National Department of Health

2019 Sector Performance Annual Review

Assessment of Sector Performance

2015 - 2019

National Report

August 2020

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FOREWORD

The Sector Performance Annual Report (SPAR) is a monitoring surveillance tool that enables us to measure our progress as a sector on a yearly basis and compare trends for the last five years. It enables us to know how we are progressing against set targets and the National Health Plan. The SPAR should serve as the basis for a proper and careful analysis strictly adhering to the Monitoring & Evaluation (M&E) plan to give us a true picture of our health outcomes. M&E surveillance is mandatory in any program activity and must be given the highest priority in terms of resource allocation. M&E must be an integral part of informed policy, resource allocation, and intervention strategy decision making in the health sector to achieve improved health outcomes.

The 2019 SPAR shows some positive health outcomes in health system reforms of Provincial Health Authorities (PHAs), and major public health programs including nutrition, family planning and child health. Our challenge is to sustain these successes and improve in areas of poor performance.

I appeal to our national, provincial and district health sector service providers and implementers including non-government organization and church agencies to take ownership of this report. We all need to provide strong leadership and good governance and contribute the best we can. Let us continue to be accountable for our actions and be innovative in our endeavors to strengthen health service delivery for improved health outcomes.

I would also like to commend all who have spent time to compile this report. May we continue to further refine and adjust our SPAR report so that all development partners, stakeholders and implementers in the health sector are made aware of the many efforts that they have put to achieve a better and healthier Papua New Guinea.

Finally, I endorse this SPAR report for reference and program evaluation purposes and as a document for public consumption.

for. Dr Paison Dakulala
Acting Secretary for Health

Indicator List Sector Performance Annual Review

	Ind #	Indicator	Source
Outcome	1	Case fatality rate (in health facilities) for pneumonia in children <5yrs	NHIS
Outcome	2	Proportion (%) of underweight children under five years	NHIS
Outcome	3	Underweight (<2500 gm) births as a proportion (%) of total births	NHIS
Outcome	4	Incidence of malaria per 1000 population	NHIS
Outcome	5	Proportion (%) of pregnant 15 – 24 year old women who test HIV positive	HIV Program
Outcome	6	Incidence of diarrhoeal disease per 1000 in children under 5 years	NHIS
Outcome	7	Total injury discharges from health centres and hospitals for every 1000 popn	NHIS
Output	8	Ratio of rural outreach service held to children under 5 years	NHIS
Output	9a	Proportion (%) of children at one year of age who are immunised against Measles rubella (MR1)	NHIS
Output	9b	Proportion (%) of children at one year of age who are immunised with 3 doses Pentavalent vaccine	NHIS
Output	10	Proportion (%) of births attended by skilled personnel at health facilities	NHIS
Output	10b	Proportion (%) of total provincial hospital births that are referred from rural centres	unavailable
Output	11	Proportion (%) of pregnant women who attended at least one ANC visit	NHIS
Output	12	Family Planning: couple years protection per thousand women of reproductive age	NHIS
Output	13	Proportion (%) of children under 5 years with fever who are treated with appropriate anti-malarial drugs	PNGIMR
Output	14	Proportion (%) of children <5yrs sleeping under Long Lasting Insecticide-treated Net (LLIN)	PNGIMR
Output	15	Proportion (%) of HIV positive mothers who receive ART to reduce the risk of MTCT	HIV Program
Output	16	Case notification rate for all TB cases	TB Program
Output	17	TB treatment success rate	TB Program
Process	18	Proportion (%) of government (functional grants) and development partner contributions that are expended.	NEFC
Process	19	Provincial health expenditure (government and development partner contributions) as a proportion (%) of estimated minimum health expenditure required.	NEFC
Process	20	Proportion (%) of health centres that have received at least one supervisory support visit from district or provincial management staff during year	NIHF
Process	21	Average number of outpatient visits to hospitals and health centres per person per year	NHIS
Process	22	Proportion (%) of Aid Posts open	NHIS
Process	23	Proportion (%) of outbreaks identified and assessed by NDoH within 48 hours	Program
Input	24	Total budget allocation (HSIP and GoPNG) per capita	PLLSMA
Input	25	Proportion (%) of health facilities that have running water to delivery room.	NHIF
Input	26	Proportion (%) of health centres/hospitals with functioning radio/telephone/mobile.	NIHF
Input	27	Percentage of months that facilities do not have stock-outs of all selected medical supplies for more than a week in the month.	NHIS
Input	28	Proportion (%) of general hospitals which have at least 3 of the 5 key specialties	NHSS Program
Input	29	Number of health workers per 10,000 population (stratified by cadre)	HR Branch

List of Indicators

Reporting Rates

National Health Information System Reporting Rates 2015-2019

Province	2015	2016	2017	2018	2019
Western	75%	75%	70%	79%	88%
Gulf	77%	100%	60%	72%	85%
Central	86%	88%	90%	90%	92%
NCD	85%	87%	97%	94%	92%
Milne Bay	100%	100%	100%	97%	100%
Oro	89%	95%	96%	87%	83%
SHP	93%	87%	92%	92%	88%
Hela	80%	95%	89%	97%	95%
Enga	80%	94%	100%	89%	97%
WHP	93%	98%	100%	100%	100%
Jiwaka	77%	79%	64%	82%	91%
Chimbu	99%	100%	100%	97%	96%
EHP	89%	97%	94%	95%	100%
Morobe	78%	89%	96%	91%	92%
Madang	87%	95%	84%	96%	93%
ESP	59%	74%	62%	83%	90%
WSP	79%	91%	100%	87%	96%
Manus	94%	98%	96%	99%	100%
NIP	79%	91%	93%	92%	96%
ENB	73%	86%	96%	94%	94%
WNB	89%	100%	100%	87%	89%
ARB	96%	97%	100%	98%	91%
Southern	86%	90%	86%	86%	91%
Highlands	88%	93%	92%	93%	95%
Momase	76%	87%	85%	89%	92%
NGI	85%	94%	97%	94%	93%
National	84%	91%	90%	91%	93%

Summary Comments

This report provides a snap shot of health sector performance by province for 2019 and compares results over the last 5 years. Analyses of indicators show that health sector "inputs" declined by 0.24% and indicators of "outputs" also declined (2.55%) between 2015 and 2019). Over the same period, indicators of outcomes also declined (6.59%). The performance of the sector in the last 5 years has declined by 2.8%.

Programmes with positive changes are seen in nutrition interventions (for child malnutrition); a decrease in case fatality rates for children under five years admitted with pneumonia; and the prevention and control of diarrhoeal disease amongst children under the age of 5 years. There is continuing work in policy areas, including amongst others, review of the NHP 2011-2020, heath workforce, further development of Community Health Posts and District Hospitals, full adoption of Provincial Health Authorities, some important work in budget and finance (for example, Facility Based Budgeting, and ongoing reform of the medical supply system.

Of concern, is that there continues to be a decline in the number of outreach clinics, with subsequent lower vaccination coverage and antenatal attendance. This leads directly to vulnerability of children (in nutrition monitoring and protection against vaccine preventable disease) and fewer opportunities to safeguard the health of mothers and their unborn child. Supervised births are also noted to decline with decreasing antenatal care. There has been patchy improvement in the coverage of family planning programs, thought to be attributable to the further introduction of Long Acting Removable Contraceptives. All districts need to have these opportunities available.

In the Disease Control Program areas, we observe further increasing incidence in malaria. HIV infection prevails, with too few of those infected on treatment over the past four years, the disturbing high rate of Mother to Child Transmission. TB incidence rate has remained stagnant over the past five years. However, TB case notification has increased over the past three years and treatment success rate increased from 68% in 2018 to 76% in 2019.

Provincial Performances and Improvements

The five best performing provinces in 2019 are NCD, Chimbu, Western Highlands, Milne Bay and New Ireland. Conversely, Gulf, East Sepik, Southern Highlands, Madang and East Sepik are identified as poor performing provinces. However, if all provinces were at the same level of development NCD, Milne Bay, New Ireland, Manus and Morobe would be the best performing provinces using the constraints index (See Appendix 2). The purpose of using this index is to level the playing field when making comparisons of performance between provinces. It suggests that these provinces do comparatively well when one considers the relative hardships they face.

The most improved provinces in 2019 are Madang, Jiwaka, Hela, Western Highlands and Central while West New Britain, Milne Bay, Western, ARoB and East Sepik are the least improved provinces.

Technical Comments

– **Population data:**

– In late 2018 the NDoH adopted a revised set of population estimates, derived from the 2011 census. The methodology used in developing the estimates was approved for use by the Department of National Planning & Monitoring. These revised populations were projected over the time period 2011 to 2022. All indicators that use a population denominator have been recalculated for all years covered in this report that is 2015 to 2019. The revisions of the populations was undertaken to address inconsistencies and perceived errors identified by the provinces. The review of the population data confirmed a number of these perceptions. The revision of the populations expects to show a more accurate performance. However, for some indicators and some provinces, the indicator values appearing in this report may be significantly different from that previously published.

- The calculation formula in the family planning indicator based on Couple Years Protection (CYP) has been updated to use the current international standard for protection for each type of contraceptive.

- The simple under-reporting correction used in previous SPARs has been continued. This is a facility level correction where the correction factor of x (12 / number of forms actually received) is applied to each facility yearly total value.

– **Reporting year**: The data analysed in this report relates to the full 2019 calendar year data (January to December), rather than over a split year as previously was the case. For all indicators with population denominators these have been recalculated over the relevant calendar years.

– **Data corrections**: As earlier year's data were being reanalysed a few obvious data errors were noted and these have been corrected.

– **Indicator 2**: This indicator reports the proportion of underweight children who have been weighed at MCH clinics, based on the *Weight for Age* percentiles. A revised NHIS monthly form was introduced in 2019 and this changed the WFA categorising from percentiles to Z-scores. The filling out this form is confusion for many health facility OICs due to lack of training and advocacy, thus calculations for 2019 are done using data collected from the old forms completed in 2019.

– **Facility based indicators:** For the three facility based indicators; availability of communications, water in delivery room and proportion of aid posts open have combined data from 2018 to ensure adequate completeness. That is, for facilities where there was no data for 2019 but there was data for 2019, this 2019 data was used.

– Data was not available for indicator 10b (Referral rates for hospital delivery) due to lack of consistent approach to recording data in NHIS;

Transition to the eNHIS

NDoH is transitioning to the use of the new eNHIS system for data collection and analysis. The Tablet based data collection is already working fully in 8 provinces with the PC based reporting and analysis software being used in all provincial offices and the NDoH office. All NHIS data has been migrated to the eNHIS and data for this SPAR analysis was extracted from that system.

Further actions

Performance monitoring requires information on program inputs, implementation and results. Despite limited analysis, this report should be used by managers and health workers to review their data and how performance can be improved to better meet community need.

eNHIS is available in the provinces and to programs to be used at any time when needed. Information should be used at the point of collection before it is compiled for analysis at the national level. Hence, data should be used at health facilities, at the district and provincial levels before being sent to NDoH.

Your comments, criticisms and suggestions will improve the value of the SPAR and create demand for information.

Any queries or comments on the report should be directed to the Performance Monitoring and Research Branch of National Department of Health: Ms Manah Dindi: Ph: 3013650; Email: manah.dindi2@gmail.com.

Indicator 1:   Percentage of Pneumonia Deaths in Children under 5yrs at Health Facilities

Definition: The percentage of children under five years of age that are admitted to the health centre with pneumonia and die during that admission

% pneumonia deaths in <5 yrs admitted to health facilities, 2015-2019					
PROVINCE	**2015**	**2016**	**2017**	**2018**	**2019**
WESTERN	1.8%	1.2%	2.3%	3.4%	3.0%
GULF	1.4%	2.8%	3.6%	4.6%	1.8%
CENTRAL	1.6%	1.6%	2.2%	1.8%	2.8%
NCD	0.2%	1.9%	1.9%	2.9%	1.7%
MILNE BAY	1.3%	1.3%	2.2%	1.6%	2.1%
ORO	2.2%	1.0%	2.9%	4.2%	4.9%
SHP	2.3%	1.7%	4.0%	2.1%	5.7%
HELA	1.6%	1.5%	1.8%	1.0%	1.6%
ENGA	4.2%	3.1%	3.5%	1.6%	2.7%
WHP	2.0%	2.2%	1.9%	1.2%	1.1%
JIWAKA	2.3%	3.9%	3.5%	2.5%	3.1%
CHIMBU	1.4%	1.3%	2.4%	0.8%	1.1%
EHP	3.3%	2.6%	2.7%	1.7%	1.5%
MOROBE	4.2%	4.3%	2.8%	3.3%	3.2%
MADANG	1.3%	1.4%	2.4%	2.1%	1.3%
EAST SEPIK	1.4%	1.2%	2.1%	2.3%	3.0%
WEST SEPIK	2.4%	3.6%	2.1%	2.2%	5.4%
MANUS	8.2%	2.8%	2.0%	3.2%	4.3%
NEW IRELAND	2.1%	0.9%	1.4%	2.1%	0.3%
ENBP	2.6%	1.6%	2.0%	1.8%	1.1%
WNBP	3.1%	2.3%	2.2%	0.2%	0.5%
ARoB	1.5%	1.5%	2.2%	2.1%	1.9%
REGION	**2015**	**2016**	**2017**	**2018**	**2019**
SOUTHERN	1.8%	1.6%	2.2%	2.7%	2.5%
HIGHLANDS	2.4%	2.1%	2.6%	1.3%	2.0%
MOMASE	2.8%	2.4%	2.4%	2.4%	3.0%
NGI	2.6%	1.7%	2.0%	1.5%	1.2%
NATIONAL	**2.3%**	**2.0%**	**2.4%**	**1.9%**	**2.1%**

Source: National Health Information System

% Pneumonia Deaths in children <5 years, 2015-2019

Legend: NATIONAL, SOUTHERN, HIGHLANDS, MOMASE, NGI
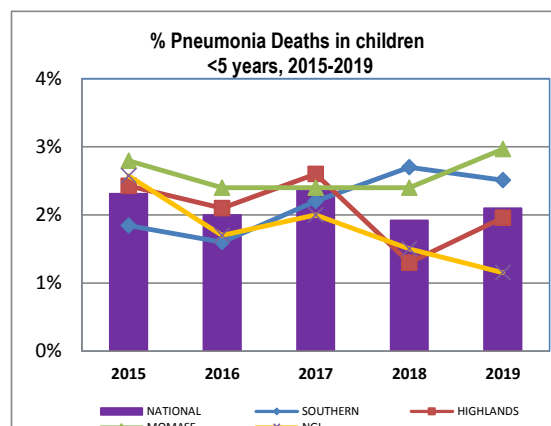
Indicator: Measures the in facility case fatality rate for children under 5 yrs who are admitted for treatment of pneumonia and die during that admission. Pneumonia case fatality rate has been shown to be a sensitive indicator of quality of care in numerous environments, although other factors may affect mortality (for example, late presentation, malnutrition), it is expected that availability of antibiotics, health worker training and the introduction of oxygen should impact upon case fatality. To this end, it provides a good indication of the quality of service coverage.

Performance: Overall there has been a general decline in case fatality rate over the five-year period, 2.3% to 2.1%. But given the large year to year variations in individual provincial results this should be treated with caution and may well not be statistically significant. The Annual Paediatric Mortality and Morbidity report 2019 (data from 20 hospitals) also shows improved case management of children with pneumonia.

Case fatality rate for pneumonia in children <5 years, 2019

Legend
Pneumonia deaths <5 years
- 0.0 - 1.9%
- 2.0 - 2.9%
- 3.0 - 3.9%
- >3.9%
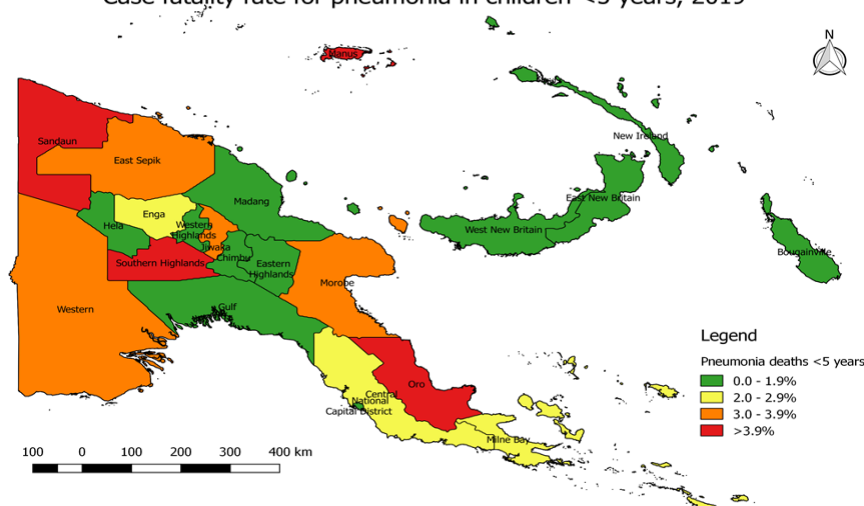
Indicator 2: % children moderately or severely underweight

Definition: Percentage of children under five years who attend Maternal and Child Health clinics that are moderately (60 –80% Weight for Age) or severely (<60% weight for age) underweight.

Percentage of children weighed at clinics < 80% weight for age					
PROVINCE	**2015**	**2016**	**2017**	**2018**	**2019**
WESTERN	23%	20%	22%	21%	22%
GULF	34%	38%	36%	36%	34%
CENTRAL	26%	27%	20%	21%	21%
NCD	9%	9%	8%	9%	9%
MILNE BAY	35%	35%	27%	23%	22%
ORO	28%	20%	31%	22%	29%
SHP	16%	15%	18%	18%	30%
HELA	22%	15%	13%	16%	15%
ENGA	26%	22%	19%	20%	20%
WHP	14%	13%	14%	13%	NA
JIWAKA	35%	28%	29%	35%	27%
CHIMBU	15%	15%	13%	10%	9%
EHP	17%	19%	22%	20%	20%
MOROBE	27%	20%	22%	26%	30%
MADANG	35%	30%	28%	26%	26%
EAST SEPIK	28%	26%	26%	31%	36%
WEST SEPIK	33%	33%	37%	35%	34%
MANUS	15%	17%	15%	15%	24%
NEW IRELAND	21%	18%	20%	25%	22%
ENBP	19%	20%	19%	17%	16%
WNBP	24%	24%	21%	21%	19%
ARoB	12%	11%	10%	13%	13%
REGION	**2015**	**2016**	**2017**	**2018**	**2019**
SOUTHERN	27%	25%	22%	19%	18%
HIGHLANDS	19%	17%	17%	17%	19%
MOMASE	30%	28%	29%	30%	32%
NGI	19%	20%	18%	19%	18%
NATIONAL	**24%**	**22%**	**21%**	**20%**	**21%**

% Children under five yrs <80% expected weight for age, 2015-2019

Indicator: Measures percentage of children under 5 years of age, who have attended and been weighed at MCH clinic, and weighed less than 80% of the standard weight for age.

Performance: The national underweight rate has steadily declined among children aged under five years old who had attended MCH clinics across PNG from 2015 to 2019.
Regionally, the rates of Momase still remained higher while other regions have shown slow decline. The rates from the provinces show East Sepik, West Sepik and Gulf reported the highest rates in 2019 while Chimbu and NCD reported the lowest.

Source: National Health Information System

NA: Data not available

Percentage of underweight children <5 years, 2019

Legend
<80% weight for age
0 - 10%
11 - 20%
21 - 30%
>30%
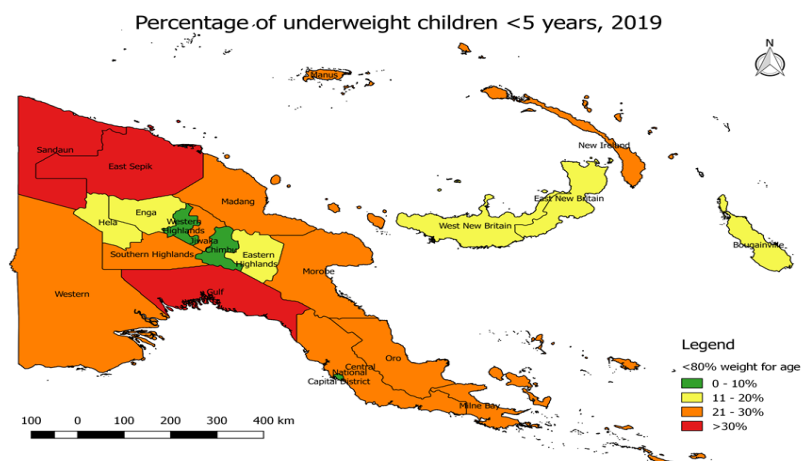
Indicator 3 - % Low Birth Weight Babies

Definition: The percentage of live births in facilities that weigh less than 2500 gram

Percentage of facility births less than 2500 gm, 2015-2019					
PROVINCE	**2015**	**2016**	**2017**	**2018**	**2019**
WESTERN	5%	11%	7%	13%	10%
GULF	8%	6%	11%	8%	8%
CENTRAL	3%	3%	4%	4%	4%
NCD	9%	8%	8%	9%	9%
MILNE BAY	11%	14%	12%	11%	12%
ORO	8%	6%	4%	9%	8%
SHP	5%	5%	3%	5%	5%
HELA	2%	2%	5%	5%	5%
ENGA	4%	3%	3%	2%	3%
WHP	4%	3%	3%	3%	3%
JIWAKA	4%	6%	6%	9%	6%
CHIMBU	6%	4%	4%	5%	3%
EHP	2%	5%	6%	5%	4%
MOROBE	12%	10%	11%	9%	8%
MADANG	15%	12%	10%	11%	10%
EAST SEPIK	7%	4%	8%	11%	12%
WEST SEPIK	11%	11%	19%	19%	18%
MANUS	12%	10%	6%	12%	10%
NEW IRELAND	6%	8%	6%	6%	7%
ENBP	5%	7%	5%	7%	8%
WNBP	8%	7%	8%	7%	7%
ARoB	4%	5%	5%	5%	5%
REGION	**2015**	**2016**	**2017**	**2018**	**2019**
SOUTHERN	8%	9%	8%	10%	9%
HIGHLANDS	4%	4%	4%	5%	4%
MOMASE	12%	9%	11%	11%	10%
NGI	6%	7%	6%	7%	7%
NATIONAL	**7%**	**7%**	**7%**	**8%**	**7%**

Source: National Health Information System

% Babies born at health facilities weighing less than 2500g, 2015-2019
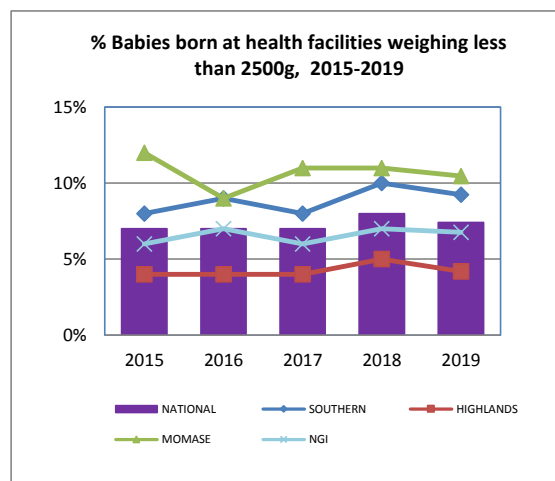
Indicator: Measures the proportion of those children that are born in health centres and hospitals and weigh less than 2500g

Performance: The national percentage of facility births with low birth weights appears to be stable between 2015-2019, while regionally the proportion of babies born with less than 2500g varied considerably from 2015 to 2019. LBW is a significant contributor to the high levels of neonatal mortality in PNG, therefore comprehensive antenatal care is important to address this concern. Management of LBW babies requires a comprehensive approach, including the promotion of Kangaroo Mother Care (skin-to-skin contact).

Percentage of facility births <2500 grams (LBW), 2019

Legend
% of LBW babies
- 0 - 5%
- 6 - 10%
- 11 - 15%
- >15%
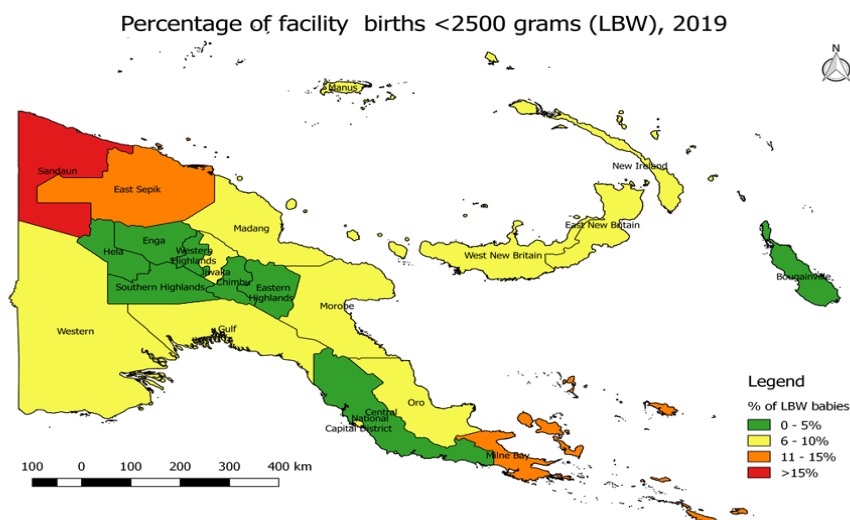
Indicator 4: Malaria Incidence per 1000 population

Definition: The rate of confirmed cases of malaria (confirmed by slide or RDT) and probable (Unconfirmed) cases of malaria (cases that were not tested, but treated as malaria) per 1000 head of population

Malaria cases per 1000 population, 2015-2019					
PROVINCE	**2015**	**2016**	**2017**	**2018**	**2019**
WESTERN	108	175	135	145	90
GULF	123	157	81	106	191
CENTRAL	53	63	64	88	92
NCD	51	46	42	38	40
MILNE BAY	300	372	302	323	203
ORO	131	170	135	221	231
SHP	31	20	14	15	10
HELA	61	19	10	16	11
ENGA	17	11	13	15	15
WHP	27	26	25	26	17
JIWAKA	24	23	25	25	15
CHIMBU	21	26	13	13	14
EHP	17	20	17	19	18
MOROBE	118	123	147	144	88
MADANG	115	129	175	135	187
EAST SEPIK	122	121	117	175	131
WEST SEPIK	292	290	360	344	419
MANUS	158	207	162	252	231
NEW IRELAND	214	281	383	426	410
ENBP	154	195	211	202	250
WNBP	199	256	210	262	274
ARoB	53	42	42	38	50
REGION	**2015**	**2016**	**2017**	**2018**	**2019**
SOUTHERN	126	159	126	148	130
HIGHLANDS	26	20	16	18	14
MOMASE	140	145	173	174	166
NGI	151	187	194	215	230
NATIONAL	**97**	**108**	**109**	**118**	**112**

Source: National Health Information System

Malaria cases per 1000 population, 2015-2019
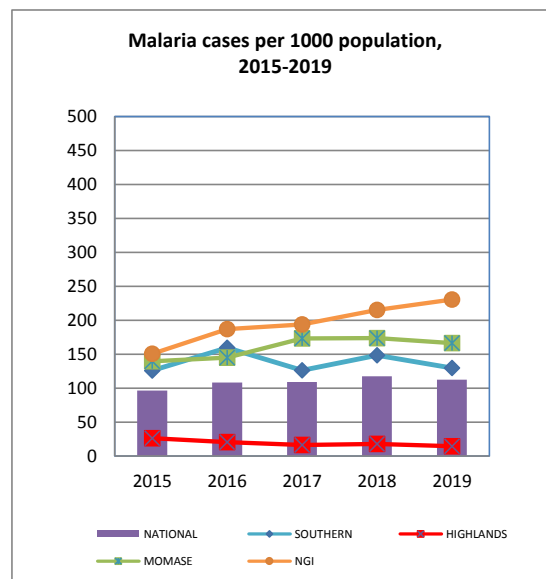
Indicator: The incidence rate of confirmed cases of malaria (confirmed by slide or RDT) and probable (Unconfirmed – clinically diagnosed) cases of malaria per 1000 population

Performance: The incidence of malaria increased between 2015 and 2018 from 97 to 118 then declined in 2019. The incidence in most areas of the Highlands region remains low, although some districts are seeing greater burden of Malaria. The rising incidence of malaria over the past three years is **a cause for great concern**. This increase has been validated by prevalence studies. The low rates in the ARoB are anomalous in relation to the much higher and rising incidence rates in the other NGIs.

Malaria incidence per 1000 population, 2019

Legend
Malaria incidence
- 0 - 75
- 76 - 150
- 151 - 225
- >225
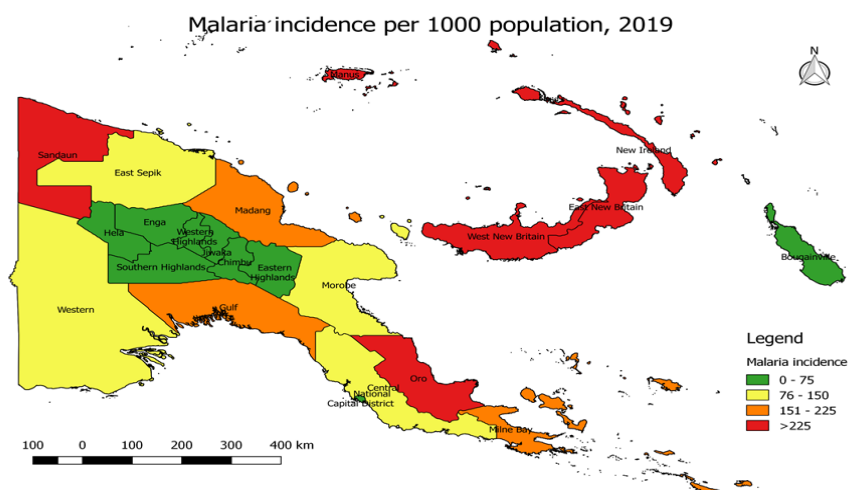
Indicator 5: HIV confirmed prevalence in pregnancy

Surveillance antenatal clinic PMGH 2010 - 2019

Year	Total tests	Confirm positive HIV	HIV conf +ve
2010	3664	88	2.40%
2011	3511	61	1.74%
2012	4383	34	0.78%
2013	4886	46	0.94%
2014	4714	74	1.57%
2015	4011	40	1.00%
2016	2149	27	1.26%
2017	2977	37	1.24%
2018	1253	23	1.84%
2019	2195	39	1.78%

Data source: PMGH Division of O&G Annual Report, 2019
NB: The PMGH ANC data is the most important data for the HIV estimates and projections exercise because of its long consistencies in keeping good records.

PMGH 2019	Antenatal Clinic		PMGH labour ward	
total tested	2195		1458	
total conf. Positive	39	1.8%	63	4.3%

HIV Prevalence among ANC mothers PMGH antenatal clinic, 2010-2019
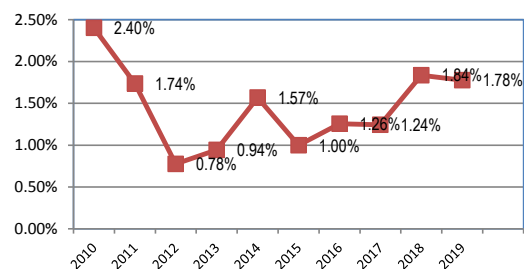
Performance: HIV prevalence among pregnant women 15-24 years had varied over the last 10-year period with the highest number of confirmed HIV cases reported in 2010. It declined from 1.74% to 0.78% between 2011 and 2012. Since 2012 there has been a fairly steady rise in incidence up to approximately 1.80 in 2018 and 2019. Surveillance Surveys (SSS) Antenatal surveillance among younger antenates (15-24 years) provides an indication of transmission among a more sexually active cohort. The HIV prevalence amongst this group has increased between 2014 and 2019.

(b) HIV serosurveillance at Antenatal clinics in PNG among 15 - 24 year olds

Year	15- 19 yr old			20 - 24 yr old			Total 15 - 24	
	screened	conf. Pos	% Pos	screened	conf. Pos	% pos	screened	% pos
2015	9,178	70	0.76%	23,009	170	0.74%	32,184	0.75%
2016	4,971	49	0.99%	12,146	123	1.01%	17,117	1.00%
2017	8,949	91	1.02%	22,241	206	0.93%	31,190	0.95%
2018	9,340	94	1.01%	22,521	217	0.96%	31,861	0.98%
2019	8,463	79	0.93%	20,085	187	0.93%	28,548	0.93%

Indicator 6 - Incidence of Diarrhoeal Diseases in children <5 years

Definition: The incidence of diarrhoeal disease in children under 5 years per 1000 children under 5 years.

Diarrhoeal Diseases in < 5 years (cases/1000 children)					
PROVINCE	2015	2016	2017	2018	2019
WESTERN	347	374	279	348	246
GULF	325	256	174	221	261
CENTRAL	232	191	198	165	169
NCD	589	521	401	376	350
MILNE BAY	126	74	81	60	83
ORO	211	215	196	106	63
SHP	363	322	233	218	230
HELA	659	459	569	490	458
ENGA	723	404	422	447	434
WHP	367	323	299	306	246
JIWAKA	249	243	196	251	219
CHIMBU	318	309	223	224	181
EHP	285	262	161	187	207
MOROBE	255	240	212	219	179
MADANG	177	150	119	115	113
EAST SEPIK	85	89	81	88	82
WEST SEPIK	365	167	167	188	169
MANUS	267	181	112	142	114
NEW IRELAND	142	120	138	126	123
ENBP	235	216	191	156	128
WNBP	207	257	185	243	144
ARoB	142	148	131	123	80
REGION	2015	2016	2017	2018	2019
SOUTHERN	311	278	228	218	196
HIGHLANDS	398	320	272	280	266
MOMASE	203	166	146	152	134
NGI	191	193	162	166	118
NATIONAL	284	241	205	207	182

Source: National Health Information System

Incidence of diarrhoeal disease in children <5 years, 2015-2019
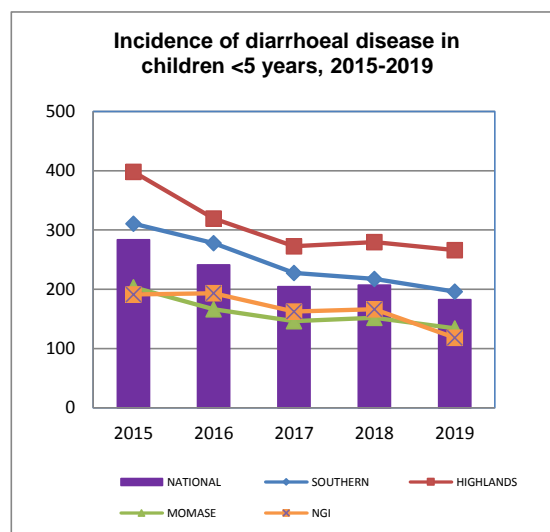
Indicator: Number of children less than 5 years old with outpatient presentation to health centre or hospital with diarrhoea per 1000 children under 5. Environmental influences on well-being include access to clean water, appropriate disposal of faeces and access to hygienic supplies of foods provide the basis to avoidance of diarrhoeal disease. Food hygiene has been an increasing concern with greater transportation and a proliferation of food outlets in an environment where regulation is mostly not enforced.

Performance: Overall there has been a decrease in incidence at national level over the past five years, though with marked variations between provinces and years. The very high rates noted in some highlands provinces such as Hela and Enga is at least partially attributable to the anomalous low under 5 population estimates for these provinces in the revised population estimates being currently used. Diarrhoeal incidence in Manus, West Sepik and Oro dropped by more than 50% since 2015.

Incidence of diarrhoeal diseases in children <5 years, 2019

Legend
Incidence of diarrhoeal diseases
- 0 - 150
- 151 - 300
- 301 - 450
- >450
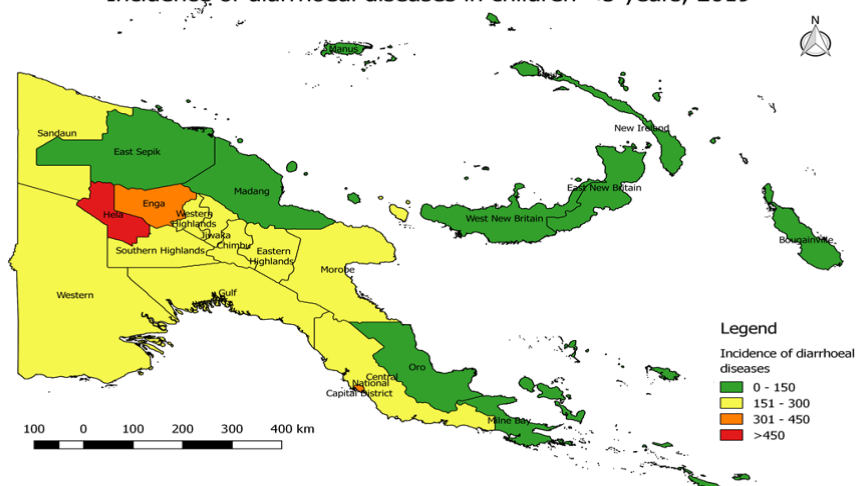
Indicator 7: Injury presentations

Definition: Total presentation of injuries to health centre and hospital outpatient for every 1000 population

Injuries reported at outpatients/1000 person, 2015-2019

PROVINCE	2015	2016	2017	2018	2019
WESTERN	54	49	44	48	46
GULF	44	50	26	33	44
CENTRAL	20	19	21	22	22
NCD	46	39	39	44	41
MILNE BAY	65	58	59	63	63
ORO	41	33	53	40	28
SHP	32	30	25	28	27
HELA	32	30	30	33	60
ENGA	32	26	28	31	38
WHP	38	38	34	33	41
JIWAKA	27	27	24	29	27
CHIMBU	39	40	28	32	32
EHP	19	18	16	15	22
MOROBE	26	21	22	23	29
MADANG	25	23	20	21	25
EAST SEPIK	21	19	20	21	23
WEST SEPIK	40	32	35	46	46
MANUS	53	67	62	54	56
NEW IRELAND	42	45	55	65	72
ENBP	56	54	47	46	47
WNBP	35	42	36	45	50
ARoB	25	23	25	19	19
REGION	**2015**	**2016**	**2017**	**2018**	**2019**
SOUTHERN	45	41	41	43	41
HIGHLANDS	30	29	25	27	33
MOMASE	26	23	23	25	28
NGI	41	43	41	42	45
NATIONAL	**34**	**32**	**30**	**32**	**35**

Source: National Health Information System

Outpatient injury presentations per 1000 population, 2015-2019
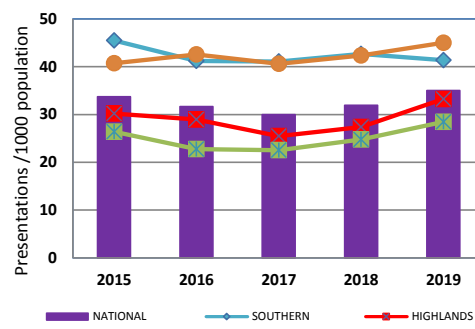
Indicator: Total presentation of injuries to health centre and hospital outpatient for every 1000 population
All injury is consolidated into one category although particular aspects of injury may be of inerest to analyze program intervention (e.g. transport related injury, domestic violence etc).

Performance: Outpatient injuries reported have remained consistent from 2015 to 2019 with figures from the Southern and NGI regions being comparably higher than the other regions and the national figures. New Ireland, Milne Bay, Manus, Western East New Britain provinces reported high injury rates during this 5-year period suggesting a need to investigate what types of injuries the patients present with and the causes of these injuries in these low-violence coastal areas.

These data differ from those captured through Verbal Autopsy studies, where higher prevalence is seen in several other provinces. More work is required to understand the causes and pattern of Injury in PNG to develop evidence-based prevention measures to consistently reduce the injury rates.

Injury presentations per 1000 population, 2019

Legend
Injury presentations
0 - 15
16 - 30
31 - 45
>45
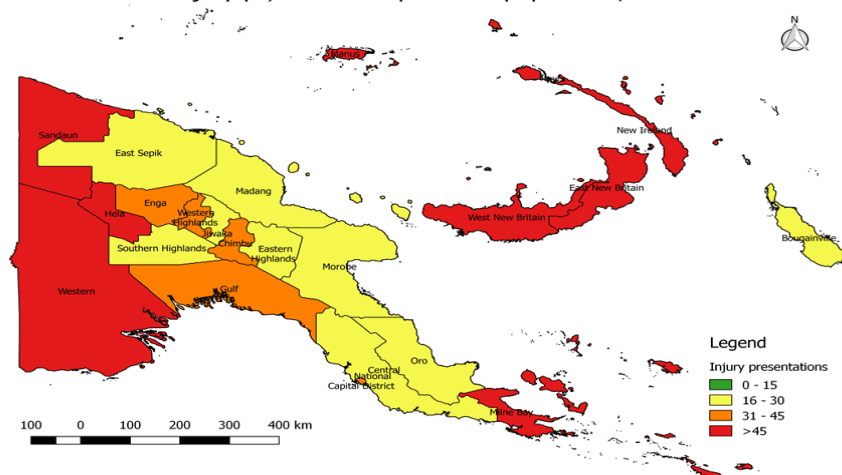
Indicator 8 - Outreach Clinics per 1000 children <5 years

Definition: Ratio of outreach clinics held to 1000 population under 5 years

Outreach clinics held for every 1,000 children < 5 yrs					
PROVINCE	**2015**	**2016**	**2017**	**2018**	**2019**
WESTERN	22	12	21	16	7
GULF	10	11	9	10	3
CENTRAL	34	31	39	37	39
NCD	2	2	3	2	1
MILNE BAY	99	85	90	71	70
ORO	27	26	31	23	29
SHP	23	19	25	36	43
HELA	50	30	40	57	73
ENGA	41	15	22	33	24
WHP	75	68	56	70	78
JIWAKA	29	28	19	29	30
CHIMBU	129	128	135	157	149
EHP	28	27	28	24	27
MOROBE	14	10	10	12	7
MADANG	16	16	15	16	18
EAST SEPIK	17	10	5	8	10
WEST SEPIK	22	22	23	21	34
MANUS	75	101	124	118	73
NEW IRELAND	33	44	39	45	35
ENBP	34	25	25	23	20
WNBP	40	19	15	27	20
ARoB	44	22	16	31	31
REGION	**2015**	**2016**	**2017**	**2018**	**2019**
SOUTHERN	35	29	34	28	27
HIGHLANDS	49	42	43	52	54
MOMASE	17	13	12	13	14
NGI	40	29	27	34	28
NATIONAL	**34**	**28**	**28**	**31**	**31**

Source: National Health Information System

Total outreach clinics held/1000 children <5 yrs, 2015-2019

Legend: NATIONAL, SOUTHERN, HIGHLANDS, MOMASE, NGI
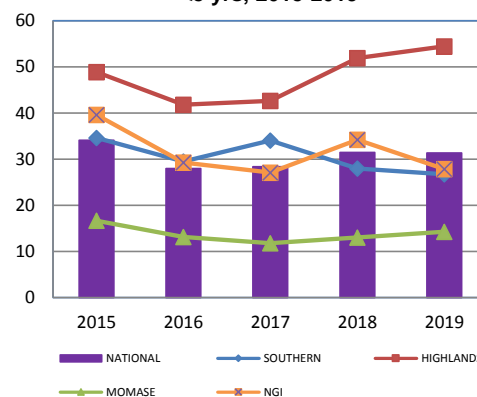
Indicator: The indicator calculates the ratio of outreach clinics (of all types) held per 1000 children under 5 years age. Outreach clinics provide a key platform for preventive child health programs and an opportunity for individual community health education. Previous assessments have demonstrated the correlation between rural outreach and immunisation coverage. The conduct of outreach clinics also provides an indication of the capacity of the health system to provide service provision obligations – identifying planning, finance, supply and human resource gaps and barriers.

Performance: There has been only slight decline in conducting outreach clinics since 2015. Regionally, Momase has performed poorly during the past 5 years. Higher levels of outreach services were reported in Chimbu, Western Highlands, Manus and Hela provinces in 2019. Gulf, Western, Morobe, and East Sepik need to improve outreach services. Outreach is shown to be vital in ensure preventive and treatment programs, such as immunisation, nutrition and maternity care services are provided to people living distant from health facilities.

Outreach clinics per 1000 children <5 years, 2019

Legend
Outreacg clinics
- 0 - 20
- 21 - 40
- 41 - 60
- >60
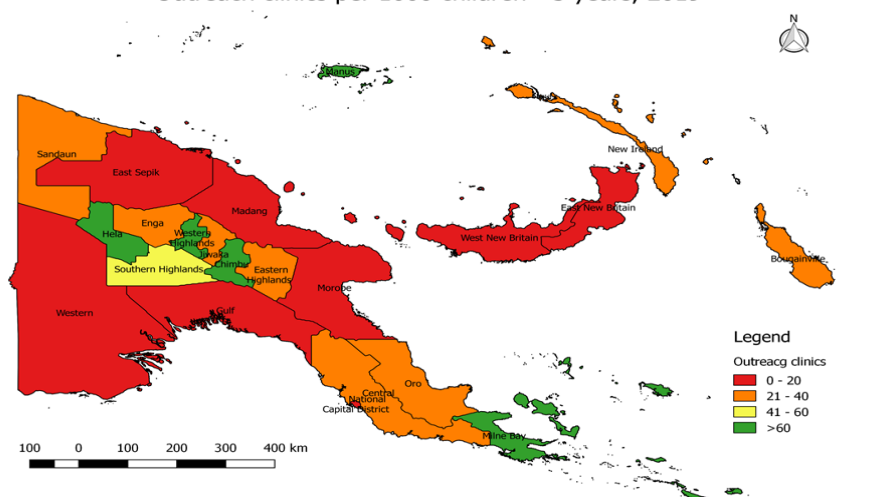
Indicator 9a - % Measles Vaccine Coverage for children under 1yr

Definition: Percentage of children under one year who have received the 9 – 11 month dose of measles vaccine.

% Measles vaccine coverage for children < 1 yr, 2015-2019					
PROVINCE	**2015**	**2016**	**2017**	**2018**	**2019**
WESTERN	26%	19%	25%	24%	16%
GULF	16%	24%	15%	20%	19%
CENTRAL	40%	31%	56%	27%	28%
NCD	71%	70%	57%	64%	63%
MILNE BAY	70%	57%	56%	52%	65%
ORO	51%	41%	29%	26%	26%
SHP	22%	18%	25%	38%	38%
HELA	77%	26%	44%	51%	64%
ENGA	49%	57%	32%	50%	49%
WHP	66%	46%	29%	35%	43%
JIWAKA	27%	33%	13%	15%	18%
CHIMBU	53%	49%	50%	37%	38%
EHP	40%	39%	45%	38%	29%
MOROBE	31%	23%	22%	27%	27%
MADANG	29%	23%	18%	15%	25%
EAST SEPIK	19%	19%	13%	11%	14%
WEST SEPIK	36%	34%	35%	29%	41%
MANUS	38%	85%	87%	57%	65%
NEW IRELAND	41%	47%	50%	46%	44%
ENBP	33%	53%	45%	46%	36%
WNBP	38%	44%	34%	49%	31%
ARoB	33%	35%	24%	34%	32%
REGION	**2015**	**2016**	**2017**	**2018**	**2019**
SOUTHERN	48%	42%	42%	38%	39%
HIGHLANDS	44%	37%	34%	38%	39%
MOMASE	28%	23%	20%	20%	25%
NGI	36%	46%	39%	44%	36%
NATIONAL	**39%**	**35%**	**32%**	**33%**	**34%**

Source: National Health Information System

% Measles vaccine coverage, <1 year , 2015-2019

Legend: NATIONAL, SOUTHERN, HIGHLANDS, MOMASE, NGI
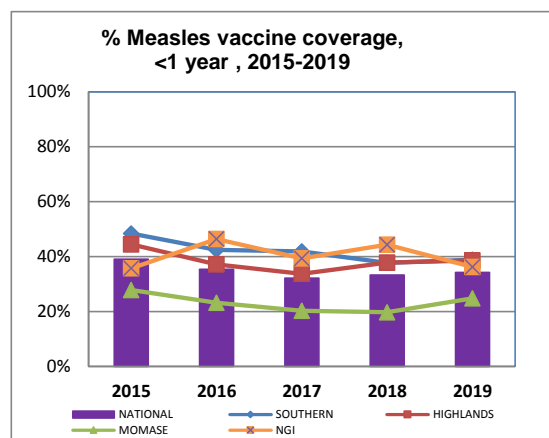
Indicator: Measures the Percentage of children under one year who have received the 9 –11 month dose of measles vaccine. Immunisation is an essential component for reducing under five mortality. Immunisation coverage estimates are used to monitor coverage and quality of child care services throughout the country. Measles is the leading cause of childhood mortality from vaccine preventable diseases. The indicator also provides a good general measure of health system performance.

Performance: The national coverage has dropped and remained stagnant at the lower levels since 2015. The current coverage rates leave most provinces susceptible to outbreaks of measles.

The poor performance of the vaccination program reflects problems with planning, funding, management, workforce deployment and supply – occurring at each level of the health system.

Measles vaccine coverage for children <1 year, 2019

Legend
Measles vaccine coverage
- 0 - 50%
- 51 - 70%
- 71 - 90%
- >90%
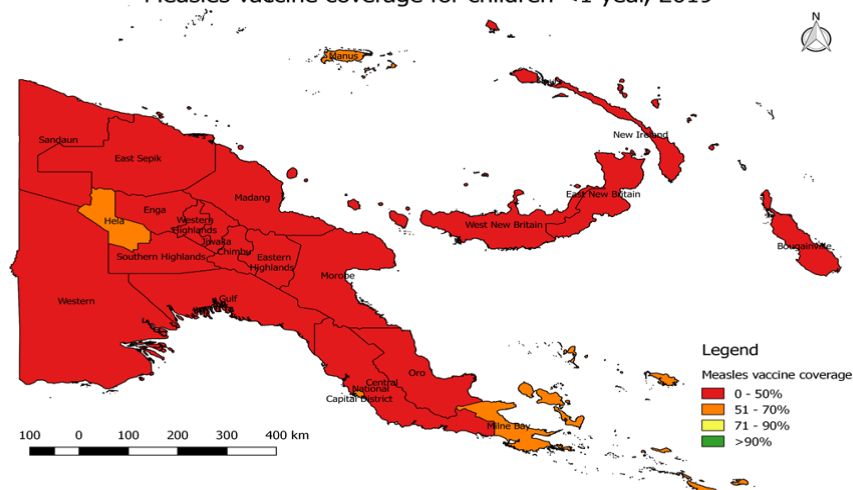
Indicator 9b - % 3rd Dose Pentavalent Coverage in Children under 1yr.

Definition: Percentage of children under one year who have received three doses of the DTP-HepB-Hib pentavalent vaccine

% 3rd dose Pentavalent coverage, < 1 yr, 2015-2019					
PROVINCE	**2015**	**2016**	**2017**	**2018**	**2019**
WESTERN	33%	20%	28%	24%	17%
GULF	17%	27%	18%	23%	23%
CENTRAL	46%	43%	45%	34%	36%
NCD	105%	99%	90%	97%	98%
MILNE BAY	81%	68%	62%	62%	68%
ORO	57%	38%	38%	33%	34%
SHP	28%	16%	27%	36%	41%
HELA	47%	28%	34%	55%	64%
ENGA	52%	60%	49%	59%	63%
WHP	58%	58%	45%	47%	60%
JIWAKA	31%	23%	20%	21%	26%
CHIMBU	58%	66%	61%	46%	49%
EHP	51%	40%	51%	41%	41%
MOROBE	46%	43%	33%	36%	36%
MADANG	25%	24%	19%	22%	24%
EAST SEPIK	28%	18%	12%	17%	15%
WEST SEPIK	42%	33%	37%	30%	32%
MANUS	71%	104%	78%	76%	66%
NEW IRELAND	67%	60%	61%	51%	53%
ENBP	64%	67%	59%	58%	53%
WNBP	57%	54%	44%	51%	42%
ARoB	50%	49%	39%	45%	40%
REGION	**2015**	**2016**	**2017**	**2018**	**2019**
SOUTHERN	61%	53%	50%	49%	50%
HIGHLANDS	45%	40%	41%	43%	48%
MOMASE	35%	30%	24%	26%	27%
NGI	59%	59%	51%	53%	47%
NATIONAL	**47%**	**42%**	**39%**	**41%**	**42%**

Source: National Health Information System

% Pentavalent vaccine 3rd dose coverage, <1 yr, 2015-2019

Legend: NATIONAL, SOUTHERN, HIGHLANDS, MOMASE, NGI
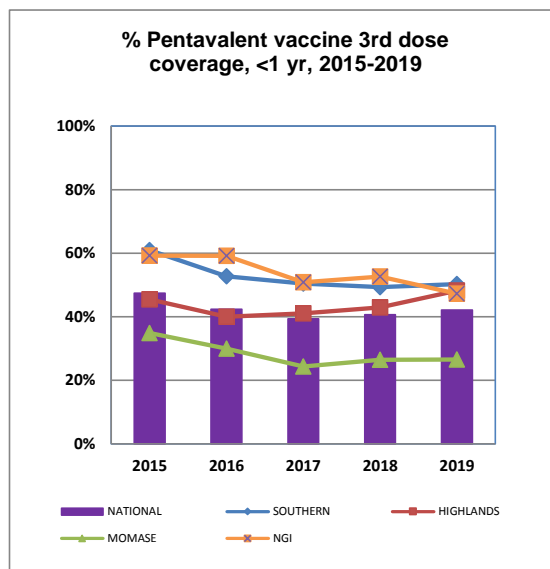
Indicator: Measures the proportion of children under 1 year who have received three doses of DTP-Hib - HepB (Pentavalent) vaccine. Prior to 2009, TA (DTP) was provided rather than the pentavalent vaccine.

Performance: There has been persistent low coverage nationally, with only the NCD showing consistently good performance. Nationally, the coverage was highest in 2015, and consistently about five points lower after that.

3rd Dose Pentavalent Coverage in Children <1 year, 2019

Legend
3rd Dose Pentavalent Coverage
- 0 - 50%
- 51 - 70%
- 71 - 90%
- >90%
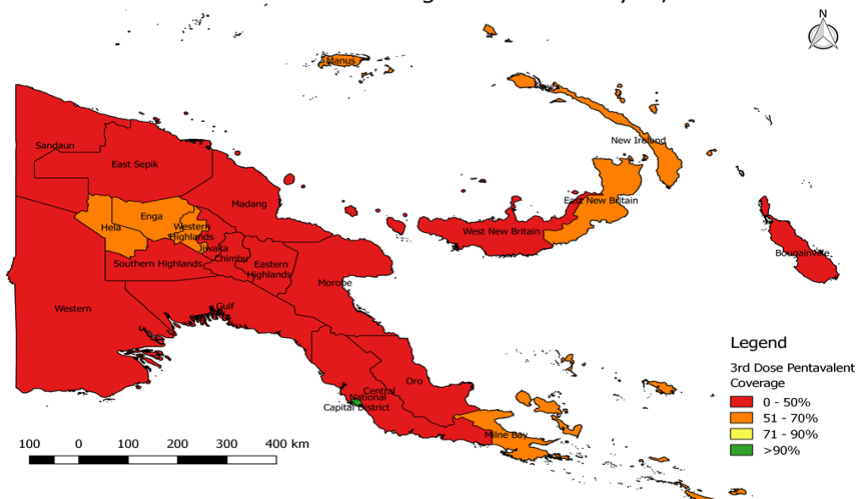
Indicator 10a - % Supervised Births at Health Facilities

Definition: The percentage of births that occur in a hospital and health centres

% of Births in Health Facilities, 2015-2019					
PROVINCE	**2015**	**2016**	**2017**	**2018**	**2019**
WESTERN	45%	29%	26%	35%	32%
GULF	28%	21%	23%	15%	22%
CENTRAL	24%	22%	21%	21%	28%
NCD	122%	114%	106%	109%	112%
MILNE BAY	51%	45%	46%	48%	43%
ORO	32%	26%	22%	23%	24%
SHP	22%	20%	18%	16%	18%
HELA	32%	30%	29%	25%	30%
ENGA	33%	25%	21%	21%	26%
WHP	51%	40%	40%	43%	42%
JIWAKA	25%	25%	24%	30%	32%
CHIMBU	47%	46%	43%	37%	40%
EHP	38%	36%	37%	19%	36%
MOROBE	17%	29%	30%	27%	28%
MADANG	26%	25%	22%	19%	25%
EAST SEPIK	19%	20%	19%	17%	20%
WEST SEPIK	26%	25%	20%	20%	20%
MANUS	69%	54%	44%	51%	49%
NEW IRELAND	41%	53%	44%	39%	45%
ENBP	77%	75%	68%	61%	63%
WNBP	54%	53%	45%	42%	35%
ARoB	54%	48%	50%	46%	43%
REGION	**2015**	**2016**	**2017**	**2018**	**2019**
SOUTHERN	55%	47%	45%	47%	48%
HIGHLANDS	35%	31%	29%	26%	31%
MOMASE	21%	25%	24%	21%	24%
NGI	59%	58%	52%	48%	46%
NATIONAL	**38%**	**36%**	**34%**	**32%**	**36%**

Source: National Health Information System (NCD - from PMGH O&G report)

% Supervised Births in health facilities, 2015-2019
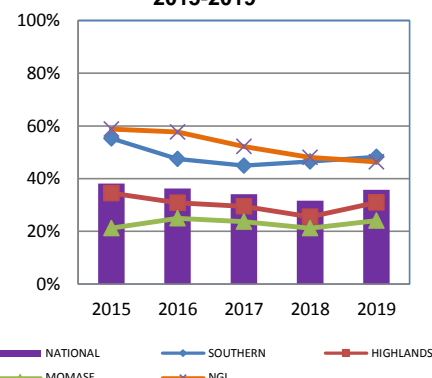
Indicator: This indicator measures the proportion of births at health facility attended by skilled health personnel [Supervised deliveries]. Measuring maternal mortality is unusually difficult and currently only be done through well conducted surveys. Supervised deliveries, together with antenatal care, availability of oxygen and properly equipped hygienic delivery rooms and trained staff contribute to the reduction of maternal mortality and hence can be considered contributing proxy measures for maternal mortality.

Performance: The percentage of supervised deliveries has continued to fall steadily from 2015 to 2018 then increased from 32% in 2018 to 36% in 2019. The very high percentage for NCD occurs as women attend from a much larger catchment than just Port Moresby to deliver at PMGH. ENBP, with around two-thirds supervised deliveries through out the period, performed well above other provinces. Low rates of supervised deliveries contribute to higher maternal and neonatal morbidity and mortality. Skilled birth attendants and equipped health facilities improve outcomes of maternal health.

Percentage of births attended by skilled personnel at health facilities, 2019
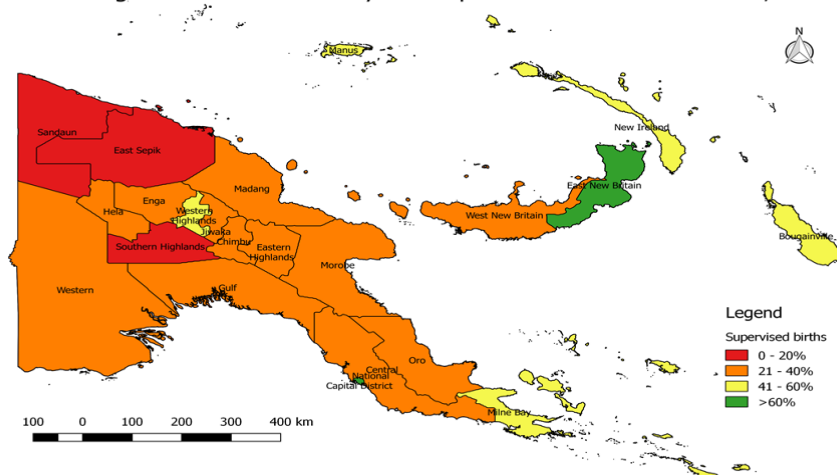
Indicator 11 - Antenatal Coverage

Definition: The percentage of pregnant women that attended at least one antenatal visit at hospital, health centre or outreach clinic during the pregnancy.

Antenatal coverage (at least 1 visit during pregnancy)					
PROVINCE	**2015**	**2016**	**2017**	**2018**	**2019**
WESTERN	66%	37%	43%	40%	36%
GULF	45%	47%	35%	38%	39%
CENTRAL	47%	43%	38%	38%	42%
NCD	82%	108%	103%	103%	113%
MILNE BAY	66%	56%	63%	62%	59%
ORO	52%	42%	43%	38%	34%
SHP	35%	32%	31%	28%	33%
HELA	49%	49%	43%	39%	51%
ENGA	39%	43%	41%	41%	46%
WHP	47%	61%	59%	72%	61%
JIWAKA	41%	44%	42%	43%	44%
CHIMBU	59%	59%	57%	50%	50%
EHP	50%	54%	52%	46%	52%
MOROBE	54%	45%	51%	48%	47%
MADANG	45%	40%	36%	33%	41%
EAST SEPIK	35%	33%	34%	31%	32%
WEST SEPIK	70%	43%	42%	41%	40%
MANUS	79%	69%	65%	57%	64%
NEW IRELAND	68%	65%	58%	59%	57%
ENBP	85%	77%	73%	67%	69%
WNBP	73%	67%	59%	59%	60%
ARoB	70%	65%	64%	59%	55%
REGION	**2015**	**2016**	**2017**	**2018**	**2019**
SOUTHERN	62%	58%	58%	56%	58%
HIGHLANDS	45%	48%	45%	44%	49%
MOMASE	49%	40%	41%	38%	43%
NGI	75%	69%	64%	61%	64%
NATIONAL	**54%**	**51%**	**49%**	**47%**	**51%**

Source: National Health Information System

% pregnant women attending 1st ANC clinic, 2015-2019
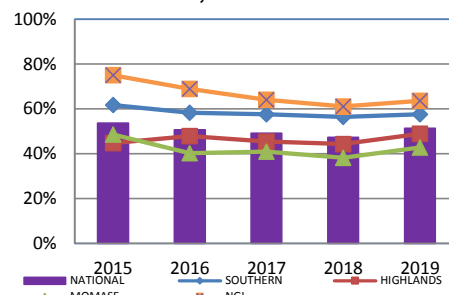
Indicator: Antenatal care is an indicator of access to and use of health care during pregnancy. The antenatal period presents opportunities for reaching pregnant women with interventions that may be vital to protecting their own health and well-being throughout pregnancy and also that of their infants by managing risks and preventing maternal and neonatal morbidity and death.
.

Performance: Coverage rates nationally were highest (54%) in 2015, but then dropped and fluctuated between 47 and 51%, reaching 51% in 2019. They were only good in the NCD, followd by ENBP, WNBP, Manus, New Ireland, ARoB and Milne Bay, but even in these better performing provinces'rates held steady just in the 55-85% range. Western, Gulf, Oro and West Sepik showed declines, while Enga and WHP showed increasing trends. The remaining provinces were stagnant at lower levels. However all these rates are not very meaningful, as they only note one antenatal visit out of 8 recommended by the WHO since 2016, and the benefit from one only visit may be minimal. Poor performance in antenatal coverage is likely to be a result of factors like those outlined with immunisation, where poor funding and poor planning results in less outreach.

Antenatal Coverage, 2019

Legend
Antenatal coverage
- 🟥 0 - 25%
- 🟧 26 - 50%
- 🟨 51 - 75%
- 🟩 >75%
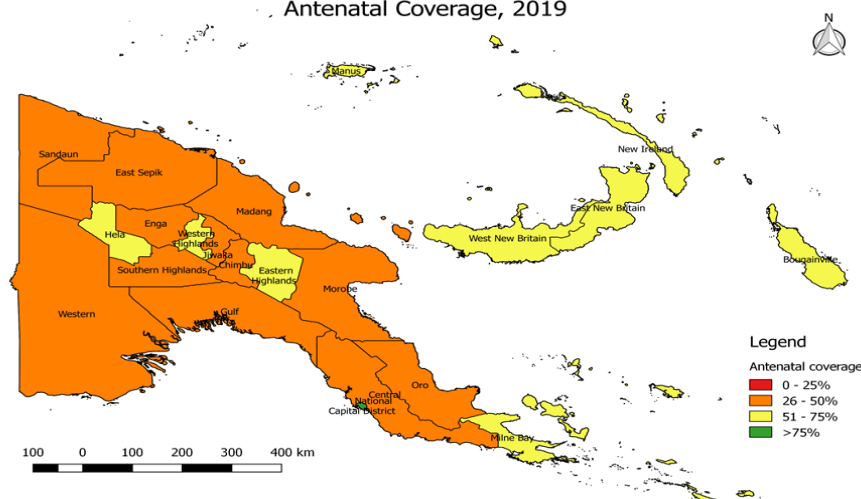
Indicator 12 - Family Planning Use

Definition: The amount of contraception necessary to protect one couple per year.

Couple years of protection (CYP)/1000 women 15-44 years					
PROVINCE	2015	2016	2017	2018	2019
WESTERN	188	197	217	203	173
GULF	66	80	86	112	130
CENTRAL	42	40	52	52	74
NCD	80	128	305	200	135
MILNE BAY	196	256	218	225	209
ORO	72	78	96	158	123
SHP	55	61	62	59	69
HELA	51	48	102	95	80
ENGA	381	63	44	55	55
WHP	113	139	149	229	196
JIWAKA	70	74	85	140	145
CHIMBU	119	114	173	150	123
EHP	140	141	138	121	189
MOROBE	80	70	124	127	156
MADANG	68	93	95	103	189
EAST SEPIK	50	62	108	98	94
WEST SEPIK	79	84	121	190	193
MANUS	134	155	144	104	114
NEW IRELAND	41	79	101	85	100
ENBP	113	133	148	160	195
WNBP	163	201	130	101	109
ARoB	58	58	57	61	63
REGION	2015	2016	2017	2018	2019
SOUTHERN	110	137	186	167	143
HIGHLANDS	139	94	106	116	124
MOMASE	69	76	112	121	154
NGI	101	124	113	105	121
NATIONAL	108	102	124	126	135

Source: National Health Information System
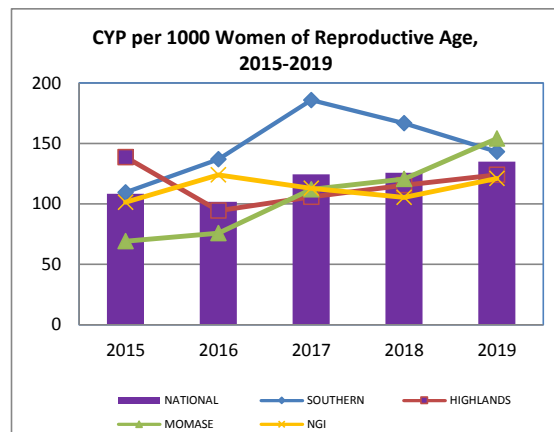
Indicator: The indicator identifies modern methods (sterilisation, injectable Depo-Provera, Oral contractive Pill, Intra-uterine devices and implants); Traditional methods (most frequently ovulation method) are reported separately. Condom use, while a relatively common form of contraception, is not included, as availability is wide, and not fully measurable through the health sector data

Performance: There is improvement in overall FP coverage over the past three years, although mainly in about half of the provinces. The likely contributor to this is the introduction on a larger (but location specific) scale of Long-acting reversible contraceptives (LARC). This demonstrates that an organized and wide-reaching program with LARC is likely to achieve important improvements in addressing community desire for pregnancy protection and reducing overall fertility rates[22]

Family Planning Use, 2019

Legend
CYP per 1000 WRA
- 0 - 50
- 51 - 100
- 101 - 150
- >150
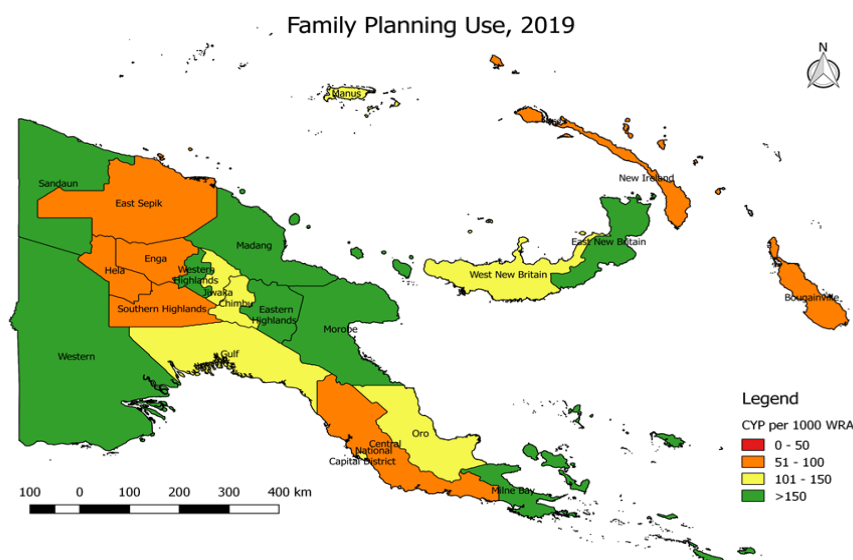
Indicator 13: Proportion (%) of children <5 years diagnosed with a fever who are treated with appropriate anti-malarial drugs (therapy)

Defintion: Percentage of children<5 yrs who present as outpatient with fever (confirmed or suspected malaria) who are treated with recommended first-line anti-malarial therapy

Indicator 14: Proportion of children <5 years sleeping under Long Lasting Insecticide-treated Net

Defintion:
Proportion (%) of children <5yrs sleeping under LLIN

Country wide household survey 2016-2017					
children under 5 years					
	Indicator 14		Indicator 13		
Regions	# surveyed	use (LLIN)	# fever	% with fever	% treatment
Southern	658	71.3%	28	4%	55.1
Highlands	280	34.0%	3	1%	13.2
Momase	675	72.0%	31	5%	38.6
NGI	481	52.5%	11	2%	63.9
Actual (Survey)	2094	59.5%	73	3%	45.30%
2017 Target		85%			65%

Source: PNG Institute of Medical Research

In areas of intense malaria transmission, malaria related morbidity and mortality are concentrated in young children, and the use of insecticide treated nets by children under 5 years has been demonstrated to considerably reduce malaria disease incidence, malaria related anaemia, and all cause under 5 year old mortality.

The survey identified that 45.30% of fever cases in children <5 years of age received appropriate first line anti-malarial therapy, not reaching the targeted treatment rate of 65% (Indicator 13). Indicator 14 results showed that only onlly 59.5% of chilldren <5y were sleeping under an LLIN, also not reaching the target of 85%.
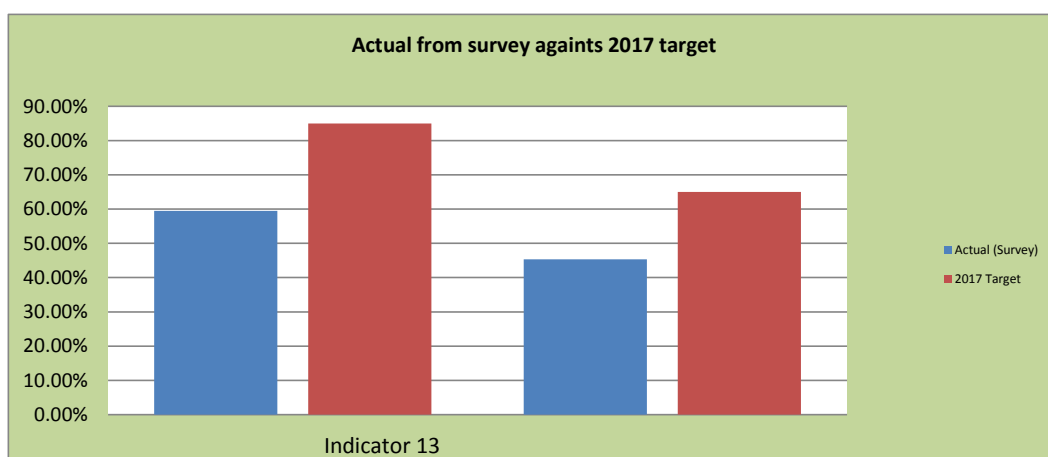
Performance: Target set in 2017 for proportion of children sleeping under LLIN was 85%. The actual survey results showed 2017 coverage significantly lower at 59.5%. Regionally, 72.0% of Momase children slept under treated nets whilst Southern and NGI reported 71.3% and 52.5% respectively. Due to the geographical location of the Highlands region, an exception can be made on the low percentage of children <5 years sleeping under LLIN.

Indicator 15: HIV positive mothers who receive ART

Defintion:
Proportion of HIV Positive mothers who receive ART to reduce the risk of Maternal to Child Transmission

Numerator	2015	2016	2017	2018	2019
Women who received single dose Nevarapine	0	NA	NA	NA	0
Women who received dual ART (NVP + AZT)	0	NA	NA	NA	0
Women who received triple therapy (AZT + 3TC)					
Women who were newly initiated on lifelong ART during their current pregnancy	NA	252	NA	NA	375
Women who had already commenced lifelong ART before their current pregnancy					877
Total receiving ART	497	507	720	959	1252
Denominator					
Estimated Number of HIV pregnant women	1496	1323	1365	1411	1528
Percentage	33%	38%	53%	68%	82%

NA: Indicates data not available at the time of reporting

Performance: The administration of HIV treatment in pregnancy greatly reduces the risk of transmission of the virus to the infant by reducing the viral load. The sooner during the pregnancy this is commenced, the better result.

The estimate of women with HIV in pregnancy is determined by modelling. In 2019, there were 1528 pregnant women estimated to have HIV. About three-quarters of these received treatment, a steady improvement on recent years, yet still leaving 276 infants susceptible to infection. In part, the reason for this is the low antenatal coverage rate.

Indicator 15: HIV positive mothers who receive ART

Indicator 16: Case Notification Rate for all tuberculosis cases

Definition: Case notification rate (CNR) of all TB cases: The number of all cases notified in a given year over the total population multiplied by 100,000. Thus it is the rate per 100,000 population.

Notifications of TB

Year	New SS+	Relapses	Failure	Defaulted	SN	NDNA	EP	Others	All Cases	Population	CNR All forms/ 100,000 popn
2015	4,149	246	117	295	2,992	7,000	12,335	1,962	29,096	7,984,229	364
2016	4,503	282	110	307	3,305	7,519	11,959	1,758	29,743	8,194,484	363
2017	3,784	160	61	159	3,326	7,618	11,406	1,420	27,934	8,410,402	332
2018	4,400	835	201	583	3,458	6,978	12,125	775	29,355	8,632,139	340
2019	5,671	342	4	272	3,587	7,949	14,133	164	32,122	9,301,793	345

Notifications of TB by Province in 2019

Province	New SS+	Relapses	Failure	LTFU	SN	NDNA	EP	Others	All Cases	Population	CNR All forms/ 100,000 popn
HELA	44	2	-	-	22	224	167	1	460	308,706	149
NCD	1,609	152	-	55	939	1,275	2,779	13	6,822	472,121	1,445
WNB	305	17	-	25	161	996	720	6	2,230	342,642	651
NEW IRELAND	113	3	-	11	56	144	147	2	476	275,983	172
MADANG	463	19	-	40	210	484	813	5	2,034	611,234	333
MOROBE	699	31	-	16	476	1,318	1,920	13	4,473	790,647	566
ORO	213	9	-	18	64	363	533	65	1,265	237,850	532
WHP	115	3	-	1	126	280	664	-	1,189	466,836	255
MANUS	21	-	-	4	6	38	62	1	132	76,621	172
JIWAKA	62	5	-	4	25	38	295	1	430	531,929	81
ENB	211	23	1	18	145	296	255	6	955	435,753	219
CENTRAL	185	5	1	5	85	150	326	1	758	355,217	213
ENGA	113	3	-	1	247	239	741	1	1,345	568,921	236
AROB	128	13	-	18	46	149	185	1	540	320,820	168
SANDAUN	113	12	-	11	82	124	102	3	447	305,035	147
SHP	59	2	2	4	112	186	318	15	698	656,472	106
WESTERN	336	6	-	9	169	137	1,057	1	1,715	245,327	699
GULF	205	12	-	12	67	30	304	4	634	209,931	302
MILNE BAY	158	7	-	5	51	99	245	1	566	336,903	168
EHP	207	6	-	5	142	301	1,292	-	1,953	711,993	274
CHIMBU	85	7	-	2	156	317	551	10	1,128	491,924	229
EAST SEPIK	227	5	-	8	200	761	657	14	1,872	548,927	341
Grand Total	5,671	342	4	272	3,587	7,949	14,133	164	32,122	9,301,792	345

Source: NTB program reports

Annual TB Incidence of all forms (/100,000)

Year	TB Cases Notified	Popn	CNR (all forms TB: cases /100,000)	WHO Estimated Incidence	WHO Estimated # of TB Cases	CDR
2015	29,096	7,984,229	364	432	34,492	84%
2016	29,743	8,194,484	363	432	35,400	84%
2017	27,934	8,410,402	332	432	36,333	77%
2018	29,355	8,632,139	340	432	37,291	79%
2019	32,122	9,301,792	345	432	40,184	80%

Indicator: The Indicator looks at all forms of TB that are identified (this has previously been reported as sputum positive TB only). The capacity of the NTB program to support health services in diagnosis of TB has expanded in recent years. These data include all provinces/districts, although it is acknowledged that some districts have yet to be mobilised in the program.

NA: Indicates data not available at the time of reporting

Performance: The estimated incidence is based on WHO modeling. It is an estimate, and may not fully represent the burden of TB in the country. Case Notification Rate is a direct measure of the National TB Program (NTP) capacity to detect TB cases. There has been increasing case notification from 2015 onwards and this can be attributed to several factors such as the introduction and roll-out of Xpert MTB/RIF testing and improvement in the submission of Basic Management Unit (BMU) reports to the national level. The NTP faces challenges in terms of human resource capacity to identify, and correctly diagnose and treat TB patients. To address the present challenges, the NTP conducted a joint external review of the program, which informed the development of costed national strategic plan for TB 2020-2025. This strategic plan will address the programmatic gaps and build on the positive lessons learned.

Indicator 17: Treatment success rate for tuberculosis

Definition: The percentage of all new sputum smear TB cases in a given year who complete 6 months of short course anti-tuberculosis treatment

Province	2015		2016		2017		2018		2019	
	NS+ Cure Rate	NS+ Success Rate	NS+ Cure Rate	NS+ Success Rate	NS+ Cure Rate (%)	NS+ Success Rate (%)	NS+ Cure Rate (%)	NS+ Success Rate (%)	NS+ Cure Rate (%)	NS+ Success Rate (%)
WESTERN	36%	68%	62%	80%	35%	63%	30%	83%	33%	79%
GULF	10%	38%	11%	46%	47%	78%	49%	70%	53%	69%
CENTRAL	45%	79%	63%	87%	53%	82%	48%	70%	58%	73%
NCD	59%	74%	65%	76%	62%	14%	57%	77%	69%	84%
MILNE BAY	64%	77%	69%	74%	75%	78%	75%	85%	60%	73%
ORO	46%	62%	57%	72%	66%	85%	50%	70%	57%	79%
SHP	6%	46%	21%	37%	49%	66%	60%	79%	5%	76%
ENGA	37%	54%	56%	64%	67%	83%	47%	55%	60%	72%
WHP	52%	68%		69%	57%	71%	45%	67%	44%	62%
HELA	NA	NA	0%	0%	0%	0%	6%	9%	37%	51%
JIWAKA	NA	NA	68%	85%	52%	82%	40%	77%	43%	74%
CHIMBU	36%	75%	39%	65%	40%	65%	34%	63%	30%	82%
EHP	44%	75%	57%	72%	73%	81%	60%	73%	68%	74%
MOROBE	74%	84%	75%	86%	67%	80%	71%	82%	69%	83%
MADANG	68%	83%	69%	79%	57%	70%	57%	71%	57%	70%
EAST SEPIK	50%	69%	37%	67%	25%	47%	27%	68%	28%	73%
SANDAUN	51%	77%	37%	66%	35%	56%	47%	64%	31%	64%
MANUS	58%	75%	47%	65%	43%	43%	31%	69%	27%	85%
N_IRELAND	43%	66%	66%	75%	66%	74%	27%	41%	47%	65%
ENB	50%	59%	60%	71%	40%	62%	39%	63%	40%	57%
WNB	38%	51%	50%	63%	39%	57%	51%	75%	46%	63%
ARoB	55%	70%	39%	66%	35%	65%	57%	76%	60%	85%
National	**52%**	**70%**	**59%**	**74%**	**56%**	**72%**	**54%**	**74%**	**50%**	**76%**

National Cure Rates and treatment Success Rates 2015-2019
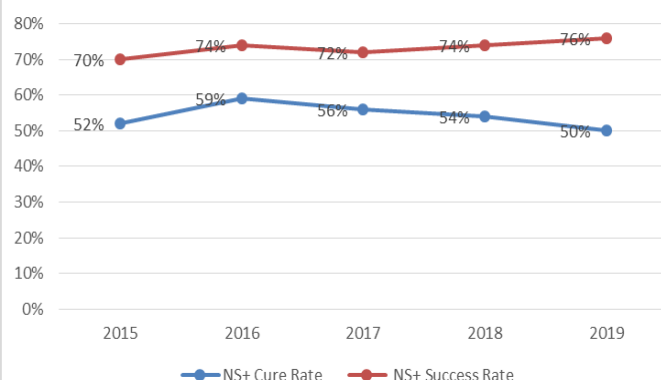
Indicator: Treatment success is a measure of the performance of the national TB treatment programmes. The indicator assesses only those who are sputum positive at diagnosis. "Cure" refers to those who have converted to sputum negative status at the completion of treatment (for at least 2 sputum smears) and "success" includes those who are cured as well as those who have completed six months of anti-tuberculosis chemotherapy.

Performance: There is a slight increase in both the cure rates and success rates in 2015. This shows the current efforts by the National TB Program (NTP) and implementing partners since 2015. In 2016, non-monetary incentives were provided to patients and treatment supporters that contributed in encouraging patients adherence to treatment. Some of the non-monetary incentives include: transportation reimbursements; food vouchers; vests; phone credits and umbrellas. Advocacy, communication and social mobilization (ACSM) materials were also distributed to health facilities that emphasizes the benefits of seeking health care and treatment adherenc. The drop in the cure rate and treatment success rate in 2018 is due to high proportion of sputum not done, not available (NDNA), high loss-to-follow-up rate and delayed reporting from the health facilities. Sustained commitment and support for treatment is required to ensure successful treatment outcomes of TB.

Indicator 18: Proportion of allocated provincial-level health funds that are spent

Definition: Proportion (%) of Provincial level funding - GoPNG (that is, Health Function Grant (HFG)) and Development Partners (DP) funds - that are expended. This does NOT include funding to hospitals or funding to Church Health Services.

Year	2015	2016	2017	2018	2019
Proportion of funds expended	99.0%	101.9%	99.0%	109.5%	80.0%

Proportion of Funds that are expended
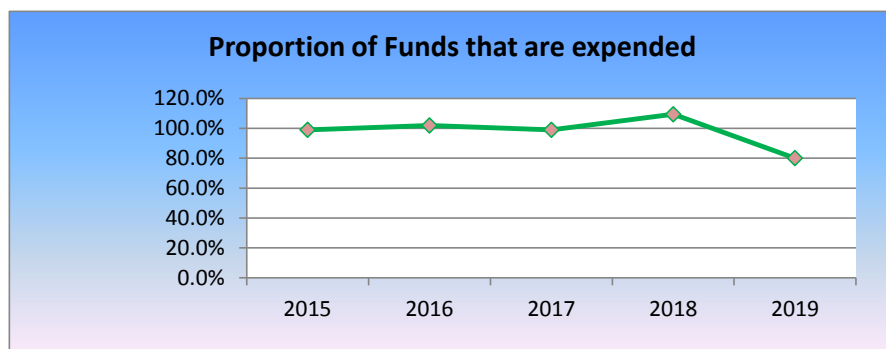
Analysis:

In 2017 proportion of funds spent on rural health services from both the HFG, and the Development Partners funds in the provinces was almost 100%. In 2018 it was slightly over 100% at 109.5%, and in 2019 it decline to 80%. The under spending of funds for rural health services in 2019, could have been due to the slow releases of the Health Function Grant by the national agencies to the PHA provinces, rather than lack of capacity to spend by the PHAs. For the slowness in drawing down and spending of the DPs or HSIP funds by PHAs, it can be due to several factors like:

I) Lack of manpower in terms of HSIP staff who manages the HSIP subsidiary trust accounts, e.g. only one staff who is overwhelmed.

II) Unexpected disease outbreaks like Polio which diverts attention from implementing existing planned activities, projects.

Source:

1. IFMS budget & expenditure data, 2011-2018 provided by Treasury and Finance

2. Final Budget Outcome Report (FBO), 2015-2018 provided by Treasury, available on Treasurer's website.

3. Volume 2 b, Budget Documents, 2015 - 2018, DoT

Indicator 19: Provincial health expenditure as a proportion of estimated need

Definition:
Provincial health expenditure (GoPNG/DPs) as a proportion (%) of estimated minimum health

Agency	2012	2013	2014	2015
GoPNG expenditure	64.0	68.6	77	81
DPs (HSIP) expenditure	NA	NA	NA	NA
Total	64.0	68.6	77.2	81.0
Minimum cost of rural health service delivery	111.2	132.3	143.4	123
Expenditure as a % of min. cos for rural health	58%	52%	54%	66%

Source:
1. 2014 Final Budget Outcome (FBO), department of Treasury
2. Department of Health HSIP TA Report 2014
3. Denominator is the Minimum Cost of Services model that was determined by NEFC as per its Cost of Service Model. The minimum cost of services also equates to the minimum health expenditure that should occur every year by each respective non PHA provinces, and or PHA provinces.

Notes:
1. NEFC was unable to obtain DPs i.e. HSIP expenditure for the provinces from NDoH for the period 2012-2015.
2. NA: Data not available at the time of reporting.
3. 2016-2019 data not available at the time of reporting.

Expenditure as a share (%) of minimum cost of service delivery for rural health, 2012-2015
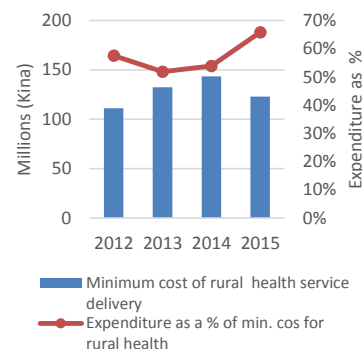
Analysis:

1. Provinces were able to spend on average only 57.5% of their resource envelope, to meet the minimum cost of service delivery for rural health over the period 2012-2015. This is not good enough.

2. They should be spending up to100% of the minimum cost of rural health services, from their total resource envelope which basically consists of the Health Function Grant, Provincial Internal Revenue, and DP funding or HSIP funds.

3. However, from the above table, it should be noted here that expenditure as a share of the minimum cost of service delivery for rural health, 2012-2014 is low or less than 60%, because of two things.

I) HSIP funds or DP funds is not included as NEFC was not able to obtain the provincial HSIP expenditure data from the NDoH for the period 2012-2015.

II) Some provinces do not regard health as a priority , thus their resources for rural health in terms of budget allocation is lower, compared to their budget allocation for their other priorities like education, agriculture, roads etc.

4. Expenditure as noted in the above table does not include expenditure by CHS, using the CHS Grant as expenditure data from the PGAS, and IFMS does not capture such expenditure data, as CHS is not a government entity but an NGO.

5. In future it has been agreed to by the NEFC as per continuing dialogue with the NDoH that it should also be included. This is because the Grant that CHS agencies get from the government is also being used to fund similar rural health programs that government run health facilities also implement.

6. GoPNG expenditure as per the above table only includes spending from Health Function Grant, and provincial internal revenue.

Indicator 20 - Supervisory Visits

Definition: Proportion of health centres that have received at least one supervisory visit by provincial or district program/management staff during the past year.

% of Health facilities supervised per yr, 2015-2019					
PROVINCE	**2015**	**2016**	**2017**	**2018**	**2019**
WESTERN	20%	16%	13%	15%	50%
GULF	38%	38%	29%	0%	14%
CENTRAL	45%	65%	49%	53%	50%
NCD	50%	52%	45%	63%	64%
MILNE BAY	93%	90%	83%	98%	93%
ORO	61%	61%	40%	47%	53%
SHP	59%	38%	48%	59%	NA
HELA	72%	75%	68%	61%	69%
ENGA	65%	86%	73%	83%	78%
WHP	87%	87%	82%	90%	91%
JIWAKA	70%	71%	33%	46%	75%
CHIMBU	47%	72%	53%	25%	75%
EHP	17%	47%	47%	44%	57%
MOROBE	22%	32%	25%	32%	55%
MADANG	35%	35%	52%	37%	48%
EAST SEPIK	29%	27%	15%	29%	35%
WEST SEPIK	47%	58%	61%	64%	53%
MANUS	54%	85%	77%	38%	77%
NEW IRELAND	23%	28%	44%	38%	63%
ENBP	38%	41%	69%	59%	56%
WNBP	47%	72%	71%	85%	69%
ARoB	61%	89%	69%	72%	74%
REGION	**2015**	**2016**	**2017**	**2018**	**2019**
SOUTHERN	52%	55%	46%	51%	58%
HIGHLANDS	59%	67%	59%	60%	75%
MOMASE	32%	37%	38%	39%	48%
NGI	44%	61%	65%	62%	67%
NATIONAL	**48%**	**56%**	**52%**	**53%**	**62%**

Source: National Inventory of Health Facilities

NA: Data not available at the time of reporting

% of Health facilities supervised per year, 2015-2019
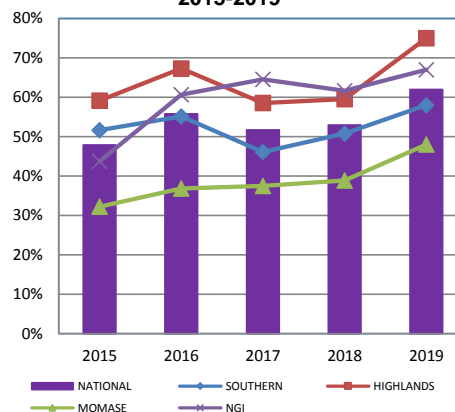
Indicator: This indicator looks at supervision of health staff at the facility level by provincial and district health officers. Regular supervision by provincial health office and/or district management staff provides the opportunity to identify and support health centre staff in meeting the needs of their respective communities.

Performance: The level of supervision increased from 48% in 2015 to 56% in 2016 then steadily declined between 2017 and 2018 from 52% to 53%. Higher levels of supervison were reported in 2019 with 62%. There was a good increase in PHA provinces including Milne Bay and Western Highlands. Factors that attributed to this included poor reporting by several provinces, limited human resources and lack of supervision due to poorly financed health systems. The gains in 2016 could not be sustained with coverage falling to 52% and 53% respectively between 2017 and 2018. This adversely affects staff work morale and quality of service and program delivery and continued resources are required.

Supervisory Visits, 2019

Legend
Supervisory Visits
- 0 - 25%
- 26 - 50%
- 51 - 75%
- >75%
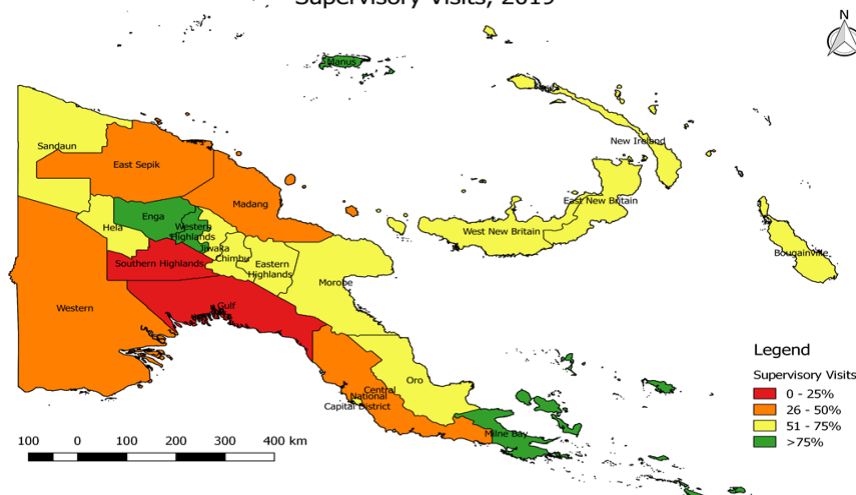
Indicator 21 - Outpatient visit per person per year

Definition: The average outpatient visit to health facility (health centre & hospital) per person per year

Average outpatient visits per person, 2015-2019

PROVINCE	2015	2016	2017	2018	2019
WESTERN	2.40	2.64	2.06	2.18	1.88
GULF	1.64	1.94	1.24	1.22	1.91
CENTRAL	0.94	0.93	0.91	0.94	0.96
NCD	1.14	1.07	1.00	1.06	1.06
MILNE BAY	1.75	1.86	1.70	1.86	1.70
ORO	1.28	1.27	1.26	1.11	0.96
SHP	1.20	1.22	0.87	0.99	0.95
HELA	1.68	1.51	1.36	1.36	1.46
ENGA	1.42	0.96	1.05	1.22	1.29
WHP	1.00	1.03	0.93	1.00	1.05
JIWAKA	0.84	0.94	0.74	0.83	0.79
CHIMBU	1.24	1.33	0.93	1.06	0.94
EHP	0.76	0.79	0.59	0.68	0.70
MOROBE	0.87	0.89	0.87	0.92	0.80
MADANG	1.02	1.04	1.04	0.86	0.92
EAST SEPIK	0.88	0.95	0.99	1.12	0.97
WEST SEPIK	1.85	1.96	2.22	2.22	2.29
MANUS	1.75	1.95	1.82	1.72	1.78
NEW IRELAND	1.58	1.91	2.15	2.32	2.15
ENBP	1.30	1.52	1.44	1.34	1.30
WNBP	1.56	1.82	1.47	1.59	1.52
ARoB	0.91	0.97	0.77	0.68	0.74
REGION	**2015**	**2016**	**2017**	**2018**	**2019**
SOUTHERN	1.49	1.56	1.35	1.39	1.37
HIGHLANDS	1.12	1.08	0.88	0.98	0.99
MOMASE	1.03	1.08	1.11	1.11	1.06
NGI	1.34	1.55	1.41	1.41	1.37
NATIONAL	**1.20**	**1.24**	**1.12**	**1.17**	**1.14**

Source: National Health information System

Average outpatient visits per person, 2015-2019
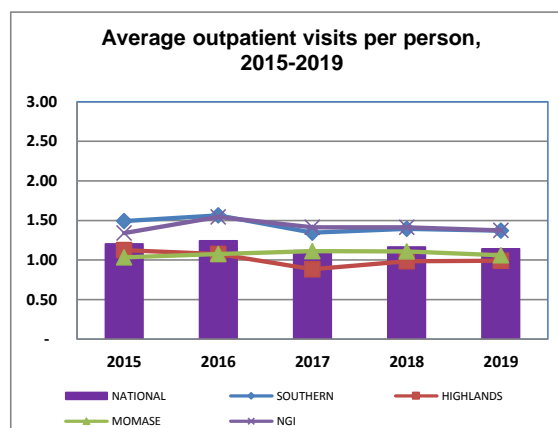
Indicator: This indicator measures the number of hospital and health centre outpatient visits per year. It is assumed that the more accessible the health facility in terms of location, staffing etc, the more likely people will seek to use it. This does not infer that by having more facilities you will increase accessibility. Accessibility may also be influenced by the perception of the quality of services that maybe available and therefore may influence their decision to seek service.

Performance: The average outpatient visit to health facility was stagnant over the five year period. The rate slightly increased in 2016 with 1.24 then declined to 1.12 in 2017. There has also been a reduction in outpatiet visit from 1.17 in 2018 to 1.14 in 2019. West Sepik, New Ireland and Gulf reported the highest rates in 2019. Low rates are indicative of limited access to health services, poor availability and quality of services. For example, lack of trained staff or available commodities for providing appropriate care and treatment for patients. Accessing rural health facilities is also affected by logistical difficulties associated with geographical challenges and subsequent high service costs. Improving health status of the people requires strengthening outpatient service delivery and increasing utilization.

Outpatients visits per person per year, 2029

Legend
Outpatient Visits
0.00 - 0.50
0.51 - 1.00
1.01 - 1.50
>1.50
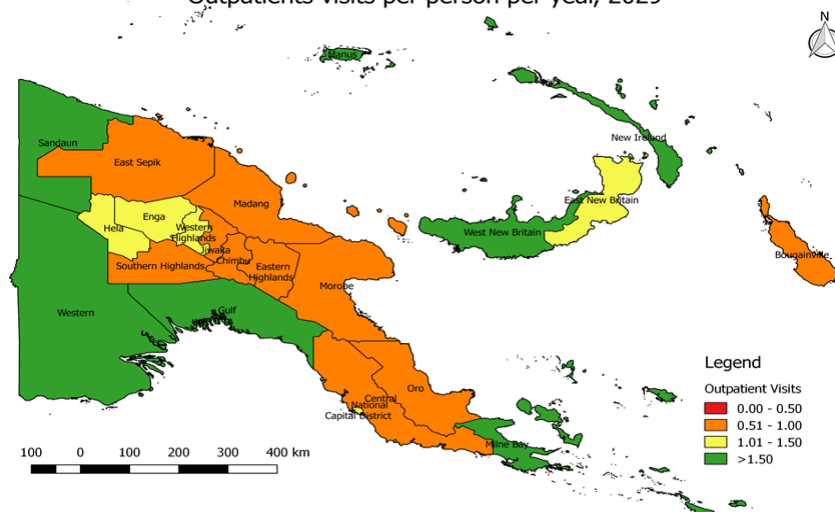
Indicator 22 - Proportion of Aid Posts that are open

Definition: Current definitions of open and closed are not clear, and are likely to be responded to in a variety of ways by different provinces.

Proportion (%) of Aid Posts open

PROVINCE	2018	2019
WESTERN	66%	66%
GULF	74%	74%
CENTRAL	61%	55%
NCD	0%	0%
MILNE BAY	70%	63%
ORO	49%	40%
SHP	52%	54%
HELA	55%	50%
ENGA	44%	44%
WHP	54%	52%
JIWAKA	27%	27%
CHIMBU	93%	86%
EHP	51%	51%
MOROBE	53%	44%
MADANG	64%	45%
EAST SEPIK	0%	0%
WEST SEPIK	52%	54%
MANUS	66%	71%
NEW IRELAND	73%	71%
ENBP	70%	69%
WNBP	84%	82%
ARoB	45%	20%
REGION	**2018**	**2019**
SOUTHERN	51%	60%
HIGHLANDS	65%	52%
MOMASE	56%	32%
NGI	65%	56%
NATIONAL	**58%**	**49%**

Source: National Inventory of Health Facilities

Proportion of Aid Posts that are open
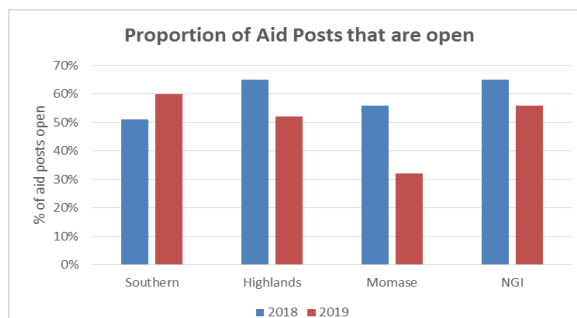
Indicator: Aid posts provide the primary level of health care for most of the population. A functioning aid post brings accessibility of the health care services to local villages, and hence provides an opportunity to improve health and well-being. Aid posts have been described as the backbone of the health system in PNG. Over the past decade, there has been a decline in the operation of aid posts, compromising access to health care for many. The closer of aid posts occurs as a result of system weakness, including personnel recruitment and support, supportive management, and community stability. At least 85% of Aid Posts need to be fully functional to deliver basic health care including mother and child care and community-based health promotion.

Performance: There have been ongoing closures of Aid posts throughout the country over the past decade. Facilities in remote centres are the least accessible that they have been at any time in the past 50 years. During 2019, the percentage of aid posts open was higher in the Southern and NGI regions compared to Highlands and Momase. Chimbu, the exception, however, reported the highest percentage of aid posts open in 2018 with 93% and also in 2019 at 86%, in both years above the national target of 85%. A significant number of aid posts have been closed over the past, generally attributed to shortages in funding, staff and other resources.

Indicator 23: Proportion of outbreaks/urgent events identified and assessed by NDoH within 48 hours of receiving report of event.

Definition: Proportion of outbreaks/urgent events identified and assessed by NDoH within 48 hours of receiving report of event.

No	Syndrome	Cases	Deaths	Location	Province	Assessed in 48 hours
				Public Health Outbreaks/Urgent Events Reported in 2018		
1	Polio	3		Lae, Markham	Morobe	Province,NDoH,WHO
		5	1	Laiagam	Enga	
		6		Goroka Kainantu Hanganofi Okapa	EHP	
		3		Usino Bundi Rai Coast	Madang	
		1		Moresby North East	NCD	
		4		Angoram	ESP	
		2		North Wagi	Jiwaka	
		1		Imbongu	SHP	
		1		Kerema	Gulf	

Year	Total Events	Assessed in 48 hours	% assessed in 48 hours
2014	4	4	100%
2015	9	9	100%
2016	5	4	80%
2017	6	4	67%
2018	26	14	54%

% assessed in 48 hours
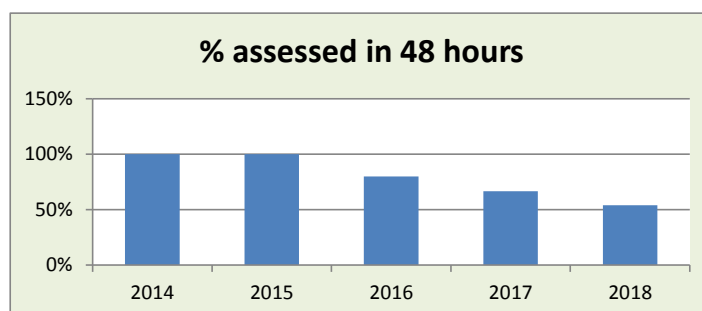
Performance: The cases and deaths reported are based on public health weekly syndromic reporting and case investigation forms and does not represent the institutional deaths or cases in PNG. The timeliness and completeness of reporting is below 60% in PNG due to many factors such as security, geographical and communication difficulties faced in some parts of the country. There has been a continued decline in this indicator over five years which is worrisome.

Source: NDoH Public Health Disease Surveillance Unit
Note: 2019 data not avaialble at the time of reporting.

Indicator 24: Total Budget Allocation (HSIP and GoPNG) per capita

Definition: Total budget allocation (government sources and development partner contribution)

Year	2016	2017	2018	2019
HSIP Budget Allocation, Kmillions	49.9	23.5	**103.2**	105.8
GoPNG Budget Allocation	1472.5	1354.7	1547.3	1609.4
Total	1522.4	1378.2	1650.5	1715.2
Population, millions	8.2	8.4	8.6	8.9
Total Per Capita Budget Allocation in	**186**	**164**	**192**	**193**

Data source:
1. Production by NDoH Health Economics Unit
2. GoPNG Budget Documents DoT, 2016, 2017, 2018 and 2019
3. HSIP Parent Trust Account, 2016-2019 Reports

Analysis: There are two issues of concern here: (a) there is year to year variation in the allocation of budget to the health sector – making it very difficult to plan for service and program needs. (b) the overall budget allocation on a per capita basis has decreased in real terms. This has had a direct result on the ability to provide services – this is seen in declining outreach, less vaccination coverage, and lower antenatal coverage. It only decreased from 2016 to 2017.

Total Health Sector Per Capita Budget Allocation in Nominal Terms (HSIP & GoPNG), 2016-2019
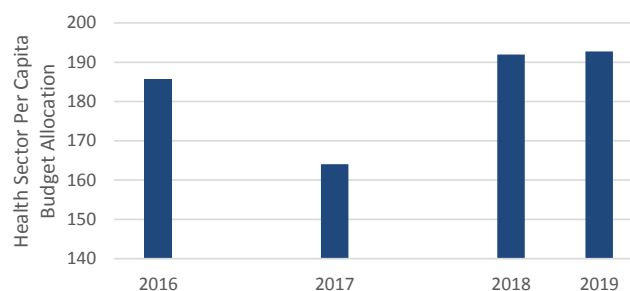
Notes:
1. GoPNG Budget Allocation for Health, includes both GoPNG own budget or resources, plus DPs support that goes through the GoPNG Budget process.
2. HSIP Budget Allocation only includes only those DPs that channelled their funding to the NDoH through the HSIP Parent Trust Account. These funds are already earmarked for certain or specific health projects, and or programs.
3. Thus HSIP budget allocation are no longer Pool Funds, as used to be the case in the past where the NDoH has complete liberty to allocate the funds, based on the health sector's priorities.
4. As per the above Table, Per Capita Budget Allocation which is expressed in nominal terms, is not constant, and or increasing at a steady rate. Instead, it is variable. On the other hand, if it is expressed in real terms, it will clearly show a declining trend.

Indicator 25 - Proportion (%) of health facilities that have running water to delivery room

Definition: Percentage of facilities with running water and sanitation facilities.

Percentage of facilities with running water and sanitation facilities

PROVINCE	2018	2019
WESTERN	48%	47%
GULF	NA	49%
CENTRAL	28%	46%
NCD	100%	100%
MILNE BAY	69%	65%
ORO	24%	35%
SHP	49%	38%
HELA	75%	76%
ENGA	49%	58%
WHP	38%	34%
JIWAKA	47%	53%
CHIMBU	69%	63%
EHP	79%	79%
MOROBE	33%	35%
MADANG	45%	49%
EAST SEPIK	45%	67%
WEST SEPIK	50%	59%
MANUS	31%	31%
NEW IRELAND	44%	46%
ENBP	63%	69%
WNBP	31%	36%
ARoB	41%	43%
REGION	2018	2019
SOUTHERN	44%	48%
HIGHLANDS	58%	58%
MOMASE	42%	47%
NGI	42%	43%
NATIONAL	**48%**	**49%**

Source: National Inventory of Health Facility

NA indicates data not available at the time of reporting.

Percentage of facilities that have running water to delivery room, 2019
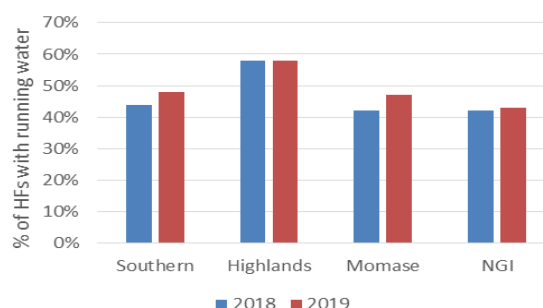
Indicator: This indicator provides a measure of the commitment of provincial and district management to provide a safe and hygienic environment for staff and patients. The provision of water and sanitation at health facilities reduces the environment health hazards for patients and health staff. It also contributes to improved quality of care, adherence to Infection Prevention and Control norms and standards, provides environments respecting the dignity and human rights of all care seekers, reduces overall healthcare costs and health inequities and demonstrates best practices for communities to emulate.

Performance: The percentage of health facilities that had running water to the delivery room was higher in the Highlands region compared to other regions. There has been a slight increase from 48% in 2018 to 49% in 2019. All provinces are below the target and it is fundamental that 95% of health facilities have running water and sanitation facilities. The health consequences of poor water and sanitation are enormous; for example, women who are in labour may walk out of the facility to relieve themselves. WASH services are a critical element to this programme and require greater collaboration with partners like WHO and UNICEF to strengthen this area. Gulf has no inventory data because it has not reported on the health facility Inventory Survey in 2017 and 2018.

Percentage of facilities that have running water to delivery room, 2019
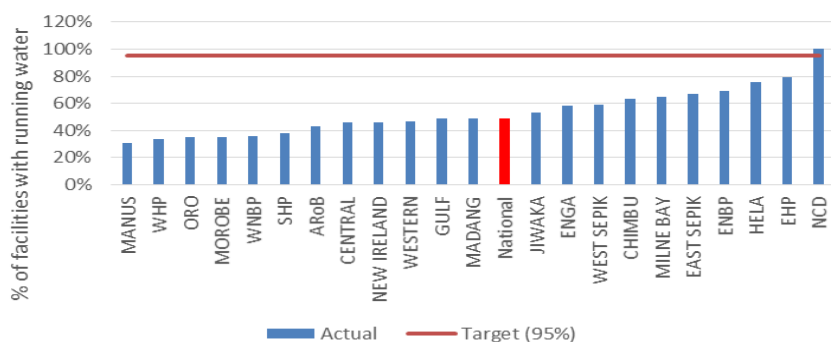
Indicator 26: Facilities with Telephone and/or Radio

Definition: Percentage of health facilities with functioning radio and/or telephone facilities.

Health facilities with functioning radios &/or telephone				
PROVINCE	**2016**	**2017**	**2018**	**2019**
WESTERN	79%	67%	69%	58%
GULF	81%	NA	NA	NA
CENTRAL	33%	37%	25%	35%
NCD	NA	NA	41%	67%
MILNE BAY	73%	45%	40%	44%
ORO	63%	33%	53%	41%
SHP	5%	21%	20%	8%
HELA	17%	11%	14%	17%
ENGA	27%	25%	31%	37%
WHP	100%	39%	67%	63%
JIWAKA	29%	NA	12%	12%
CHIMBU	61%	56%	53%	50%
EHP	58%	55%	52%	50%
MOROBE	56%	44%	63%	63%
MADANG	46%	36%	36%	24%
EAST SEPIK	0%	80%	50%	44%
WEST SEPIK	56%	36%	31%	41%
MANUS	82%	NA	46%	46%
NEW IRELAND	50%	50%	44%	46%
ENBP	57%	32%	33%	38%
WNBP	48%	35%	56%	55%
ARoB	22%	25%	21%	25%
REGION	**2016**	**2017**	**2018**	**2019**
SOUTHERN	64%	41%	43%	48%
HIGHLANDS	44%	36%	39%	40%
MOMASE	53%	30%	46%	45%
NGI	44%	33%	39%	43%
National	**51%**	**35%**	**42%**	**44%**

Source: National Inventory of Health Facilities

NA indicates data not available at the time of reporting.

% health facilities with radios &/or telephone, 2015-2019
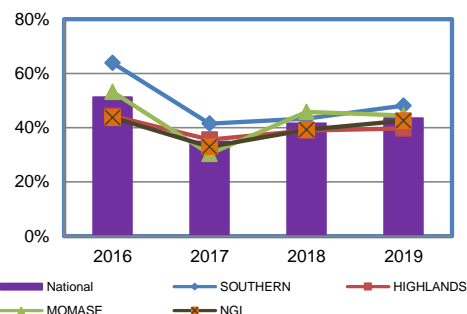
Indicator: The indicator provides one aspect of health system functionality, and underpins a key element of the maternal health and other programs. Radios, and now mobile phones, have been the major mode of communication for clinical consultations, transmission of health information as well as referrals.

Performance: In 2019, 44% of health facilities had either telephone or radio communication. The worst affected provinces in 2019 were Hela, Madang, ARoB, Central and Enga. Interventions such as use of mobile phones which are simple, durable and cost-effective are now becoming an alternative means of communication. However, lack of network coverage remains an issue with the largest issue remaining adequate funding. The ongoing success of communication requires ongoing repair and maintenance.

Facilities with functioning radio and telephone, 2019

Legend
HFs with functioning radio/telephone
0 - 20%
21 - 40%
41 - 60%
>60%
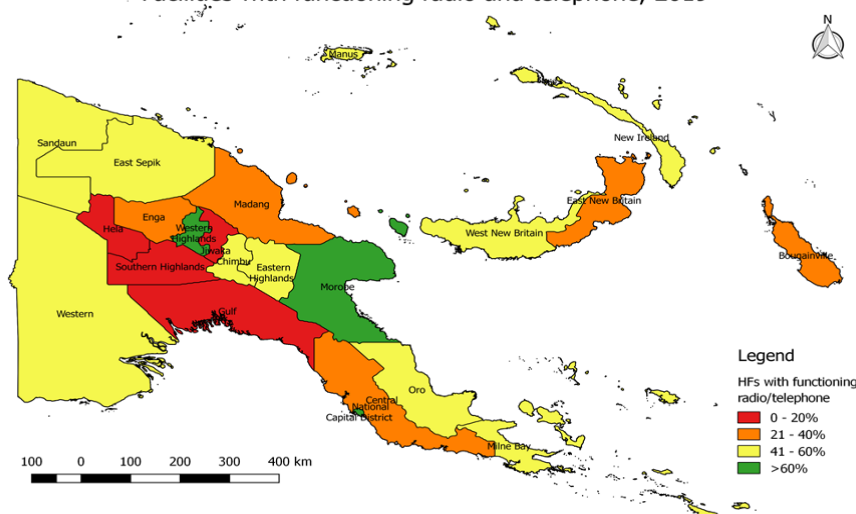
Indicator 27 - Availability of Medical Supplies

Definition: Percentage of months that facilities do not have shortage of any of selected supply list for more than one week in any month

% months with adequate medical supplies in PNG, 2015-2019					
PROVINCE	**2015**	**2016**	**2017**	**2018**	**2019**
WESTERN	76%	72%	60%	69%	71%
GULF	55%	53%	58%	65%	77%
CENTRAL	49%	48%	51%	53%	53%
NCD	65%	67%	64%	62%	84%
MILNE BAY	56%	40%	29%	43%	45%
ORO	38%	39%	37%	40%	40%
SHP	39%	36%	35%	45%	36%
HELA	36%	40%	34%	46%	43%
ENGA	60%	55%	48%	47%	58%
WHP	59%	59%	38%	44%	50%
JIWAKA	30%	41%	34%	40%	52%
CHIMBU	52%	42%	42%	66%	71%
EHP	54%	57%	49%	55%	47%
MOROBE	74%	64%	51%	48%	63%
MADANG	61%	64%	43%	55%	58%
EAST SEPIK	63%	70%	66%	70%	63%
WEST SEPIK	30%	33%	31%	35%	33%
MANUS	70%	65%	70%	60%	44%
NEW IRELAND	51%	43%	43%	57%	55%
ENBP	64%	63%	51%	57%	65%
WNBP	54%	43%	46%	39%	39%
ARoB	54%	54%	32%	37%	34%
REGION	**2015**	**2016**	**2017**	**2018**	**2019**
SOUTHERN	58%	53%	48%	54%	60%
HIGHLANDS	48%	48%	40%	49%	51%
MOMASE	59%	59%	47%	52%	56%
NGI	57%	52%	45%	48%	47%
NATIONAL	**55%**	**52%**	**44%**	**51%**	**53%**

Source: National Health Information System

% months essential medical supplies available
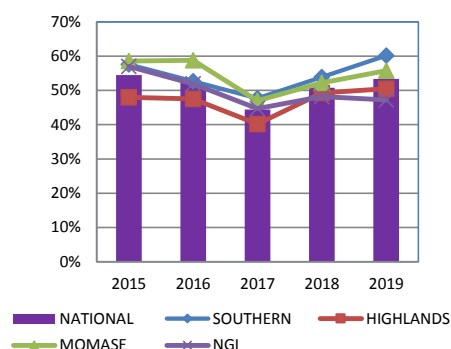
Indicator: This indicator monitors the proportion of months in a year that have stock availability of all of eight essential Medical supplies. The list of key medical supplies has been developed in conjunction with the program managers and include: Depo-Provera injection (Family planning), Ergometrine (Maternal Health), Measles vaccines (Vaccination), Oral Rehydration Solution (Diarrhoeal Disease), oxygen, Amoxicillin (tablets or capsules), Artemisia combination, baby books. Errors in calculations for 2014 and 2015 have been corrected which changes significantly the previously reported trends.

Performance: Access to appropriate treatment and care is heavily dependent upon the availability of key medicines. A regular sustainable supply of essential medicines is required to avoid supply shortages and ensure appropriate treatment. The availability of essential medicines dropped steadily between 2015 and 2017, then increased significantly in 2019, but nationally not reaching the 2015 levels. This will need to be monitored carefully in 2020 to see if the rising trend can be accelerated. Gulf and Chimbu, nonetheless, made impressive progress in this indicator over the period. Finally, there are a number of provinces whose results appear problematic and data quality in these provinces will need to be followed up in 2020.

Availability of medical supplies, 2019

Legend
Availability of medical supplies
- 0 - 20%
- 21 - 40%
- 41 - 60%
- >60%
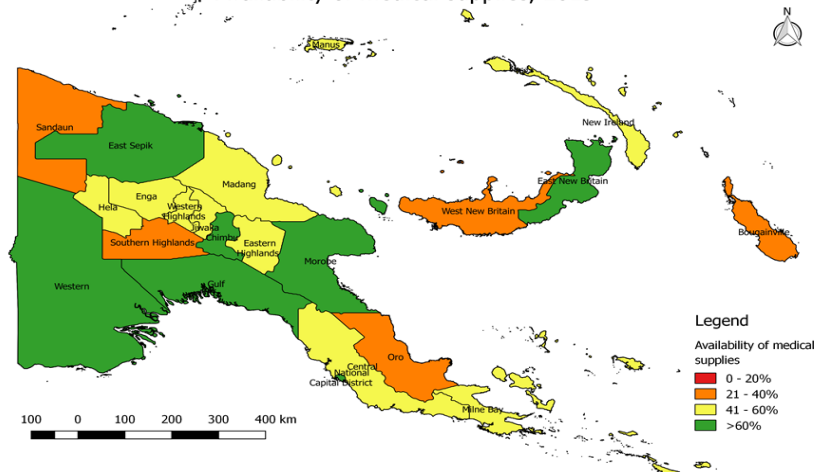
Indicator 28 - Specialist Medical Services
May 31st 2019

Hospital	Int Med	Surgery	O&G	Paeds	Anaesthesia	Number of core specialties covered	Dental	Path	Skin	ENT	Eye	Emerge	Cancer	Imaging	Pyschiatry	Total	%
PMGH*	14	8	6	7	11	5	5	8	3	2	6	7	0	4	4	85	33%
Angau	5	4	4	2	2	5	0	1	o	2	1	3	0	1	2	27	10%
Mt Hagen	2	3	2	3	0	4	0	0	o	1	0	1	0	0	0	12	5%
Nonga	3	3	1	2	2	5	0	0	o	1	1	1	0	0	0	14	5%
Alotau	1	3	1	2	1	5	1	1	o	0	0	0	0	0	0	10	4%
Goroka	4	6	2	3	1	5	0	0	o	1	0	0	0	0	0	17	7%
Kimbe	1	2	1	1	0	4	0	0	o	0	0	0	0	0	0	5	2%
Boram	3	3	2	1	1	5	0	0	o	0	0	0	0	0	0	10	4%
Vanimo	1	1	1	1	0	4	0	0	o	0	0	0	0	0	0	4	2%
Modilon	1	3	2	1	3	5	0	0	o	0	1	2	0	0	0	13	5%
Mendi	1	1	1	1	1	5	0	0	o	0	1	1	0	0	0	7	3%
Tari	1	2	1	1	0	4	0	0	o	0	0	0	0	0	0	5	2%
Wabag	1	2	2	1	0	4	0	0	o	0	0	0	0	0	0	6	2%
Kundiawa	1	4	1	3	1	5	0	0	o	0	0	0	0	0	0	10	4%
Kavieng	0	1	1	1	0	3	0	0	o	0	0	0	0	0	0	3	1%
Buka	1	1	1	1	0	4	0	0	o	1	0	0	0	0	0	5	2%
Lorengau	1	1	0	0	0	2	0	0	o	0	0	0	0	0	0	2	1%
Popondetta	2	1	0	0	0	2	0	0	o	0	0	0	0	0	0	3	1%
Kerema	1	1	1	1	0	4	0	0	o	0	0	0	0	0	0	4	2%
Daru	0	1	1	0	0	2	0	0	o	0	0	0	0	0	0	2	1%
Gerehu	3	2	2	4	0	4	0	0	o	0	0	4	0	0	0	15	6%
Laloki*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1%
Kwikila	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Kudjip	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
TOTAL	47	53	33	36	23		6	10	3	8	10	19	0	5	8	261	100%
%	18%	20%	13%	14%	9%		2%	4%	1%	3%	4%	7%	0%	2%	3%	100%	

*PMGH is a national referral hospital which will have more specialist clinicians. Laloki is a national psychiatric (specialist) hospital which will have psychiatric specialisits.

At least 3 specialists = 78% (18/23)			Less than 3 specialists = 22% (5/23)	
PMGH	Boram	Buka	Lorengau	There were 6 hospitals with less than three of the required 5 specialist clinicians
Angau	Vanimo	Lorengau	Popondetta	
Mt Hagen	Modilon	Popondetta	Daru	
Nonga	Mendi	Gerehu	Kudjip	
Alotau	Wabag	Kerema	Laloki	,
Goroka	Kundiawa		Kwikila	
Kimbe	Kavieng			

Indicator 29: Number of health workers per 10,000 population (stratified by cadre)

Definition: The total number of health workers (doctors, Health Extension Officers, Nurses, Midwives and Community Health Workers) per 10,000 population.

Province	2019 Population	Medical Officers (MO)	Health Extension Officers (HEOs)	Nurses/Mid wives	Community Health Workers (CHW)	Total Health Workforce	Ratio of health workers per 10,000 population
AROB	324,177	10	3	94	71	178	5
Central	309,883	-	13	35	198	246	8
East Sepik	625,355	17	21	158	243	439	7
EHP	701,404	28	15	222	371	636	9
ENBP	366,659	19	23	254	257	553	15
Enga	470,022	21	18	163	226	428	9
Gulf	185,118	6	8	48	88	150	8
Hela	299,857	7	8	52	45	112	4
Jiwaka	334,482	1	8	146	102	257	8
Simbu	372,056	31	9	139	142	321	9
Madang	697,210	22	28	223	390	663	10
Manus	65,613	6	13	64	81	164	25
Milne Bay	339,599	20	29	264	493	806	24
Morobe	903,484	48	11	443	143	645	7
NCD	437,695	244	6	704	282	1,236	28
New Ireland	207,219	16	31	209	192	448	22
Oro	230,432	10	9	80	107	206	9
SHP	633,269	18	10	151	189	368	6
WNBP	338,344	15	52	171	247	485	14
WHP	431,379	22	13	217	293	545	13
West Sepik	308,812	10	19	119	332	480	16
Western	290,069	9	2	19	40	70	2
TOTAL	**8,872,138**	**580**	**349**	**3,975**	**4,532**	**9,436**	**11**

Source: NDoH, Human Resource

Indicator: Measures the total number of health workers (doctors, Health Extension Officers, Nurses, Midwives and Community Health Workers) per 10,000 population by Province.

Performance: This indicator reports health workers in the whole of health sector including public, Church Health Services, Private and NGOs. PNG has a ratio of 11 health professionals (doctors, HEOs, nurses and CHWS) per 10,000 population in 2019.

As per WHO's Global strategy on Human Resources for Health: Workforce 2030, the recommended density is 44.5 health professionals (doctors, Nurses and Midwives) per 10,000 population in acheiving Sustainable Development Goals.

PNG's Human Resource for Health is far below target. The shortage of healthcare professionals especially in rural communities is an on-going issue that poses a serious challenge to equitable healthcare delivery. This is a major concern and requires partnership with non-state actors to improve access to and quality of health services.

Number of health workers per 10, 000 population, 2019

Overall Sector Performance - annual and 5 year change

	Ind #	Indicator	2015 Performance	2016 Performance	2016 % annual Change	2017 Performance	2017 % annual Change	2018 Performance	2018 % annual Change	2019 Performance	2019 % annual Change	2015 - 2019 Overall 5 year change
Outcome	1	Case fatality rate (in HC and Hospitals) for pneumonia in children <5yrs	2.3%	2.0%	13.4%	2.4%	-20.0%	1.9%	20.0%	2.1%	-9.4%	9.1%
Outcome	2	Proportion (%) of underweight children under five years	23.7%	22.1%	6.7%	21.0%	5.0%	20.4%	3.2%	20.6%	-1.0%	13.3%
Outcome	3	Underweight (<2500 gm) births as a proportion (%) of total births	7.0%	7.0%	0.0%	7.0%	0.0%	8.0%	-14.3%	7.4%	7.3%	-6.0%
Outcome	4	Incidence (0/00) of malaria	97	108	-11.9%	109	-1.0%	118	-7.7%	112	4.5%	-16.3%
Outcome	5	Proportion (%) of pregnant 15 – 24 year old women who test HIV positive	1.0%	1.3%	-26.0%	1.2%	1.1%	1.8%	-47.7%	1.8%	3.2%	-78.2%
Outcome	6	Incidence (0/00) of diarrhoeal disease in children under 5 years	284	241	15.0%	205	15.2%	207	-1.1%	182	11.8%	35.7%
Outcome	7	Total injury discharges from health centres and hospitals for every 1000 popn	34	32	6.2%	30	5.2%	32	-6.4%	35	-9.8%	-3.9%
Output	8	Ratio of rural outreach clinics held to children under 5 years;	34	28	-17.9%	28	1.5%	31	10.9%	31	-0.4%	-8.0%
Output	9a	Proportion (%) of children< 1yr who are immunised against measles	39%	35.4%	-9.4%	32.2%	-9.1%	33.3<	3.6%	34.2%	2.9%	-12.2%
Output	9b	Proportion (%) of children < 1yr who are immunised with 3 doses TA/Pentavalent vaccine	47.4%	42.4%	-10.7%	39.4%	-7.1%	40.7%	3.3%	42.1%	3.5%	-11.3%
Output	10	Proportion (%) of births attended by skilled personnel at health facilities;	38.1%	36.2%	-5.0%	34.1%	-6.0%	31.7%	-7.1%	35.8%	13.0%	-6.2%
Output	11	Proportion (%) of pregnant women who attended at least one ANC visit.	53.7%	50.7%	-5.6%	49.2%	-3.0%	47.3%	-3.8%	51.4%	8.7%	-4.2%
Output	12	Family Planning: couple years protection per thousand WRA	108	102	-6.2%	124	22.2%	126	1.1%	135	7.4%	24.5%
Output	16	Case detection rate of all TB cases	84.4%	84.0%	-0.4%	76.9%	-8.5%	78.7%	2.4%	79.9%	-1.5%	5.2%
Output	17	TB treatment success rate	70.0%	74.0%	5.7%	72.0%	-2.7%	73.5%	2.1%	75.8%	3.1%	-8.3%
Process	18	Proportion (%) of funds that are expended.	99.0%	101.9%	2.9%	99.0%	-2.8%	109.5%	10.6%	80.0%	-29.5%	-19.2%
Process	19	Provincial health expenditure as a % of required minimum health expenditure.	65.9%	NA	NA	NA	NA	NA	NA	NA	NA	NA
Process	20	Proportion (%) of health centres that have received at least one supervisory visit	47.9%	55.8%	16.4%	51.7%	-7.3%	52.9%	2.3%	62.0%	17.1%	29.4%
Process	21	Average number of outpatient visits to hospitals and health centres per person per year	1.2	1.2	3.2%	1.1	-9.9%	1.2	4.1%	1.1	-1.9%	-5.1%
Input	24	Total budget allocation (HSIP and GoPNG) per capita	NA	193	NA	186	-3.5%	164	-11.8%	192	17.1%	-0.4%
Input	26	Proportion (%) of health centres/hospitals with functioning radio/telephone/mobile.	NA	51%	NA	34.9%	-31.9%	41.6%	19.1%	43.5%	4.6%	-15.2%
Input	27	% of months that facilities do not have stock-outs of selected supplies.	54.5%	52.2%	-4.2%	44.4%	-14.9%	50.8%	14.4%	53.4%	5.1%	-2.1%
Input	28	Proportion (%) of general hospitals (PMGH and the provincial hospitals) which have at least 3 of the 5 key specialties	65.0%	78.0%	20.0%	78.0%	0.0%	78.0%	0.0%	78.0%	0.0%	16.7%

				2015	2016	2017	2018	2019	2015-2019
	Overall averages: annual and 5 year performance				-0.4%	-3.5%	-0.1%	2.5%	-2.8%
	Average change in outcomes: annual and 5 year performance							1.0%	-6.59%
	Average change in outputs: annual and 5 year performance							4.6%	-2.55%
	Average change in process: annual and 5 year performance							-4.8%	1.68%
	Average change in input: annual and 5 year performance							6.7%	-0.24%

Note for every indicator, a positive change shows an improvement while a negative change shows a decline.

Explanatory notes: eg1: The overall 5 year change for incidence of diarrhoeal diseases in children under five years is 36% this means a positive change. Diarrhoeal diseases has decreased by 36% since 2015.

Explanatory notes: eg2: The overall 5 year change for children <1 year who are immunized against measles is -12% this means a negative change. Measles coverage has declined by 12% since 2015.

NA: Indicates data not available at the time of reporting

Most improved provinces in 2019

Province	Ind 1	Ind 2	Ind 3	Ind 4	Ind 6	Ind 7	Ind 8	Ind 9a	Ind 9b	Ind 10	Ind 11	Ind 12	Ind 20	Ind 21	Ind 26	Ind 27	Overall Improvement
Province	% Change	% Change	% Change	% Change	% Change	% Change	% Change	% Change	% Change	% Change	% Change	% Change	% Change	% Change	% Change	% Change	
Jiwaka	-24.0%	24.7%	39.0%	38.9%	12.8%	5.2%	2.2%	19.2%	23.9%	8.1%	1.3%	3.3%	61.5%	-4.6%	0.0%	31.6%	10
Madang	38.1%	-0.1%	7.8%	-38.3%	1.8%	-17.1%	12.7%	63.3%	7.3%	29.1%	24.0%	83.8%	29.9%	7.7%	0.0%	4.5%	9
Hela	-60.0%	4.4%	-7.0%	32.5%	6.4%	-83.1%	28.2%	25.2%	16.3%	20.6%	28.3%	-15.6%	12.6%	7.6%	0.0%	-6.9%	5
Central	-55.6%	1.8%	7.6%	-4.4%	-2.3%	0.7%	4.9%	6.0%	5.9%	32.9%	10.2%	42.4%	-4.8%	2.3%	0.0%	-0.2%	4
Morobe	3.0%	-15.7%	14.6%	39.2%	18.3%	-28.6%	-37.6%	0.1%	-1.4%	4.0%	-0.8%	23.3%	71.5%	-12.5%	0.0%	31.6%	4
WHP	5.9%	0.0%	-2.8%	34.2%	19.5%	-25.3%	11.3%	21.7%	26.7%	-2.6%	-15.7%	-14.4%	1.2%	4.4%	0.0%	12.3%	3
West Sepik	-145.5%	0.4%	4.5%	-21.7%	10.2%	-0.2%	61.2%	39.6%	4.3%	0.6%	-1.0%	1.5%	-17.0%	3.3%	33.9%	-4.3%	3
EHP	11.8%	0.5%	9.1%	4.3%	-10.6%	-45.2%	0.0%	-23.1%	1.2%	89.0%	13.5%	56.6%	0.0%	3.1%	0.0%	-15.0%	3
NCD	41.4%	-3.3%	-3.0%	-5.8%	7.0%	6.2%	-57.6%	-1.7%	0.9%	2.9%	9.8%	-32.5%	2.4%	0.6%	63.0%	36.0%	3
Chimbu	-37.5%	12.7%	26.4%	-2.5%	19.3%	1.9%	-4.8%	2.7%	6.6%	6.8%	-0.2%	-18.2%	200.0%	-11.1%	0.0%	7.2%	3
New Ireland	83.7%	13.7%	-0.3%	3.9%	2.3%	-11.0%	-22.5%	-3.8%	3.9%	15.2%	-4.6%	17.8%	68.0%	-7.4%	4.5%	-4.0%	3
Enga	-68.8%	1.5%	-59.9%	-1.1%	2.8%	-24.9%	-28.0%	-0.5%	7.6%	22.0%	11.9%	-0.8%	-5.5%	5.3%	17.2%	24.4%	2
Gulf	60.9%	6.1%	0.2%	-80.9%	-18.5%	-31.8%	-74.6%	-0.2%	-2.3%	47.2%	0.8%	16.2%	0.0%	56.5%	0.0%	18.2%	1
Manus	-34.4%	-65.1%	20.9%	8.3%	19.7%	-4.4%	-37.9%	13.1%	-13.2%	-3.7%	11.7%	10.1%	100.2%	3.3%	0.0%	-26.8%	1
Oro	-16.7%	-29.2%	9.5%	-4.4%	40.6%	30.6%	23.5%	2.0%	3.1%	5.0%	-10.6%	-22.2%	11.9%	-13.9%	0.0%	-0.5%	1
SHP	-170.5%	-66.1%	1.1%	29.8%	-5.3%	4.2%	18.3%	-0.4%	13.9%	11.2%	20.7%	16.9%	0.0%	-3.9%	-61.5%	-20.3%	1
ARoB	9.5%	0.0%	-1.6%	-32.9%	35.3%	3.9%	0.1%	-6.3%	-11.6%	-6.9%	-6.4%	3.5%	2.5%	10.1%	0.0%	-7.3%	0
East New Britain	41.5%	6.8%	-0.9%	-23.5%	18.1%	-3.1%	-14.1%	-20.6%	-8.8%	3.1%	3.8%	21.9%	-5.7%	-2.4%	0.0%	14.7%	0
Western	11.8%	-7.8%	18.7%	37.7%	29.3%	3.2%	-55.6%	-34.3%	-26.7%	-9.2%	-9.9%	-14.7%	241.7%	-13.9%	-16.1%	3.2%	-2
East Sepik	-30.4%	-18.8%	-5.7%	24.7%	6.5%	-6.5%	27.6%	24.3%	-9.7%	19.2%	4.2%	-3.6%	21.2%	-13.7%	-11.1%	-9.7%	-2
Milne Bay	-31.3%	1.8%	-8.5%	37.0%	-38.2%	0.6%	-1.2%	24.0%	9.7%	-11.0%	-4.4%	-7.0%	-4.7%	-8.5%	9.2%	5.2%	-3
West New Britain	-148.8%	11.2%	4.0%	-4.6%	40.6%	-12.3%	-26.6%	-36.5%	-17.8%	-17.7%	1.4%	7.7%	-18.7%	-4.1%	-3.0%	1.7%	-6

Method
The performance of each province in 2019 against the selected indicators is assessed against the performance in 2018. if there is improvement (of more than 2% from year to year), the province is assigned a score of one for that indicator. If there is no change, a score of zero is applied, and if performance has decreased (by more than 2%) a score of -1 is applied. These scores are accumulated to provide the basis for ranking the provinces accoding to improvement across the provinces. The performance has been sub-analzed according to the type of indicator - outcome, output, process or input. If a province has improved inputs or processes, but has not improved its outputs or outcomes, then there is a need to consider the managemet approaches taken

Results:
The most improved provinces in 2019 are **Jiwaka, Madang, Hela, Central and Morobe.**

Jiwaka, Western, New Ireland, Morobe and ARoB showed most improved **outcomes**;

Madang, Jiwaka, Hela, Southern Highlands and Central showed mostst improved **outputs**;

Enga, Madang, WHP, Gulf and Central showed most improved **processes**;

NCD, Enga, Milne Bay, Madang and Jiwaka showed most improved i**nputs**.

NATIONAL HEALTH PLAN 2011-2020
2019 SECTOR PERFORMANCE ANNUAL REVIEW

Indicator	Ind 1 CFR		Ind 2 under-weight		Ind 3 LBW		Ind 4 malaria		Ind 6 diarrhoea		Ind 7 injury		Ind 8 outreach		Ind 9a measles vacc		Ind 9b penta vacc		Ind 10 sup birth		Ind 11 ANC		Ind 12 Fam Plan		Ind 20 supervision		Ind 21 OP access		Ind 26 radio/telephone		Ind 27 med supply		overall score	constraint index (new)	Rank New CI
Province	Perf	rel score	Perf	rel score	Perf	rel score	Perf	rel score	Perf	rel score	Perf	rel score	Perf	rel score	Perf	rel score	Perf	rel score	Perf	rel score	Perf	rel score	Perf	rel score	Perf	rel score	Perf	rel score	Perf	rel score	Perf	rel			
NCD	2%	2	9%	10	9%	3	40	3	350	2	41	5	1	0	63%	10	98%	10	112%	10	113%	10	135	5	64%	7	1.06	5	67%	10	84%	10	100	0.36	278
Milne Bay	2%	1	22%	4	12%	2	203	0	83	8	63	3	70	5	65%	10	68%	7	43%	4	59%	5	209	8	93%	10	1.70	7	44%	7	45%	5	87	0.33	264
New Ireland	0%	9	22%	4	7%	5	410	0	123	5	72	3	35	2	44%	7	53%	5	45%	4	57%	5	100	4	63%	7	2.15	9	46%	7	55%	7	83	0.36	229
Morobe	3%	1	30%	3	8%	4	88	1	179	4	29	7	7	0	27%	4	36%	4	28%	3	47%	4	156	6	55%	6	0.80	3	63%	9	63%	8	66	0.31	214
Manus	4%	1	24%	4	10%	3	231	0	114	6	56	3	73	5	65%	10	66%	7	49%	4	64%	6	114	4	77%	8	1.78	8	46%	7	44%	5	81	0.38	214
WHP	1%	3	0%	0	3%	9	17	6	246	3	41	5	78	5	43%	7	60%	6	42%	4	61%	5	196	8	91%	10	1.05	5	63%	9	50%	6	89	0.44	202
Enga	3%	1	20%	5	3%	9	15	7	434	1	38	5	24	2	49%	8	63%	6	26%	2	46%	4	55	2	78%	8	1.29	6	37%	5	58%	7	78	0.39	201
Hela	2%	2	15%	6	5%	6	11	9	458	1	60	3	73	5	64%	10	64%	9	30%	3	51%	4	80	3	69%	7	1.46	6	17%	3	43%	5	81	0.41	196
Jiwaka	3%	1	27%	3	6%	5	15	7	219	3	27	7	30	2	18%	3	26%	3	32%	3	44%	4	145	6	75%	8	0.79	3	12%	2	52%	6	66	0.35	187
Chimbu	1%	3	9%	10	3%	9	14	7	181	3	32	6	149	10	38%	6	49%	5	40%	4	50%	4	123	5	75%	8	0.94	4	50%	7	71%	8	100	0.55	182
SHP	6%	1	30%	3	5%	6	10	10	230	3	27	7	43	3	38%	6	41%	4	18%	2	33%	3	69	3	0%	0	0.95	4	8%	1	36%	4	59	0.33	177
Central	3%	1	21%	4	4%	8	92	1	169	4	22	9	39	3	28%	4	36%	4	28%	2	42%	4	74	3	50%	5	0.96	4	35%	5	53%	6	67	0.38	177
WNBP	0%	6	19%	5	7%	5	274	0	144	4	50	4	20	1	31%	5	42%	4	35%	3	60%	5	109	4	69%	7	1.52	7	55%	8	39%	5	74	0.43	172
EHP	2%	2	20%	4	4%	7	18	6	207	3	22	8	27	2	29%	4	41%	4	36%	3	52%	5	189	7	57%	6	0.70	3	50%	7	47%	6	78	0.49	160
ARoB	2%	2	13%	7	5%	6	50	2	80	8	19	10	31	2	32%	5	40%	4	43%	4	55%	5	63	2	74%	8	0.74	3	25%	4	34%	4	76	0.49	155
ENBP	1%	3	16%	6	7%	4	250	0	128	5	47	4	20	1	36%	6	53%	5	63%	6	69%	6	195	8	56%	6	1.30	6	38%	6	65%	8	79	0.53	149
Oro	5%	1	29%	3	8%	4	231	0	63	10	28	7	29	2	26%	4	34%	4	24%	2	34%	3	123	5	53%	6	0.96	4	41%	6	40%	5	65	0.47	138
Western	3%	1	22%	4	11%	3	90	1	246	3	46	4	7	0	16%	2	17%	2	32%	3	36%	3	173	7	50%	5	1.88	8	58%	9	71%	8	64	0.49	130
West Sepik	5%	1	34%	3	18%	2	419	0	169	4	46	4	34	2	41%	6	32%	3	20%	2	40%	4	193	8	53%	6	2.29	10	41%	6	33%	4	63	0.53	120
East Sepik	3%	1	36%	2	12%	3	131	1	82	8	23	8	10	1	14%	2	15%	2	20%	2	32%	3	94	4	35%	4	0.97	4	44%	7	63%	8	58	0.51	113
Gulf	2%	2	34%	3	8%	4	191	1	261	2	44	4	3	0	19%	3	23%	2	22%	2	39%	3	130	5	14%	2	1.91	8	0%	0	77%	9	50	0.52	96
Madang	1%	2	26%	3	10%	3	187	1	113	6	25	8	18	1	25%	4	24%	2	25%	2	41%	4	189	7	48%	5	0.92	4	24%	4	58%	7	63	0.69	91

Method:
Indicators that can be compared across provinces have been selected. Each province performance for each of the indicators is provided for the year 2019; these are scored from 1 to 10, with the best performance scoring 10, and the relative performance scaled against this. Overall performance is provided by adding up all scores.

Results:
Chimbu, NCD, WHP, Milne Bay and New Ireland are the top performing provinces in 2019, while **Gulf, East Sepik, SHP, Madang** and **West Sepik** are the poor performing provinces.

NCD, Milne Bay, New Ireland, Morobe and Manus rank the highest when the constraint index is applied (this suggests that these provinces would be the top performers when all factors were equal).

Constraint Index:
The constraint index is designed to compensate for disadvantage that a province is subject to. This index has been revised from that previously used, to reflect more current data. The index considers mortality figures, social development and size. Full detail is available through NDoH.

Core Indicators	#1	#2	#3	#4	#6	#7	#8	#9a	#9b	#10	#11	#12	#21	#27
District	Pneumonia CFR	total maln	%LBW	Malaria/ 1000 popn	Inidence Diarrhoea	Injury/ 1000 popn	clinics/1000 ch<5yrs	measles vacc coverage	pentavalent vacc coverage	facility birth rate	%antenatal coverage 1 visit	adjusted CYP/1000WRA	op visits/person	% facility months with nil shortages
MIDDLE FLY	3.4%	28%	9%	40	153	38	3	12%	13%	29%	36%	130	2.23	77%
NORTH FLY	2.5%	21%	11%	194	439	67	18	25%	24%	41%	44%	237	2.21	67%
SOUTH FLY	3.1%	23%	11%	36	147	33	1	9%	16%	25%	27%	154	1.07	67%
Western	3.0%	22%	10%	90	246	46	7	16%	17%	32%	36%	173	1.88	71%
KEREMA	2.2%	39%	8%	247	318	42	2	12%	18%	19%	44%	99	2.13	74%
KIKORI	0.0%	31%	9%	104	172	46	3	31%	30%	26%	30%	180	1.55	78%
Gulf	1.8%	34%	8%	191	261	44	3	19%	23%	22%	39%	130	1.91	77%
ABAU	3.3%	9%	6%	35	68	8	44	27%	31%	19%	37%	145	0.47	60%
GOILALA	1.8%	54%	6%	34	189	22	13	7%	8%	2%	19%	3	0.88	48%
KAIRUKU-HIRI	0.0%	21%	3%	171	232	28	45	33%	39%	31%	51%	72	1.33	55%
RIGO	9.1%	18%	5%	29	128	22	40	36%	55%	53%	45%	58	0.77	46%
Central	2.8%	21%	4%	92	169	22	39	28%	36%	28%	42%	74	0.96	53%
MORESBY NORTH EAST	2.3%	7%	9%	17	334	36	0	64%	104%	291%	135%	186	0.99	86%
MORESBY NORTH WEST	0.5%	8%	0%	83	395	40	0	67%	103%	0%	115%	103	1.19	92%
MORESBY SOUTH	0.0%	14%	0%	18	322	49	3	57%	83%	0%	79%	106	1.03	74%
NCD	1.7%	9%	9%	40	350	41	1	63%	98%	112%	113%	135	1.06	84%
ALOTAU	1.9%	20%	12%	343	92	77	62	52%	65%	59%	70%	273	1.71	46%
SAMARAI-MURUA	1.6%	33%	15%	119	57	58	79	85%	68%	43%	56%	166	1.17	44%
KIRIWINA-GOODENOUGH	2.8%	17%	10%	172	127	51	81	67%	78%	24%	53%	237	2.28	37%
ESAÁLA	1.5%	27%	13%	359	43	56	61	66%	62%	37%	53%	107	1.55	50%
Milne Bay	2.1%	22%	12%	203	83	63	70	65%	68%	43%	59%	209	1.70	45%
IJIVITARI	5.2%	28%	9%	285	49	38	25	29%	38%	39%	41%	81	1.04	42%
SOHE	3.9%	30%	4%	174	76	17	32	23%	31%	9%	25%	168	0.86	36%
ORO	4.9%	29%	8%	231	63	28	29	26%	34%	24%	34%	123	0.96	40%
National	2.1%	21%	7%	112	219	35	31	34%	42%	36%	51%	135	1.14	53%

Colour Key		Below National Avg			Above National Avg			Above 100%			National Avg Score		
	NA	No data available at the time of data extraction/analysis												

Indicator Type	Outcome						Output						Process	Input
Core Indicators	#1	#2	#3	#4	#6	#7	#8	#9a	#9b	#10	#11	#12	#21	#27
District	Pneumonia CFR	total maln	%LBW	Malaria/1000 popn	Inidence Diarrhoea	Injury/1000 popn	clinics/1000 ch<5yrs	measles vacc coverage	pentavalent vacc coverage	facility birth rate	%antenatal coverage 1 visit	adjusted CYP/1000WRA	op visits/person	% facility months with nil shortages
IALIBU-PANGIA	6.5%	31%	2%	12	125	15	35	27%	33%	15%	31%	92	1.50	35%
IMBONGGU	20.0%	16%	2%	10	154	22	48	36%	29%	6%	22%	38	0.90	38%
KAGUA-ERAVE	3.6%	31%	1%	3	139	9	56	30%	53%	10%	33%	61	0.44	50%
MENDI	4.6%	27%	8%	13	244	43	28	37%	39%	30%	38%	85	0.82	37%
NIPA-KUTUBU	1.7%	48%	3%	10	354	27	52	48%	47%	16%	36%	67	1.01	29%
SHP	6.0%	30%	5%	10	230	27	43	38%	41%	18%	33%	69	0.95	36%
KOMO-MAGARIMA	0.2%	23%	1%	20	560	15	91	79%	73%	26%	64%	71	1.84	39%
KOROBA-LAKE KOPIAGO	3.1%	10%	4%	8	218	22	65	63%	63%	19%	30%	39	1.03	47%
TARI-PORI	2.1%	15%	8%	4	659	9	60	45%	52%	50%	62%	143	1.60	41%
Hela	1.6%	15%	5%	11	458	43	73	64%	64%	30%	51%	80	1.46	43%
KANDEP	0.0%	24%	0%	3	235	23	16	51%	59%	4%	24%	4	0.59	67%
KOMPIAN-AMBUN	1.8%	34%	6%	29	400	51	51	100%	103%	30%	52%	122	1.72	66%
LAIGAP-PORGERA	2.2%	16%	5%	24	532	34	14	33%	60%	18%	56%	42	1.09	57%
WABAG	3.5%	11%	2%	7	471	26	17	40%	53%	59%	47%	67	1.49	46%
WAPENAMANDA	2.9%	9%	2%	7	434	62	30	45%	50%	19%	41%	56	1.67	49%
Enga	2.7%	20%	3%	15	434	38	24	49%	63%	26%	46%	55	1.29	58%
DEI	1.4%	0%	1%	6	115	17	59	37%	41%	12%	26%	82	0.52	52%
HAGEN	1.0%	0%	4%	26	397	51	92	50%	83%	94%	102%	366	1.16	55%
MUL-BAIYER	0.0%	0%	2%	25	230	68	70	55%	52%	15%	42%	158	1.45	46%
TAMBUL-NEBILYER	6.5%	0%	5%	4	152	23	80	26%	50%	16%	47%	80	0.95	47%
WHP	1.1%	0%	3%	17	246	41	78	43%	60%	42%	61%	196	1.05	50%
National	2.1%	21%	7%	112	219	35	31	34%	42%	36%	51%	135	1.14	53%

Colour Key		Below National Avg		Above National Avg		Above 100%		National Avg Score
	NA	No data available at the time of data extraction/analysis						

Indicator Type	Outcome						Output						Process	Input
Core Indicators	#1	#2	#3	#4	#6	#7	#8	#9a	#9b	#10	#11	#12	#21	#27
District	Pneumonia CFR	total maln	%LBW	Malaria/ 1000 popn	Inidence Diarrhoea	Injury/ 1000 popn	clinics/1000 ch<5yrs	measles vacc coverage	pentavalent vacc coverage	facility birth rate	%antenatal coverage 1 visit	adjusted CYP/1000WRA	op visits/person	% facility months with nil shortages
ANGALIMP-SOUTH WAHGI	2.0%	21%	6%	12	185	29	31	19%	31%	56%	42%	127	0.73	54%
JIMI	9.9%	46%	1%	18	209	30	16	10%	7%	7%	36%	241	1.14	38%
NORTH WAHGI	0.0%	33%	3%	18	367	23	37	21%	34%	12%	53%	109	0.67	66%
Jiwaka	3.1%	27%	6%	15	236	27	30	18%	26%	32%	44%	145	0.79	52%
CHUAVE	0.5%	23%	4%	9	133	32	192	19%	36%	26%	58%	69	1.16	49%
GUMINE	0.8%	3%	0%	6	108	33	58	41%	62%	19%	41%	40	0.84	46%
KARIMUI-NOMANE	1.0%	14%	0%	16	143	33	94	38%	32%	8%	27%	26	0.76	70%
KEROWAGI	0.5%	22%	2%	20	171	34	201	51%	55%	40%	67%	56	0.90	75%
KUNDIAWA-GEMBOGL	2.5%	7%	5%	18	353	37	149	40%	61%	95%	63%	383	1.14	83%
SINASINA-YONGGOMUGL	0.0%	3%	0%	7	77	20	160	35%	43%	12%	27%	44	0.81	85%
Chimbu	1.1%	9%	3%	14	181	32	149	38%	49%	40%	50%	123	0.94	71%
DAULO	2.3%	9%	1%	12	166	21	56	47%	41%	25%	50%	99	0.91	56%
GOROKA	1.9%	16%	6%	7	327	65	18	39%	70%	112%	108%	541	1.19	96%
HENGANOFI	2.5%	15%	6%	8	125	13	38	19%	29%	20%	40%	84	0.43	40%
KAINANTU	0.0%	29%	2%	4	79	6	18	16%	23%	36%	46%	148	0.22	19%
LUFA	0.0%	16%	1%	4	52	7	41	35%	42%	10%	32%	83	0.29	52%
OBURA-WONENARA	1.2%	30%	3%	55	499	53	35	54%	69%	38%	111%	235	1.70	48%
OKAPA	1.9%	44%	3%	61	431	10	2	16%	18%	8%	25%	90	1.02	27%
UNGGAI-BENA	0.0%	27%	3%	10	64	13	40	33%	60%	3%	14%	112	0.39	21%
EHP	1.4%	20%	4%	18	207	22	27	29%	41%	36%	52%	189	0.70	47%
BULOLO	9.1%	23%	6%	30	213	24	2	16%	27%	15%	64%	173	0.68	58%
FINSCHAFEN	4.4%	22%	13%	48	60	24	10	19%	22%	18%	31%	130	0.61	63%
HUON	1.1%	34%	15%	101	110	22	1	40%	41%	2%	49%	214	0.68	50%
KABWUM	4.2%	58%	3%	15	46	17	4	9%	13%	7%	22%	67	0.47	63%
LAE	0.0%	22%	8%	640	424	64	4	43%	68%	87%	64%	175	1.64	82%
MARKHAM	2.1%	55%	5%	64	88	14	7	27%	37%	18%	40%	240	0.54	67%
MENYAMYA	3.1%	55%	5%	10	120	16	14	20%	13%	6%	42%	95	0.41	47%
NAWAE	0.0%	20%	3%	51	80	21	22	26%	41%	16%	42%	128	0.58	60%
National	2.1%	21%	7%	112	219	35	31	34%	42%	36%	51%	135	1.14	53%
Colour Key		Below National Avg			Above National Avg			Above 100%			National Avg Score			
	NA	No data available at the time of data extraction/analysis												

Indicator Type	Outcome						Output						Process	Input
Core Indicators	#1	#2	#3	#4	#6	#7	#8	#9a	#9b	#10	#11	#12	#21	#27
District	Pneumonia CFR	total maln	%LBW	Malaria/ 1000 popn	Inidence Diarrhoea	Injury/ 1000 popn	clinics/1000 ch<5yrs	measles vacc coverage	pentavalent vacc coverage	facility birth rate	%antenatal coverage 1 visit	adjusted CYP/1000WRA	op visits/person	% facility months with nil shortages
TEWAE-SIASSI	3.5%	41%	8%	74	214	18	12	29%	27%	12%	34%	135	0.64	56%
Morobe	3.2%	30%	8%	88	189	29	7	27%	36%	28%	47%	156	0.80	63%
BOGIA	2.2%	21%	6%	218	95	24	20	33%	21%	8%	35%	277	1.00	59%
MADANG	1.7%	30%	11%	282	191	38	26	34%	42%	54%	68%	287	1.11	72%
MIDDLE-RAMU	1.1%	30%	5%	112	62	14	6	10%	5%	6%	24%	32	0.68	45%
RAI COAST	1.7%	31%	7%	151	71	14	13	17%	17%	8%	26%	81	0.78	70%
SUMKAR	0.8%	27%	14%	93	50	13	13	25%	22%	24%	32%	193	0.56	58%
USINO-BUNDI	0.0%	16%	5%	234	180	43	24	28%	26%	25%	44%	225	1.48	43%
Madang	1.3%	26%	10%	187	113	25	18	25%	24%	25%	41%	189	0.92	58%
AMBUNTI-DREKIKIR	1.0%	66%	0%	178	81	18	21	7%	5%	4%	26%	67	0.95	54%
ANGORAM	10.9%	45%	9%	71	120	17	1	11%	9%	11%	27%	28	1.02	57%
MAPRIK	7.3%	27%	8%	149	98	33	7	10%	13%	24%	40%	226	1.51	48%
WEWAK	7.7%	36%	16%	121	73	34	9	20%	28%	52%	39%	161	0.73	87%
WOSERA-GAWI	0.5%	21%	7%	273	57	18	10	18%	7%	14%	39%	21	1.07	62%
YANGORU-SAUSSIA	0.0%	22%	11%	19	52	18	12	21%	27%	13%	25%	44	0.56	75%
ESP	2.9%	36%	12%	131	82	23	10	14%	15%	20%	32%	94	0.97	63%
AITAPE-LUMI	6.9%	25%	15%	425	77	38	35	41%	37%	19%	38%	168	2.24	24%
NUKU	2.9%	30%	16%	253	111	32	13	54%	20%	14%	42%	209	2.35	45%
TELEFOMIN	5.8%	11%	4%	63	158	31	31	20%	27%	7%	24%	108	1.64	21%
VANIMO-GREEN RIVER	4.9%	51%	23%	785	325	75	53	42%	40%	34%	51%	263	2.73	36%
WSP	5.4%	34%	18%	419	169	46	34	41%	32%	20%	40%	193	2.29	33%
LORENGAU	4.3%	24%	10%	231	122	56	73	65%	66%	49%	64%	114	1.78	44%
Manus	4.3%	24%	10%	231	122	56	73	65%	66%	49%	64%	114	1.78	44%
KAVIENG	0.0%	23%	8%	225	83	48	14	40%	46%	42%	49%	85	1.39	66%
National	2.1%	21%	7%	112	219	35	31	34%	42%	36%	51%	135	1.14	53%

Colour Key		Below National Avg		Above National Avg		Above 100%		National Avg Score
	NA	No data available at the time of data extraction/analysis						

Appendix 4

Indicator Type	Outcome						Output						Process	Input
Core Indicators	#1	#2	#3	#4	#6	#7	#8	#9a	#9b	#10	#11	#12	#21	#27
District	Pneumonia CFR	total maln	%LBW	Malaria/ 1000 popn	Inidence Diarrhoea	Injury/ 1000 popn	clinics/1000 ch<5yrs	measles vacc coverage	pentavalent vacc coverage	facility birth rate	%antenatal coverage 1 visit	adjusted CYP/1000WRA	op visits/person	% facility months with nil shortages
NAMATANAI	0.4%	21%	5%	571	161	92	54	48%	60%	47%	63%	112	2.81	46%
NIP	0.3%	22%	7%	410	125	72	35	44%	53%	45%	57%	100	2.15	55%
GAZELLE	0.8%	16%	7%	156	110	32	12	29%	43%	36%	61%	62	1.04	62%
KOKOPO	0.8%	19%	6%	296	125	49	28	44%	66%	82%	76%	141	1.33	80%
POMIO	0.3%	20%	7%	340	128	44	28	41%	51%	42%	73%	124	1.67	58%
RABAUL	12.2%	7%	11%	334	124	108	20	32%	56%	162%	78%	873	1.61	93%
ENBP	1.1%	16%	8%	250	117	47	20	36%	53%	63%	69%	195	1.30	65%
KANDRIAN-GLOUCESTER	1.9%	38%	4%	252	71	32	12	14%	13%	19%	45%	41	1.28	25%
TALASEA	0.0%	17%	7%	280	170	57	23	38%	54%	41%	65%	138	1.60	50%
WNBP	0.5%	19%	7%	274	142	50	20	31%	42%	35%	60%	109	1.52	39%
CENTRAL BOUGAINVILLE	1.4%	9%	4%	63	93	18	32	37%	45%	54%	67%	90	0.68	26%
NORTH BOUGANIVILLE	1.7%	11%	6%	75	92	24	27	30%	41%	41%	51%	71	0.87	32%
SOUTH BOUGAINVILLE	2.2%	21%	6%	11	58	13	37	28%	36%	38%	53%	35	0.63	39%
ARoB	1.9%	13%	5%	50	80	19	31	32%	40%	43%	55%	63	0.74	34%
National	2.1%	21%	7%	112	219	35	31	34%	42%	36%	51%	135	1.14	53%

Colour Key		Below National Avg		Above National Avg		Above 100%		National Avg Score
	NA	No data available at the time of data extraction/analysis						