of inappropriate budgets.
- DP inputs not always consistent with their commitment to support national leadership and priorities.

#### 4.4.2 Technical assistance (TA)

The review team could identify no comprehensive problem analysis on how TA is provided<sup>69</sup>. This would be the first stage of developing an agenda for change. However the review identified a number of challenges related to TA provision from the Joint Annual Reviews in Solomon Islands and country visits. Examples include:

- TA not reflected in the budget and therefore not included in the annual planning exercise.
- Health workers diverted from planned activities for ad hoc DP-run training and workshops that were not included in annual plans.
- TA unaware of national policies and procedures.
- TA whose recommendations were not cost or staff-neutral- although we saw examples that listed the costs of each recommendation.
- Agencies seen to pursue their own plans and agendas.

There appears to be much scope to improve the effectiveness of TA in the health sector. Best practice for both short and long term TA happens when there is a continuous improvement through building the quality of demand and the transparency of supply.

Currently the options for sourcing, deploying and reviewing TA used by each DP remain opaque. Greater transparency and discussion about the comparative advantage of different DPs and supply options would help all parties make better decisions about who should provide what TA. Most TA can be planned and documented in annual operational plans and/or any future Human Resources for Health plan for the sector.

There are examples of good practice emerging, for example, in Solomon Islands

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<sup>69</sup> Recommendations from the PIPS meeting (last one in 2013) guide the division of labour and support from WHO and UNICEF but this deals with what is provided but now how in relation to national planning, budgeting and country systems.

health sector (see Figure 4).

**Figure 4: Solomon Islands - Health Sector Progress**

**Solomon Islands Health Sector Progress**

- Joint annual reviews of sector progress
- Core national indicator set reviewed by senior management group
- Multi-partner reviews and assessments
- Progress on financial management and use of national systems
- More DPs including inputs on plan and budget
- More DPs using national finance and accountability systems
- Clear procedures defined by government on TA and finance
- Introduction of indicators to monitor DP behaviour in the annual joint review
- Performance based incentive payments at central and provincial level
- Recognition by DPs of opportunities to improve timeliness of funding, increase transparency and reduce transaction costs

## 5. Improving the effectiveness of immunisation efforts including DP support

### 5.1 Introduction

The review team was tasked, following the review, to develop a *roadmap* to improve the effectiveness of immunisation efforts (including the effectiveness of development partner support)<sup>70</sup>. The ToR, approved by a sub-committee of HoH, envisaged that it would include a mechanism to monitor progress<sup>71</sup>.

Consultations revealed mixed views on the value of a roadmap and a lack of understanding of what it would look like and its purpose. The team's exposure to HoH to explore the issue was limited. The following section describes our understanding of the issues and outlines possible next steps.

### 5.2 Why a new approach is needed

This report identifies that the levels of vaccine coverage in most PICs makes them vulnerable to vaccine preventable diseases, particularly importation of measles and polio. Without a renewed immunisation effort across the region this risk will remain. The main challenges to achieving and sustaining high vaccine coverage are not technical but closely related to fragile health systems. These include:

- Health system deficiencies (of staffing, resources, infrastructure, commodities, information systems) that limit universal access to all components of primary health care and are not amenable to short term solutions.
- Weaknesses in leadership, oversight, management, and accountability<sup>72</sup>.
- The choices made in allocating limited health resources, for example, in the proportion of health budgets allocated to tertiary against primary care.
- Limited effectiveness of much external assistance and clear opportunities to increase the effectiveness and efficiency of available support from partners through improved development practice<sup>73</sup>.

Business as usual is not an option given mounting health challenges and declining levels of external assistance.

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<sup>70</sup> Definition of roadmap - a plan or strategy intended to achieve a particular goal.

<sup>71</sup> HoH of PICs approved the terms of reference of the review.

<sup>72</sup> Highlighted in the report of the Third meeting of HoH. Suva, Fiji 18-19 February 2015

<sup>73</sup> See IHP+ website. Seven behaviours: how development partners can change for the better to strengthen country systems with a focus on good value for money.  
[www.internationalhealthpartnership.net/fileadmin/uploads/ihp/Documents/About\\_IHP\\_/Seven\\_behaviours/Agency\\_Framework\\_May\\_2013.pdf](http://www.internationalhealthpartnership.net/fileadmin/uploads/ihp/Documents/About_IHP_/Seven_behaviours/Agency_Framework_May_2013.pdf)

### 5.3 What will a new approach build upon?

The global and regional immunisation frameworks set out goals, indicators, strategies and menus of activities to guide country programs. There are already several levels of oversight, governance and accountability (Table 11), and no shortage of quality technical advice or technical support from development partners.

There is progress in some countries in encouraging DPs to better align their support to the national health plan, to include resources within the national budget (and therefore the annual planning process) and to use national finance and accountability mechanisms rather than establish parallel mechanisms. There are positive examples of action by the leadership of the ministry of health to improve oversight and management and delivery of results. A number of countries have encouraged DPs to better meet their aid effectiveness commitments.<sup>74</sup>

Many PICs consistently achieve very high levels of coverage and have relatively high performing immunisation systems.

Our conclusion is that the term roadmap is considered unhelpful. However there is wide recognition of the need to improve oversight of, and accountability for, immunisation performance at both the country and regional levels. This would require strengthened cooperation between development partners and governments to use resources more effectively and efficiently.

A new approach should follow a number of core principles:

- It should facilitate improved leadership, management, accountability and results at all levels.
- It should not create a parallel mechanism but complement and build on existing processes and frameworks.
- It should use data from existing county indicators and sources.
- It should raise the visibility of critical immunisation issues in key fora and stimulate coordinated action by countries and development partners.
- It should focus efforts on underperforming countries.

### 5.4 Strengthening country action

In a context of falling external support, future improvements to immunisation performance will occur through more effective and efficient use of existing resources to strengthen the national health system. This needs to be aligned to more effective planning and budgeting to ensure availability of adequate operational resources (staff, funding, supplies) at district level, and more effective leadership and performance management. The bottlenecks to progress can only be addressed by concerted action at the country level involving ministries of finance, planning, health and others supported by DPs. The aim is to strengthen accountability for delivery, increase

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<sup>74</sup> For example in Solomon Islands the senior management group of the MHMS monitors progress against a core indicator set to respond early to poor progress; action to educate and encourage DPs to use national budget, planning and financial management and accountability systems.

demands for information to monitor progress (or non-progress) and enable managers to take effective action.

A second stream of country-specific action is in improving the effectiveness of DPs' support including TA. This is particularly important given mounting demands on budgets and the need to use resources more effectively and efficiently to deliver the greatest impact.

There is need to better document the effectiveness of external support through an open and constructive exchange of views that recognises success but also addresses problem areas. There may be a need to gather robust evidence rather than rely on anecdotes to analyse the scale and limitations of current practice. For example, it is possible to quantify the level and impact of fragmentation and duplication, the transaction costs of multiple projects for government, the volatility of domestic and external finance in hindering rational planning and implementation and specific issues relating to provision of TA. Defining the problem is the first stage in setting out pragmatic steps in the right direction, for example in setting targets to monitor year on year changes through the joint annual review of the health sector or equivalent.

The International Health Partnership (IHP+) provides a number of tools for improved coordination of health development cooperation. These include toolkits around provision of TA, and indicators for monitoring development effectiveness. IHP+ has identified seven behaviours of good donor practice that have emerged from country experience. Some DPs have carried out self-assessments on their institutional performance against these behaviours and identified where they have made progress, where there is more to do and where they face difficulties. Others have used a peer review process.

Future annual progress reviews could assess government performance against agreed sector leadership and governance criteria and DP performance against accepted good donor practice. Where there is an existing interagency group on immunisation, it needs to look beyond technical issues to address wider health system barriers and the effectiveness of external assistance.

Collective wisdom suggests the need to identify a limited number of indicators and to establish robust baseline measures and milestones of progress. Indicators selected should be practical and feasible, for partners to commit and be held accountable for performance.



## 5.6 Strengthening sub-regional oversight and accountability

Immunisation is a regional public health good, and low coverage and ongoing outbreaks in the region and beyond are a threat to all. There is a strong case for greater monitoring of country performance at the regional level to monitor risk and raise the level of discussion. More robust oversight could help mobilise support (including PIC to PIC) in the event of outbreaks, and encourage DPs to focus resources on areas of particular need. A strengthened regional focus could also facilitate networking, open discussion of issues, and the sharing of good practice.

Meetings of Heads of Health and Ministers of Health offer the means to link immunisation performance to the inter-country political and public health institutions. Future meetings plan to review progress against a set of core national health indicators that are under development. A core indicator set typically includes a range of health system indicators and a limited number of indicators for each priority health issue. HoH plan to focus on a limited number of agenda items to allow in depth discussion during annual meetings. Given the many health challenges of the Pacific, immunisation is likely to be on the agenda infrequently in the absence of major outbreaks of VPD. There is a case to establish a standing agenda item to review progress across PICs of a limited number of issues of regional public health importance such as immunisation or where ministers have committed to specific actions on a shared problem (for example NCDs).

We outline two complementary suggestions to improve oversight and accountability for immunisation performance across PICs.

### **Proposal 1: Include immunisation as a standing agenda item at Heads of Health and Health Ministers, linked to a broader discussion on health security within the sub-region.**

Regional partners could propose (from existing data sets) a short graphic update or 'dashboard' of key immunisation data<sup>75</sup>. This could include (as for current measles and polio surveillance updates across the WPR) a few colour-coded graphics (red-alarm, yellow-on track, green-high performing) to highlight vulnerability/risk of outbreaks. The WHO/SPC Pacific Health Surveillance Network may already fulfill part of this requirement. A working group could be established to review and propose key indicators.

Experience of the use of dashboard indicators elsewhere suggests that use of a league table format with high performers at the top and weakest performers at the bottom can introduce an element of competition and peer pressure. Health leaders question reasons for their performance compared to others and hold managers to account. The intent is to raise the level of discussion and stimulate action when data show that country programs are clearly faltering and before outbreaks occur.

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<sup>75</sup> The Joint UN estimate rather than data generated through the routine health information system offers a standard dataset.

## **Proposal 2: Establish a strategic advisory group on immunisation**

We propose the establishment of a standing Strategic Advisory Group (SAG) on immunisation. This would complement the existing technical advisory group (TAG) at WHO. It would include interested parties who could provide advice on ways to translate global recommendations into Pacific strategies and action, with particular focus on issues relating to health systems strengthening and aid effectiveness. It should include representatives of a number of PICs (we suggest including at least a country that is a high immunisation performer and one that is making progress on systems strengthening and aid effectiveness), DPs supporting immunisation, including UN agencies (UNICEF, WHO), US CDC, the World Bank, and the Public Health Division of SPC. The advisory group could also include one or more independent members. The SAG could meet during the HoH meetings and on a regular basis by tele/video conference during the year.

The SAG could, for example, support HoH to prepare the standing agenda on immunisation and propose recommendations for priority areas of support, such as issues addressed in the recommendations below. It could aid coordination and prioritisation of DP assistance at the country level, with a focus on countries with the lowest coverage levels, to help respond to immunisation and wider health systems challenges. It could help define priorities for Government and partners in these countries and report progress against at these at the next meeting.

The meetings of Heads of Health and Ministers of Health are convened by the host country with support from WHO (lead on ministers meetings) and SPC (lead on heads of health meetings). A working group could be established to develop ToR, membership, secretariat and funding needs of the proposed SAG. It is envisaged that this would require modest funding as it is building on existing processes.

## 6. Conclusions and Recommendations

### 6.1 Conclusions

This brief review highlights that immunisation has delivered substantial benefits, and remains both a “best buy” and the backbone of PHC. However, sustaining these gains will face continuing challenges in the Pacific in the context of fragile health systems, multiple health challenges, and limited resources compounded by periodic natural disasters.

While vaccine coverage rates have risen markedly in the past decade, several island nations are finding it difficult to reach or exceed 80 per cent coverage, and in some rates have slipped. Coverage levels and, in some cases, surveillance systems are not meeting global and regional standards to ensure that countries remain polio and measles-free in the event of importation. The recent stagnation of routine coverage is consistent with global trends, and indicates a need to invest in recovery of routine health and immunisation systems with the need for greater outreach and strengthened linkages with communities highlighted by WHO.

New vaccines promise further improvements in health outcomes but for many countries the cost may be unaffordable without external support. Sustainability is a mounting concern as the vaccine bill increases with little prospect of increasing fiscal space in countries and declining levels of external assistance.

Immunisation is one of many core health services that are undermined by severe health systems constraints that impact on access, equity, quality and overall performance of programs. It is not possible to deliver and sustain high levels of vaccine coverage without strengthening the wider health system.

Most gains will be made at through action at the country level and the effectiveness of leadership, management, and accountability are important factors.

While the technical effectiveness of development partners appears to be high with rational division of responsibilities there are opportunities for greater integration of immunisation with other PHC programs. There are opportunities to improve the effectiveness of overall development assistance to better support country priorities, budgets and national systems.

Immunisation is a regional public health good and as such there is a clear case for greater oversight at the regional level through the meetings of HoH and Ministers of Health to monitor progress regularly and hold each other to account.

## 6.2 Recommendations

### Pacific Island Countries

1. Strengthen leadership, management and accountability for immunisation in the face of multiple health priorities and stretched budgets.
2. Strengthen key elements of health systems that impact on immunisation performance, to ensure universal access to services, particularly for underserved populations.
3. Prioritise routine immunisation services and introduce a second dose of measles vaccine if not already part of the schedule. Periodic supplementary immunisation activities have a place in boosting measles immunity but should not detract attention from a focus on raising routine coverage.
4. Review national surveillance systems and reinforce zero reporting and outbreak response protocols.
5. Improve data quality and data management to improve program effectiveness. Periodic coverage surveys, and data quality assessments have a place where the reliability of routine information systems is of concern.
6. Maintain inventories of equipment to plan and budget for phased replacement of the cold chain. Dedicated specialist staff should carry out maintenance of new technologies such as solar panels.
7. Continue using the Vaccine Independence Initiative for procurement of vaccines and other health-related items. Strengthen links between national EPI and central medical stores/pharmacy units.
8. Review school health policy to maximise opportunities to increase vaccine coverage.
9. Maximise opportunities to integrate immunisation programming (planning, budgeting, outreach, supervision and training) with other PHC initiatives.
10. Strengthen oversight and accountability mechanisms to improve immunisation performance, including the effectiveness of development partner support in the Pacific region.
11. Include immunisation as a standing agenda item at meetings of HoH and Ministers of Health linked to a broader discussion on health security within the sub-region.

### Development partners

12. Improve the effectiveness of development assistance to countries through support of national planning/ budgeting processes and priorities within the national plan. Coordinate support for challenging countries around tailored solutions based on country-specific analysis.

13. Maximise opportunities for integration of immunisation support with other health interventions particularly at the primary level.
14. Commission an analysis of the scale and limitations of current development practice. For example, to quantify the level of fragmentation and duplication, transaction costs for government, volatility of external finance and technical assistance, and its impact on rational planning and implementation.

### **Pacific Island Countries and Development Partners**

15. Establish a standing Strategic Advisory Group (SAG) on immunisation at the regional level.

## Annex 1 Terms of Reference

### STRENGTHENING DEVELOPMENT PARTNER SUPPORT TO IMMUNISATION PROGRAMS IN THE PACIFIC 24 April 2015

#### 1. Purpose

Improved immunisation rates in Pacific Island Countries (PIC) as a result of more effective, sustainably-financed immunisation programs.

#### 2. Objective

PIC and health development partners agree a Road Map to improve the effectiveness of immunisation programs in the Pacific, including the effectiveness of development partner support, and a mechanism to review progress.

#### 3. Background

Strengthened disease prevention programs, including immunisation, are priorities in DFAT's new Health for Development Strategy 2015-20.<sup>76</sup> Immunisation is one of the most cost-effective health strategies, protecting the Pacific region, including Australian and New Zealand, from health challenges which pose major threats to our collective economic, trade and political interests.

Immunisation programs in PIC face many challenges. Health services delivery is very costly, especially to the isolated and underserved. Populations are scattered over vast areas of ocean, transport and communications are limited and many countries have relatively small and often itinerant populations. There is a lack of human resources especially qualified health professionals and lack of basic infrastructure for delivering vaccines and maintaining the 'cold chain'<sup>77</sup> alongside limited access to quality primary health care services for many island communities. Nonetheless, many PIC have made major gains in immunisation: routine vaccine coverage has steadily increased in all countries except for the Federated States of Micronesia (FSM), and Solomon Islands and Vanuatu, where they have remained static or fluctuated.

In 1995 13 Pacific Island countries joined the Vaccine Independence Initiative (VII). VII facilitates pooled procurement, through UNICEF, of WHO pre-qualified vaccines at competitive prices, and is structured around a revolving fund that facilitates payment after receipt of the order.

Despite the successes, immunisation in the Pacific are fragile, immunisation coverage varies and maintenance of the vaccine cold chain remains a major concern. Whilst all countries have managed to maintain polio-free status there were outbreaks of measles in Solomon Islands, Papua New Guinea (PNG) and FSM in 2014. There is also evidence from several countries of low levels of measles immunity that is not consistent with coverage data. Monitoring suggests that despite high national coverage, significant numbers of children are missed and/or do not receive the recommended

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<sup>76</sup> The Strategy is currently in draft and scheduled for release in the coming months.

<sup>77</sup> To be effective vaccines need to be kept in a narrow temperature range from when they are manufactured to when they are used. This called the 'cold chain' and it is crucial to vaccine supply chains.

number of vaccine doses.

The majority of Pacific Island Countries and Territories (PICT) are not eligible to access support from Global Vaccine Alliance (GAVI). Only PNG, Solomon Islands and Kiribati have been eligible for GAVI assistance, and Solomon Islands are both in the process of ‘graduating’<sup>78</sup> which means GAVI support is gradually being phased out. The table below provides a summary of GAVI support to PICs 2000-2014.

Country	GAVI (direct disbursement 2000 -2014) US dollars
Solomon Islands	\$2,259,296
Papua New Guinea	\$20,236,327
Kiribati	\$558,453

(GAVI The Vaccine Alliance, 2015)<sup>79</sup>

Countries have been required to co-finance ‘new’ vaccines (rotavirus, human papilloma and pneumonia) since 2007.<sup>80</sup> Graduating countries can continue to access GAVI prices for five years after graduation.<sup>81</sup> Nevertheless, concerns remain about the long term sustainability of financing for immunisation programs, particularly in relation to new vaccines which are more costly.

#### 4. Scope of Work

In response to the challenges set out above, a review and assessment of current immunisation programs and country and regional support for these programs will be conducted, with a focus on those countries with the lowest immunisation rates. The results from this review will inform the development of a draft Road Map, to be agreed by the PICs and health development partners. The Road Map will aim to improve the effectiveness immunisation programs in the Region, with a focus on low- performing countries, and development partner support to those programs.<sup>82</sup> The review will be implemented in two phases:

##### Phase 1: Review and Draft Road Map

- A **Strategic Review** of current issues, practice and challenges, including bottlenecks to improved performance;
- Based on the Strategic Review a **working draft of a multi-year Road Map** with costed and time-bound recommendations, for consultation with PICs will be developed.
- PICs will be engaged in Phase 1 through Heads of Health **sub-committee (HoH)**. Specifically, this will include seeking feedback on the ToR and early drafts of the Road Map as developed, and using sub-committee members as key informants

<sup>78</sup> The graduation for GAVI support occurs when a country’s Gross National Income (GNI) per capita exceeds the support criteria (currently set at US \$1570). Countries with higher incomes can still apply for support for the pneumococcal vaccine under the Advances Market Commitment initiative

<sup>79</sup> GAVI The Vaccine Alliance. (2015). *Disbursement by country*. Retrieved March 12, 2015, from GAVI The Vaccine Alliance: <http://www.gavi.org/results/disbursements/>

<sup>80</sup> Exceptions to this are vaccines for measles second dose, meningitis A, yellow fever preventive campaigns and measles-rubella catch-up campaign where there is no co-financing requirement

<sup>81</sup> This is to be achieved in a linear fashion with the difference between the initial price and the full market price i.e. the GAVI subsidy reducing by 20 per cent per year.

<sup>82</sup> It is recognised that the recommendations for the review will be most applicable to low-performing countries, and may not be relevant to French Territories or US-associated PICs.



during the review process (see below).

## Phase 2: Consultation with PICs and Review

- Further **consultation on the Road Map** with other interested DPs and PICs, though Heads of Health meeting, and **finalisation**.
- **Establishment of a Strategic and Technical Advisory Group** to review the progress of Road Map implementation.
- This ToR focuses on Phase 1, but includes an indicative outline of Phase 2. Phase 2 will be contracted separately if Phase 1 is successful.

## Phase 1: Strategic Review and the Draft Road Map

The **strategic review** will consider immunisation support provided by DPs<sup>83</sup> in the Pacific over the last decade. The aim is to conduct an assessment of the collective impact of development assistance over a sustained period, rather than evaluate performance of individual investments/interventions. There will be a dedicated focus on 2/3 countries; that will include looking at how well regional / multi-country programs support national programs, with a focus on the Pacific immunisation program strengthening partnership. The review will result in specific recommendations for the focus countries as well as regional recommendations. Proposed countries are Solomon Islands, Kiribati and 1 other (TBC). It is anticipated that the review will be relevant to all PICTs.

The review team will bring together two independent consultants with representatives of WHO and UNICEF; the HoH sub-committee will also be given the option of nominating a representative to the team, though funding for this position will need to be identified. The team will:

1. Conduct consultations with HoH sub-committee members, Ministries of Health and relevant stakeholders in the 2/3 focus countries and at regional level. These stakeholders will also have opportunity to review the draft findings and recommendations.
2. Conduct site visits, for example to district and provincial health offices, primary care facilities, vaccine storage/logistic facilities, Expanded Program on Immunisation (EPI) offices, relevant health department/ministry divisions, department and units.
3. Consider outcomes (trends in immunisation rates) in the focus countries and regionally.
4. Consider all relevant and existing reviews and assessments of immunisation programs in the focus countries, and the implementation status of recommendations, including identifying any patterns and knowledge gaps.
5. Identify bottlenecks, i.e., what is preventing recommendations in these reviews from being implemented, including HR capacity in both government and DPs.
6. Assess, and if possible calculate, the 'real cost' of doing business in the Pacific, i.e., the overheads associated with delivering immunisation programs in the Pacific context.
7. Review DPs' (multilateral and bilateral) activities and support from a *technical perspective* in terms of quality, appropriateness and consider options for improvements in each of the 2/3 countries and regionally. DPs activities reviewed should include assessment of support related:

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<sup>83</sup> WHO, UNICEF, Australia DFAT, Japan, New Zealand MFAT, US CDC and possibly France.

- a) cold chain (including, has advice provided been tailored to the Pacific, and the cost and benefits of different approaches adequately explored);
  - b) micro-planning, implementation and monitoring and its integration to broader planning and budgeting work
  - c) surveillance;
  - d) regional procurement;
8. Review DP engagement from an *aid effectiveness* perspective, e.g.:
- e) coordination between DPs:
  - f) sustainability of financing arrangements:
  - g) extent to which support strengthens national systems and process, including procurement, planning and budgeting, recognising that the strength of these systems is critical for sustainability.
9. Look at the impact of GAVI graduation and changes to VII for sustainability of financing.
10. Map the use of SIAs in the 2/3 focus countries and consider their cost effectiveness and relative impact (compared to routine immunisation). Understand the drivers for use of SIAs – why has their frequency increased in recent years? (For example, is it easier to fundraise for SIAs than for routine immunisation?) Is a cyclical approach to SIAs a pragmatic solution to Pacific challenges, or should there be a renewed focus on driving up coverage in low-performing countries?
11. Consider the relevance and affordability of the Regional Framework for the implementation of Global Vaccine Action Plan (which was endorsed in October 2014 by all member states of Western Pacific Region<sup>84</sup>).

Drawing on the outcomes of the strategic review, the consultant team will develop a **draft Road Map**. It will have a multi-year framework and provide specific recommendations to guide the future engagement of DPs active in the Pacific region in supporting national immunisation programs, at country level and through regional initiatives. It will be consistent with the Regional Framework for the Implementation of the Global Vaccine Action Plan. Specifically, the draft Road Map will:

- 2) Include recommendations for DPs on how to improve the effectiveness of their country-level support for immunisation in the Pacific, from a *technical* perspective and an *aid effectiveness* perspective.
- 3) Include recommendations on how to better target and align regional support behind country programs.
- 4) Propose a donor coordination strategy that suggests how to further implement the agreed division of labour between WHO and UNICEF in the Pacific context.
- 5) Include recommendations on improving the sustainability of financing for immunisation programs, including introduction of new vaccines where applicable. Make recommendations on the role of the World Bank support to countries on this issue.
- 6) Suggest timelines, milestones and measurable performance indicators in relation to these recommendations, which will form the basis of the TAG's monitoring.
- 7) Include a draft ToR for a time-bound TAG that will monitor the implementation

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<sup>84</sup> [http://www.wpro.who.int/about/regional\\_committee/65/documents/wpr\\_rc065\\_08\\_epi\\_en.pdf](http://www.wpro.who.int/about/regional_committee/65/documents/wpr_rc065_08_epi_en.pdf). This Regional Framework consolidates eight immunisation goals and identifies action to reach the six strategic objectives of Global vaccine Action plan in the WPR. It is critical for all stakeholders to work towards implementation of the regional framework.

of the Road Map.

- a) Recommend membership and a convener of the TAG, including whether it could be housed in an existing regional organisation.
- b) Propose an appropriate forum for the TAG to report to (e.g. HoH or Pacific Health Ministers Meeting).
- c) Suggest indicative time-frame for the TAG

A first round of consultation on the draft road map will be done with stakeholders participating in the review and HoH sub-committee, and the final working draft should be agreed among these partners.

## **Phase 2: Consultation on and finalisation of the Road Map, establishment of the TAG.**

The final draft of the Road Map and TAG proposal should be a consensus document agreed by all interested DPs and PICTs. To this end there will be a process of consultation and revision, as follows:

- 1) Circulation of the draft for comment
- 2) A working-level consultation<sup>85</sup> for all interested stakeholders (regional agencies and PICs). This consultation to be chaired by HoH sub-committee if they agree.
- 3) Presentation of a final draft Road Map (and ToR for the TAG) to HoH (and Ministers of Health, if recommended by HOH);
- 4) Establishment of a TAG
- 5) Annual report from TAG to Heads of Health

If Phase 2 proceeds, partners will need to agree who is responsible for its management; ideally one or more regional technical partners would take the lead, with support from Quints, rather than DFAT.

## **5. Methodology and approach**

- 1) A detailed **plan** for the strategic review will be developed by the Team Leader and the Immunisation Specialist in close consultation with the WHO and UNICEF team members and chair of the HoH sub-committee.
- 2) A draft of the plan will be reviewed by Quints. Other interested bilateral and multilateral stakeholders will also have opportunity to comment (e.g., Japan, US.).
- 3) A desk review of relevant documents will be conducted. Examples of key reference materials include:
  - a) strategic and operational health plans from the 2/3 countries and the region
  - b) immunisation strategies and operational plans from UNICEF, WHO and other DPs
  - c) Regional Framework for the implementation of Global Vaccine Action Plan

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<sup>85</sup> One option would be to do conduct a workshop immediately prior to the 2015 Directors of Health meeting, and then present the outcome, consensus document to the full meeting for endorsement  
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2014<sup>86</sup>

- d) Relevant studies and research related to immunisation and Maternal Neonatal Child Health (MNCH) in the region
- e) Recent EPI related assessments and reviews conducted in the region especially in the target countries, for example reports and documentation related to Effective Vaccine Management Assessments (EVMA):
  - i) Solomon Islands in 2012 and the analyses of the recent SIAs and routine immunisation conducted by WHO and UNICEF consultants in 2014
  - ii) Kiribati, EVMA assessment conducted in September 2014 and the subsequent improvement plan to strengthen vaccine management and cold chain capacities
- f) Monitoring and surveillance and other epidemiological data, reports and research in the 2/3 countries and the other PICT
- g) WHO multi-year planning guidance and tools for immunisation programs and immunisation financing indicators
- h) GAVI results and evidence papers and strategy and policy documents
- i) Vaccine related peer reviewed journal articles and studies related to the region
- j) Regional reports from Health Information Systems (HIS) related to immunisation and MNCH.

The strategic review team will travel to Fiji to consult with regional stakeholders and to the 2/3 focus countries.

A first draft of the Strategic Review and Road Map (including TOR for TAG) will be submitted to DFAT (as contract holder). This will be forwarded to Quints and other interested partners for comment.

Review team to revise drafts as required.

Submission of final strategic review and Road Map documents.

## 6. Review team

UNICEF and WHO will assist with the identification and selection of the review team members.

Team Leader (TL)

Qualifications

- Master's degree related to Public Health, Monitoring and Evaluation, Health Systems, Health Policy or Planning or another relevant field.

Experience

- A solid working knowledge of immunisation and current development issues in the Pacific Region.
- At least 10 years demonstrated expertise in managing and conducting methodologically rigorous strategic planning, evaluations and reviews of national programs and/or bilateral and multi-lateral development assistance

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<sup>86</sup> [http://www.wpro.who.int/about/regional\\_committee/65/documents/wpr\\_rc065\\_08\\_epi\\_en.pdf](http://www.wpro.who.int/about/regional_committee/65/documents/wpr_rc065_08_epi_en.pdf)

programs.

- At least 10 years demonstrated experience leading teams in planning/review and/or evaluation missions.
- At least 10 years demonstrated experience in health policy development and health planning.
- 10 years demonstrated successful experience consulting, collaborating with and building effective working relationships with a variety of health service delivery stakeholders (government and non-government) to achieve agreed deliverables and performance objectives.

#### Assets

- High level interpersonal skills with a demonstrated ability to build positive relationships
- Exceptional analytical, written and verbal communication skills, with the ability to communicate with a variety of audiences and produce high level reports.
- Demonstrated ability to collect data and analyse findings from the current medical and public health literature and develop written conclusions and recommendations.

#### Immunisation Specialist

##### Qualifications

- Master's degree in Public Health or related field with additional qualification/s in Immunology, Immunisation, Epidemiology or related/relevant field.

##### Experience

- Demonstrated expertise in immunology and immunisation.
- 10 years experience working in immunisation programs including with the introduction of new vaccines and preferably in the Pacific Region.
- Demonstrated experience in immunisation program design in lower/middle income countries preferably in the Pacific Region.
- Demonstrated technical knowledge and experience in vaccine procurement, logistics including cold chain preferably in the Pacific Region.
- 5 years demonstrated experience collaborating with and building effective working relationships with a variety of health service delivery stakeholders (government and non-government) to achieve outputs related to immunisation.

##### Assets

- High level interpersonal skills with a demonstrated ability to build positive relationships
- Exceptional analytical, written and verbal communication skills, with the ability to communicate with a variety of audiences and produce high level reports.
- Demonstrated ability to collect data and analyse findings from the current medical and public health literature and develop written conclusions and recommendation.

#### WHO Representative

- With authority to represent the WHO.

#### UNICEF Representative

- With authority to represent UNICEF.

### 7. Deliverables

#### Phase 1

The consultancy team will be responsible for the following deliverables:

- 1) Strategic review plan (<5 pages plus annexes)
- 2) Draft Strategic Review, findings conclusions and recommendations (<30 pages plus annexes)
- 3) Final Strategic Review (with revisions based on comments from stakeholders, <30 pages plus annexes)
- 4) Draft Road Map (and TORs for TAG) (<10 pages)
- 5) Final working draft Road Map (and TORs for TAG) (with revisions based on comments from stakeholders <10 pages).

### 8. Timing

#### Phase 1

Team Leader required for up to 40 working days

Immunisation Specialist required for up to 35 working days

Phase 1		TL	IS
Develop strategic review plan (home base)		2 days	2 days
Desk review (home base)		5 days	5 days
In-country mission to Fiji + 2/3 focus countries		20 days	20 days
Completion of working draft Review and Road Map (home base)		10 days	5 days
Redraft in response to comments (home based)		3 days	3 days
Total		40 days	35 days
Timing	Activity	Responsibility	
Phase 1			
Week 1	Strategic review plan	Review team (including WHO and UNICEF)	
Week 2	Stakeholder review of plan	DFAT & interested DPs	
Week 3	Desk review	Review team (including WHO and UNICEF)	
Week 4-6	In-country mission	Review team (including WHO and UNICEF)	
Week 7	Completion of draft road map and strategic review and submission	Review team (including WHO and UNICEF)	
Week 9	Comment draft road map and strategic review and submission	DFAT, Ministry of Health in focus countries & interested DPs	
Week 10	Submission of final drafts	Review team (including WHO and UNICEF)	

#### Reporting requirements

The review team will report to DFAT, Director of Pacific Health Advice in the Pacific Development Division. The requirements are as per the deliverables. The review team will not be required to provide progress reports to DFAT during implementation of the field work. Each deliverable should be:

- Of the highest quality, including report content, format, spelling and grammar
- Provided in electronic format in Microsoft Word
- Delivered by the required date.



## Annex 2 Schedule of meetings in country

	July	Meeting/Activity
Solomon Islands	7	Arrive Honiara
	8	Australia High Commission/DFAT country team EPI Unit MHMS MHMS Director Nursing WHO MHMS Deputy Financial Controller National Medical Stores
	9	Ministry of Finance and Trade World Bank SPC Guadalcanal Provincial Medical Office UNICEF
	10	MHMS Surveillance Team Pikini and XX clinics Good Samaritan Hospital Debrief development partners
	11	Depart Honiara to Apia via Nadi
Samoa	12	Arrive Apia
	13	DFAT, NZAT, World Bank, WHO National Health Service Travel to Savaii
	14	EPI meetings Visit to Travel to Apia
	15	Ministry of Women Community and A Ministry of Health National Health Service
	16	National Health Laboratory Visit XX Hospital Depart Apia Arrive Suva
Fiji	17	UNICEF Suva WHO Suva SPC Suva
	18	
	19	
	20	Depart Suva to Tarawa DFAT NZ Joint mission
Kiribati	21	WHO CLO MHMS

UNICEF		
	22	Health Sector Coordination meeting Visit PHC clinics and hospital Debrief
	23	Depart Tarawa to Suva
<b>Fiji</b>	24	Debrief

## Annex 3 People Consulted

<b>Australia (Canberra)</b>
Rebecca Dodd, Director, Pacific Health Advice DFAT
<b>New Zealand (Wellington))</b>
Sumi Subramaniam, Principal Development Manager Health, NZMTAT
<b>Fiji</b>
<b>DFAT</b>
Frances Bingwor
Sheona McKenna
<b>NZMFAT</b>
Helen Leslie, First Secretary, NZMFAT
Vamarasi Mausio, Development Program Coordinator, NZMFAT
<b>JICA</b>
Nila Prasad
<b>UNICEF</b>
Karen Allen, Representative
Dr Naawa Spiianyambe, Chief Health, Nutrition & Sanitation
Nahad Sadr-Azodi, Maternal and Child Health Specialist UNICEF
Isabelle Austin
Murat Ozturk VII Manager
<b>SPC –Public Health Division</b>
Dr Paula Vivili Director
Taniela Sunia Soakai Senior Adviser Policy, Planning & Performance
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## Annex 4 Main Documents reviewed

### General

Health for Development Strategy 2015-2020. Australian Government Department of Foreign Affairs and Trade. June 2015. Canberra

Healthy Islands Journey 1995-2105: Achievements, Challenges and Way Forward. Don Mattheson. Presentation to 11<sup>th</sup> Pacific Health Ministers Meeting, Fiji, April 2015.

Meeting Report-Third Heads of Health Meeting. , Fiji 18-19 February 2015

Non-Communicable Diseases Roadmap Report, background document on preventing and controlling NCDs in the Pacific for consideration at the Joint Forum of Economic and Pacific Health Ministers meeting July 2014.

Pacific Regional Health Program Delivery Strategy 2013-2017. Australian Government Department of Foreign affairs and Trade. December 2013, Canberra

Pacific Health Ministers Meeting. Yanuca Island Declaration on Health in Pacific Island Countries and Territories. April 2105

UNICEF Pacific Immunization Program 2011-12. Progress Report. December 2011

UNICEF Multi country program 2013-17. Second Review of Australian aid transition support

UN Joint Programme on Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) in Kiribati, Solomon Islands and Vanuatu: Investment Design Summary, DFAT 2015

World Bank Concept note for Health Sector Support in the Pacific Program of Analytical and Technical Assistance 2015-2018

### Development and aid effectiveness

Busan Partnership for Effective Development Cooperation. Fourth High-Level Forum on Aid Effectiveness. Busan, Republic of Korea. 29 November-1 December 2011.

Cairns Compact on Strengthening Development Cooperation in the Pacific. Fortieth Pacific Island Forum. August 2009.

Development Aid at a Glance: Statistics by Region. 6. Oceania. 2015 edition. OECD DAC

Health Spending Middle–Income Countries Face a Priorities Ditch, not a Financing Ditch-But that Still Merits Aid. Glassman A, Kenny C. Global Health Policy Blog, Centre for Global Development. January 2015. <http://www.cgdev.org/blog/health-spending-middle-income-countries-face-priorities-ditch-not-financing-ditch-still>

International Health Partnership. Various tools on development effectiveness in the health sector. [www.internationalhealthpartnership.net](http://www.internationalhealthpartnership.net)

Pacific Islands Aid Effectiveness Principles. Pacific Islands Forum Secretariat 2007

Progress and challenges in aid effectiveness: What can we learn from the health sector? OECD working party on aid effectiveness: task team on health as a tracer sector. June 2011. (Report for the Busan meeting –see reference above)

Review of UNICEF's Development Effectiveness (2009-2011). OECD DAC Network on Development Evaluation, May 2013.

<http://www.oecd.org/dac/evaluation/UNICEF%20DE%20Review%20Report%20final%20May%202015.pdf>

Roadmap for Health Measurement and Accountability. Measurement and Accountability for Results in Health: A Common Agenda for the Post 2015 Era. MA4Health. World Bank, USAID, WHO. June 2015

## **Immunisation**

Global Immunization Data. UNICEF 2012. <http://www.unicef.org>

Global Vaccine Action Plan 2011-2020. WHO Geneva  
[www.who.int/immunization/global\\_vaccine\\_action\\_plan](http://www.who.int/immunization/global_vaccine_action_plan)

Global Health Observatory Data Repository.  
<http://apps.who.int/gho/data/node.main.A826>

Kitau R, Datta SS, Patel MK, Hennessey K, Wannemuehler K, Sui G, Lagani W. Hepatitis B surface antigen seroprevalence among children in Papua New Guinea, 2012-2013. *Am J Trop Med Hyg.* 2015 Mar;92(3):501-6. doi: 10.4269/ajtmh.14-0537. Epub 2015 Jan 12.

Meeting of the Strategic Advisory Group of Experts on Immunization, April 2015  
WHO Geneva. [www.who.int/immunization/sage/meetings/2015/april/en/](http://www.who.int/immunization/sage/meetings/2015/april/en/)

Global Polio Eradication Initiative (GPEI). [www.polioeradication.org](http://www.polioeradication.org)

Pacific Immunisation Program Strengthening Initiative (PIPS). Summary notes: meeting June 23 2015

Polio endgame in the Western Pacific Region, 2013-2018.  
<http://iris.wpro.who.int/handle/10665.1/10814>

Preventing mother-to-child transmission of hepatitis B: Operational field guidelines for delivery of the birth dose of hepatitis B vaccine. Unpublished draft, WHP/WPRO,2006

Regional polio certification. <http://www.wpro.who.int/topics/poliomyelitis/en/>



Regional Framework for Implementation of the Global Vaccine Action Plan in the Western Pacific. Regional Office for the Western Pacific. WPR/RC65/8. 20 August 2014.

Retrospective measles data on supplementary immunization activities 2000-2010. Available from: [http://www.who.int/immunization\\_monitoring/data/](http://www.who.int/immunization_monitoring/data/)

Vaccine Independence Initiative in Pacific Island Countries; a vision for the future. A review conducted by an independent consultant for UNICEF, Suva, Fiji. UNICEF Pacific Office, April 2006

WHO database: [http://www.wpro.who.int/immunization/news/vaccination\\_week/en/](http://www.wpro.who.int/immunization/news/vaccination_week/en/)

Wirkas T, Toikilik S, Miller N, Morgan C, Clements CJ. A vaccine cold chain freezing study in PNG highlights technology needs for hot climate countries. *Vaccine* 2007; 25, 691-697.

Vince JD, Datta SS, Toikilik S, Lagani W. Integrated package approach in delivering interventions during immunisation campaigns in a complex environment in Papua New Guinea: a case study. *Vaccine*. 2014 Aug 6;32(36):4614-9. doi: 10.1016/j.vaccine.2014.04.056. Epub 2014 Apr 30.

## **Kiribati**

Options for Australian and New Zealand development assistance in health, Kiribati. Concept Note. Robert Condon 14 February 2014.

National Multi-Year Plan For Immunization in 2011-2015. Ministry of Health, The Government of the Republic of Kiribati. December 2010.

Ministry of Health and Medical Services 2016 to 2019 Ministry Strategic Plan. MOHMS Kiribati 2015.

Measles data: WPR/WHO web pages: [http://www.wpro.who.int/immunization/documents/measles\\_regional\\_country\\_profile/en/](http://www.wpro.who.int/immunization/documents/measles_regional_country_profile/en/) accessed 30 July 2015

Kiribati EVM Assessment Preliminary Report. Findings and recommendations of the assessment team. Draft, October 6th, 2014.

Kiribati Evaluation of Vaccine Management (EVM) improvement plan, October 2014. Ministry of Health Kiribati.

Under 5 mortality data. [http://www.unicef.org/infobycountry/kiribati\\_statistics.html](http://www.unicef.org/infobycountry/kiribati_statistics.html)

Western Pacific Regional Plan to improve hepatitis B control through immunization. WHO/WPRO

## **Samoa**

Annual Report 2010/11. Ministry of Health, Samoa. <http://www.health.gov.ws/Publications,StatisticsResources/Publications/tabid/5385/>

Child and Adolescent Health Policy 2013. Ministry of Health, Samoa.  
<http://www.health.gov.ws/Portals/189/Final%20Child%20and%20Adolescent%20Health%20Policy%202013.pdf>

Demographic and Health Survey 2009. Ministry of Health and Bureau of Statistics, Samoa and ICF Macro, Maryland USA.  
<http://www.health.gov.ws/Portals/189/2009%20SDHS.pdf>

Samoa Health Sector Profile WHO.  
[www.wpro.who.int/countries/wsm/29SMApro2011\\_finaldraft.pdf](http://www.wpro.who.int/countries/wsm/29SMApro2011_finaldraft.pdf)

### **Solomon Islands**

Diaz L, Technical assistance for the improvement of the management of healthcare wastes in the Solomon Islands. WHO STC Mission Report, November 2006

GAVI Alliance Graduation Assessment Report and Recommendations. 31 May – 6 June 2015. Presentation to the ICC 6 June 2015

Health Service Delivery Profile, Solomon Islands, 2012. Developed in collaboration between WHO and the MHMS.  
[www.wpro.who.int/health\\_services/service\\_delivery\\_profile\\_solomon\\_islands.pdf](http://www.wpro.who.int/health_services/service_delivery_profile_solomon_islands.pdf)

Hilman I. Mission Report. Measles-Rubella Supplementary Immunization Activities in the Solomon Islands. UNICEF Consultant. 17 September to 28 November 2014.

Measles mortality reduction and regional elimination: strategic plan 2001–2005. Geneva, World Health Organization, UNICEF, 2003 (<http://www.who.int/vaccines-documents/Docs-PDF01/www573.pdf>)

National Health Strategic Plan 2016-2020 (Draft 2) Ministry of Health and Medical Services.

International Review of the Expanded Programme on Immunization in Solomon Islands, November 2012. WHO Western Pacific Region Publication

Solomon Islands Evaluation of Vaccine Management (EVM) assessment. 16 July – 24 August 2012.

Solomon Islands Health Sector: Joint Performance Assessment 2014. B Slatyer. Health Resource Facility for Australia's Aid Program. April 2005

Solomon Islands Health System Review. Health Systems in Transition, Vol 5 No 1 2015. Asia Pacific Observatory on Health Systems and Policies

Solomon Islands Ministry of Health and Medical Service Staff Delineation Plan

Solomon Islands National Plan for Immunization (2011-2015), Ministry of Health and Medical Services, Honiara, Solomon Islands, April 30, 2010.

Solomon Islands National Health Strategic Plan 2006-2010

Solomon Islands World Bank Country Assistance Strategy 2013-2016

World Bank Report of Mission to Central Medical Stores . Erin Nunan, 20 April to 1  
May 2015

## Measles / Supplementary Immunisation Activities

Global reductions in measles mortality 2000–2008 and the risk of measles  
resurgence. *Wkly Epidemiol Rec* 2009; 84:509–16.

Cutts FT, Lessler J, Metcalf CJ. Measles elimination: progress, challenges and  
implications for rubella control. *Expert Rev Vaccines*. 2013 Aug;12(8):917-32. doi:  
10.1586/14760584.2013.814847

Ent M, Gupta SK, Hoekstra E. Two doses of measles vaccine reduce measles  
deaths. *Indian Pediatrics* Vol 46, 933-938. November 17, 2009

Fields , R. (2012). Using Measles SIAs to Strengthen Routine Immunization. 11th  
Annual Meeting, The Measles and Rubella Initiative (p. PPT). John Snow, Inc.  
Helleringer, S., Frimpong , J., Adelwahab, J., & Asuming, P. (2012). Supplementary  
polio immunisation activities and prior use of routine immunisation services in non-  
polio-endemic sub-Saharan Africa . *Bulletin of the World Health Organisation* , 495-  
503.

Global reductions in measles mortality 2000–2008 and the risk of measles  
resurgence. *Wkly Epidemiol Rec* 2009; 84:509–16.

Hanvoravongchai P, Mounier-Jack S, Oliveira Cruz V, Balabanova D, Biellik R, Kitaw  
Y, et al. Impact of measles elimination activities on immunization services and health  
systems: findings from six countries. *J Infect Dis* 2011 Jul;204 Suppl 1:S82-9.

Johri M, Sharma JK, Jit M, Verguet S. Use of measles supplemental immunization  
activities (SIAs) as a delivery platform for other maternal and child health  
interventions: opportunities and challenges. *Vaccine*. 2013 Feb 18;31(9):1259-63.  
doi: 10.1016/j.vaccine.2012.09.044. Epub 2012 Oct 5.

Measles Elimination Field Guide.

[http://www.wpro.who.int/immunization/documents/measles\\_elimination\\_field\\_guide\\_2013/en/](http://www.wpro.who.int/immunization/documents/measles_elimination_field_guide_2013/en/)

Retrospective measles data on supplementary immunization activities 2000\_2010.  
Available from: [http://www.who.int/immunization\\_monitoring/data/](http://www.who.int/immunization_monitoring/data/)

Fields , R. (2012). Using Measles SIAs to Strengthen Routine Immunization. *11th  
Annual Meeting, The Measles and Rubella Initiative* (p. PPT). John Snow, Inc.

Helleringer, S., Frimpong , J., Adelwahab, J., & Asuming, P. (2012). Supplementary  
polio immunisation activities and prior use of routine immunisation services in non-  
polio-endemic sub-Saharan Africa . *Bulletin of the World Health Organisation* , 495-  
503.

Schreuder, B., & Kostermans, C. (2001). Global health strategies versus local  
primary health care priorities--a case study of national immunisation days in Southern  
Africa. *South African Medical Journal* , 249-254.

Simons E, Ferrari M, Fricks J, Wannemuehler K, Anand A, Burton A, et al. Assessment of the 2010 global measles mortality reduction goal: results from a model of surveillance data. *Lancet* 2012; 379: 2173\_8.

Verguet S, Johri M, Morris SK, Gauvreau CL, Jha P, Mark J. Controlling measles using supplemental immunization activities: A mathematical model to inform optimal policy. *Vaccine*. 2015 Mar 3; 33(10): 1291–1296. doi: 10.1016/j.vaccine.2014.11.050

Verguet S, Waasila Jassat W, Bertram MY, Tollman SM, Murray CJL, Jamison DT, Hofman KJ. Supplementary immunization activities (SIAs) in South Africa: comprehensive economic evaluation of an integrated child health delivery platform. *Glob Health Action* 2013. <http://dx.doi.org/10.3402/gha.v6i0.20056>.

Vince JD, Datta SS , Toikilik S , Lagani W. Integrated package approach in delivering interventions during immunisation campaigns in a complex environment in Papua New Guinea: a case study. *Vaccine*. 2014 Aug 6;32(36):4614-9. doi: 10.1016/j.vaccine.2014.04.056. Epub 2014 Apr

World Health Organization. Measles vaccines: WHO position paper. *Weekly Epidemiological Record* 2009; 84: 349\_60.

World Health Organization. Measles vaccines: WHO position paper. *Weekly Epidemiological Record* 2009; 84: 349\_60.

World Health Organization. Measles vaccines: WHO position paper. *Weekly Epidemiological Records* 2009; 84: 349\_60 and 2009; 84: 349\_60

World Health Organization Regional Committee for the Western Pacific. Resolution no. WPR/RC54.R3 (Expanded Programme on Immunization: measles and hepatitis B). Manila: WHO Regional Office for the Western Pacific; 2003.

## Annex 5 SIAs conducted in 20 PICs, 1997-2015

Country	Date of last measles case	Activity	Year	Age group	Coverage %
American Samoa	Unknown but none since 2010	None	-	-	-
Cook Islands	2003 (17 cases)	MR catch-up	2006	1-35y	96
		MR campaign	2007	1-35y	98
Commonwealth of the Northern Mariana Islands	2014 (140 cases)	MMR Mop-up	2002	4-6y	40
		MMR Follow-up	2002	1-3y	18
FSM	2014 (252 cases)	Not known	2004 2010 2011 2013	-	
Fiji	2009 (1 cases)	MR catch-up	2006	6m-6y women & children	98
		MR campaign	2011		-
French Polynesia	Unknown but none since 2010	None	-	-	-
Guam	2014 (1 case)	None	-	-	-
Kiribati	1999 (2 cases)	M follow-up	2002	12-59m	92
		MR catch-up	2006	1-19y	95
		MR follow-up	2008	12-59m	-
		MMR catch-up	2009	12-59m	106
Marshall Islands	2007 (1127 cases)	MMR follow-up	2002	12-48m	
		MMR catch-up	2003	6m-40y	
		MMR mop-up	2004	13m-18y	
Nauru	Unknown but none since 2010	Not known	1997 2003	Not known	-
New Caledonia	Unknown but none since 2010	Not known	1997	Not known	

Country	Date of last measles case	Activity	Year	Age group	Coverage %
Niue	1991 (121 cases)	M mop-up	2003	5-11y	36
Palau	0	M follow-up	2011	6m-2y	82
PNG	2014 (2299 cases)	M catch-up Various MR campaign	2003 2004- 14 2015	6m-10y various 9m-14y	107 - planned
Samoa	2012 (1 case)	MR catch-up MR campaign MR campaign MR follow-up	2003 2008 2009 2015	1-18y 12-59m 6-59m 1-6y	88 91 76 -
Solomon Islands	2014 (4406 cases)	M follow-up M follow-up MR catch-up MR catch-up	2006 2009 2012 2014	1-4y 12-48m 12-59m 6m-29y	97 90 101 93
Tokelau	-	MMR catch-up	2003	-	98
Tonga	2008 (1 cases)	-	-	-	-
Tuvalu	1987 (284 cases)	MR MR follow-up	2005 2015	12m-34y 9-59m	96 99
Vanuatu	2014 (3 cases)	M catch-up M follow-up MR catch-up MR catch-up	2006 2009 2013 2015	1-12y 12-59m 12-59m 1-14y	99 97 102 -

## **Annex 6 Country Reviews -Summary Reports for Kiribati, Samoa, Solomon Islands**

Provided as a separate document.



## Annex 7 Summary of key findings of recent Immunisation reviews

### 1. Findings of 2012 review:

The key findings included: differing estimates for the number of target children (denominator discrepancies); late administration of doses (timeliness); inadequate cold chain; weak vaccine management; inadequate earmarking of funds for outreach, supervision and transportation at health facility level; delayed arrival of funds and lack of knowledge about EPI funds; weak data management; lack of guidelines on adverse events following immunisation (AEFI); lack of appropriate equipment for disposal of immunisation waste; lack of EPI micro-planning; and insufficient regular supportive supervision.

### 2. EVM assessment 2013:

Using nine criteria, with results ranging from 20 per cent to 69 per cent (failing to reach the standard of 80 per cent).

- Weaknesses: information systems and supportive management functions, stock management, vaccine management, maintenance, and temperature monitoring.
- Strengths: storage capacity and buildings received highest scores; other strengths include availability of guidelines and standard operating procedures, computerised vaccine stock management and involvement of all nurses in immunization.

### 3. UNICEF mission for Pacific Vaccine Independence Initiative (VII) & Solomon Islands Immunisation Programme, 24-28 November 2014 (followed Solomon Islands' PVII Reviews in 2006, 2010, 2013)

- a. Outreach and Supportive Supervision not adequate
  - i. Stronger reporting lines and stronger standard operating procedures would enhance accountability and all levels.
  - ii. Comprehensive planning, budgeting and implementation of the annual CHW, the NID and 2 PIRIs would increase coverage in a cost-efficient way
- b. The existing EVM-IP can be re-vitalised and budgeted in preparation for the required repeat EVM in 2015
  - i. Stock Management in need of strengthening
  - ii. The Cold Room of the Central Medical Stores requires Temperature monitoring, which a rapid SMS Mobile Phone alert system could cost-effectively supply.
- c. Improving in data quality, timeliness and completeness, denominators needed. It will also help guide investments in linking birth registration and immunisation registers.

### 4. Fiscal space

- a. VII

- i. Cold Chain equipment and Temperature Monitoring equipment can be procured facilitated by VII finance mechanisms
- ii. To cover New Vaccine Introduction, an increase in the ceiling will likely be needed
- iii. During the grace year (2015), Solomon Islands I can apply for new vaccines, request GAVI to re-program its exiting health systems strengthening (HSS) grant, and apply for a catalytic graduation grant for 2016 to 2020.

5. Challenges identified by GAVI mission June 2015:

- a. Denominator for vaccination coverage, cold chain, vaccine management, and funding data management
- b. Data management; DHIS rolled out in 2014 but data not used for action to target unreached populations. Micro plan implementation needs strengthening/improvement. Breakdown of Target Population according to provinces still a challenge
- c. Supportive Supervision; not budgeted for at Province level
- d. Outreaches; Joint RCH plan developed in 2013 but needs roll out, also budgets at the provinces are enveloped not earmarked
- e. Cold Chain and Logistics; Improved but maintenance still a challenge.
- f. Vaccines Supplies and Distribution; No stock outs but some challenges with distribution
- g. Monitoring and Coverage; Needs strengthening
- h. Surveillance and AEFIs; drafting a national surveillance plan.

6. Annex 5. GAVI graduation Policy to 2015 and beyond

Until 2015, countries whose Gross National Income (GNI) per capita crossed the GAVI eligibility threshold (currently US\$1,580) entered a graduation process and started phasing out of GAVI support. During this period, GAVI would intensify its efforts to help graduating countries be in the best position to financially sustain their routine programs and new vaccines.

Support for a previously eligible country did not end abruptly as existing multi-year commitments for vaccines and/or cash-based programs from GAVI would continue to be honoured. In November 2013 the GAVI Board approved a strengthened approach to graduation according to which countries entering graduation then had an additional year to apply for GAVI new vaccine support and were entitled to apply for HSS support for the duration of their graduation period, if their DTP3 coverage was below 90 per cent.

In June 2015, the GAVI Alliance Board approved a new eligibility policy.<sup>87</sup> This has a direct impact on the graduation process for Solomon Islands:

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<sup>87</sup> This ruling was given AFTER the GAVI mission to Solomon Islands in early June.

- Solomon Islands likely will enter graduation in 2016 or later, and NOT in 2015.
- The new GAVI criteria use a country's average GNI per capita for the preceding 3 years.
- The OLD criterion for cut-off was if a country exceeded US\$1,580 GNI per capita, i.e. the 2014 threshold.
- Around 1 July, the World Bank should provide 2015 per capita GNI estimates for Solomon Islands. After 1 July, the Secretariat will be able to predict when Solomon Islands is likely to enter graduation, and calculate the new financial projections for co-financing.

## Annex 8 Recommendations from the June 2015 GAVI mission to Solomon Islands

At the end of the mission, a debriefing session was held attended by: Ministry of Health and Medical Services (MHMS) senior staff including the Permanent Secretary, the Under Secretary of Health Improvement (and ICC Chair), the EPI Manager; major local partners (DFAT, WHO, UNICEF) and the mission team. **Note: these were made prior to the changes announced in late June, that the GAVI Board approved changes to the GAVI Eligibility and Transition Policy.**

Those attending i) agreed that the findings accurately reflected the discussion of the week, ii) reviewed and finalised the recommendations from the mission, and iii) endorsed the following next steps.

1. Submit a request for a graduation grant and budget to request catalytic support to
  - a. A consultancy to map current health systems strengthening (HSS) efforts, and to assist MHMS to clarify its definition and its framework for HSS investments, based upon the new NHSP and RDP.
  - b. Under the guidance of the MHMS, write a proposal for a reprogramed or new GAVI HSS application, whose activities will use Solomon Islands Government financial systems.
  - c. A consultancy to complete a cost benefit analyses of introducing and taking to national scale Rotavirus and HPV
  - d. Subject to the above and if appropriate and desired, a consultancy to assist the MHMS to draft and submit an application for Rotavirus introduction.
2. Submit the Joint Appraisal report, once reviewed and revised by the MHMS with the support of the local WHO and UNICEF offices.
3. Reinforce the commitment by Solomon Islands Government to sustainably finance the recommendations from this and previous missions for:
  - a. strengthening EVM and integrated supply chain management;
  - b. Implementing HSS to ensure sustained high immunisation coverage;
  - c. Use the opportunity provided by the graduation grant to strengthen programmatic and financial sustainability to successfully manage the transition from GAVI financial support.
4. **Post mission in light of the new GAVI eligibility policy being adopted just as the mission ended, the MHMS and mission team made the following recommendations and actions:**
5. The graduation mission team sees the opportunity of developing an HSS framework for donor and domestic investments as a way to accelerate the putting into practice the RDP strategic objectives, and help accelerate update of the SDPs at all levels.
6. The activities and budget under the planned Graduation grant are instead to be funded by current HSS grant (Second tranche in process of being transferred):
  - a. **Annex 5 has the finalised HSS ToR for a consultancy to**
    - i. Assist MHMS to clarify its definition of HSS based upon the RDP, and design a framework to guide donor/domestic HSS investments.

- ii. Map current HSS efforts by partners.
    - iii. Under the guidance of the MHMS, the consultant would also write a proposal for a reprogramed or new GAVI HSS application.
  - b. Annex 6 has the finalised ToR for a consultancy has been finalised to complete a cost benefit analyses**
    - i. Consultant would carry out a Cost Benefit Analysis (CBA) on introducing and taking to national scale Rotavirus and HPV, in light of other New and current vaccine commitments.
    - ii. If appropriate and desired, the consultant could assist the MHMS to draft and submit an application for Rotavirus introduction.
- 7. Critical:** these graduation/HSS activities selected by the Permanent Secretary and MHMS & partners should go forward with no delay.
  - a. The funds for implementing the two ToRs should come from the HSS funds transferred to the MHMS.
  - b. The ToRs to be adjusted if needed to permit more time to conducted the CBA, and take into account the new estimates for co-financing vaccine procurement.
  - c. Timelines for both ToRs to be adjusted by MHMS to best align with the development of the HSS framework with work on the RDP.
- 8. The MHMS submits the Graduation mission report AFTER the new projections (1 July) are known**
  - a. The graduation report needs revision to reflect the new graduation deadline and take into account the changed financial implications.
- 9. Decisions on HPV and Rotavirus**
  - a. Application for Rota can be deferred until ROTA CBA is completed (e.g. in March 2016)
  - b. This permits the Rota and HPV CBAs to be fully completed, and sufficient time to assess the impact on financial sustainability of Rota introduction in light of a new graduation date.
- 10. Implications for future GAVI financial support**
  - a. Use outputs of HSS consultancy to submit a reprogramed or new HSS proposal
  - b. This permits more time to use the new HSS framework to ensure that any new GAVI HSS proposal takes into account the latest work on the RDP and SDPs.

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