Health in Papua New Guinea: a stocktake

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The economic wellbeing of a nation is in large part reflected by the health of its people. Health care therefore is a community responsibility. This paper provides a stocktake of the current status of the health of the PNG population. The statistics, though questionable on quality, suggest that there has been a general deterioration in the level of health status in the country. One reason for such a trend is the decline in resources allocated on a per capita basis to health—another reason is the low level of productivity of resources devoted to the sector. The challenge, and one taken up as part of ongoing research, is to find ways to raise the productivity of resources devoted to health.

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Papua New Guinea is classified by the World Bank as a middle-income developing country, but its social indicators of development are more akin to those of the low-income countries of Africa (Chand and Stewart 1997). Life expectancy in Papua New Guinea at 52 years (1990) and literacy rates at 45 per cent (1990) are poor by developing country standards, and particularly disappointing in relation to its per capita income (Table 4). Maternal mortality at 930 per 100,000 live births is one of the highest in the world, infant mortality at 82 per 1,000 births (1991) is particularly alarming in that it has *worsened* from 72 per 1,000 births in 1980. Papua New Guinea is one of the few countries where women have lower life spans than men.

Variation in the above statistics between the two sexes and across regions is high; for example, infant mortality in the Gulf province of 111 per 1,000 births (figure for 1991, the most recent available) is almost three times the figure of 40 for Manus and 41 for the National Capital District. The average Papua New Guinea woman in her lifetime faces a one in 17 chance of dying from pregnancy and childbirth complications: the comparable figure for the industrialised world is one in 1,500 (UNICEF 1996).

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These trends may be considerably worse since lack of data and underreporting are serious problems. The data produced by the Health Information and Statistics unit of the National Department of Health represents only those persons who attended clinics or were admitted as in-patients at health centres and hospitals. The National Department of Health estimates that available data on mortality covers only 10 per cent of the total number of deaths. Reporting rates by health institutions vary by 50 to 70 per cent from year to year. A national health survey, conducted with technical support under joint funding from AusAID, the Asian Development Bank, and the World Bank, is due to release data late in 1997. To date, this is the most comprehensive data collection exercise—involving surveys of 5,000 households over the entire country—undertaken in Papua New Guinea. Access to this data should provide more definitive measures on the status of health in the country.

Challenges for the future include the stalling and then reversal of the deteriorating trends. Infectious and parasitic diseases, including malaria, dominate the morbidity and mortality picture. Lifestyle diseases, such as heart and pulmonary conditions and diabetes, are on the rise. Population growth at 2.3 per cent per annum in a climate of fiscal consolidation, often translating into a reduction in budgetary outlays per capita, is placing increasing demands on productivity improvements to stall the deteriorating trends. The rough terrain of Papua New Guinea together with the wide spatial dispersion of the population, entails higher costs than would otherwise be incurred in the delivery of public services including health. Meeting the above challenges will require significant changes in the structure, focus, and financing of health services. The last constitutes the broad research agenda, and this articles makes a start by providing a survey of the current status and some thoughts on possible remedies.

The status of health in Papua New Guinea

Any statistic on social indicators of development for Papua New Guinea is likely to be of dubious quality, that is, in terms of both accuracy and what it represents. Accepting this fact, often the bias in the reported statistic is in favour of an improved number. Furthermore, the average figures mask the wide variability across geographic regions and gender. Infant mortality statistics provide an example (Table 1). The infant mortality rate is used as an outcome-based, all-encompassing measure of the effectiveness of health delivery. This is akin to using life expectancy for similar purposes, except that the latter is not available on a regional basis. There is no *a priori* reason to believe that similar or even greater variability does not exist within the provinces.

Ten of the provinces experienced an increase in the infant mortality rate over the 1980–91 period. The country as a whole saw infant mortality rise by ten for every 100,000 live births over the decade. Anecdotal evidence from a field survey in Papua New Guinea suggests that conditions have worsened in the last five years. Data on North Solomons province is not available, but given the prolonged shutdown of services there, the health status of people living on Bougainville must be worse than a decade ago. The variability between the sexes is also alarming—the infant mortality rate for males for the nation as a whole was 88 per 1,000 live births while for females it was 77 per 1,000 live births. At the provincial level, the largest difference was in East Sepik

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Table 1 **Papua New Guinea infant mortality rates, by province, 1980 and 1991**

	Mortality (per 1,000 live births)	
	1980	1991
Western	83	62
Gulf	71	111
Central	59	51
National Capital District	35	41
Milne Bay	50	70
Northern	67	63
Southern Highlands	116	110
Enga	81	109
Western Highlands	81	76
Chimbu	87	75
Eastern Highlands	55	100
Morobe	62	99
Madang	62	81
East Sepik	94	87
West Sepik	104	97
Manus	55	40
New Ireland	62	70
East New Britain	57	58
West New Britain	60	62
Papua New Guinea	72	82

Source: United Nations Children's Fund, 1996. *Children, Women and Families in Papua New Guinea: a situation analysis*, Port Moresby:73, Table 4.2.1.

where the infant mortality rate for males was 106 per 1,000 while that for females was 109 per 1,000 (1991). But despite the longer life expectancies that females generally have at birth relative to males, the 1990 census by the Department of Health shows that males have a life expectancy of 52.2 years relative to that of females of 51.4 years (Department of Health 1996:8). There is a large variability in conditions of health both across the regions and between sexes and there is evidence in support of the claim that the health of the community has on average worsened. What can explain these disturbing trends?

A Department of Health survey covering the period 1990 to 1994 revealed that the ten leading causes of admission to health facilities included pneumonia, malaria, accidents and violence, skin diseases, diarrhoea, other respiratory conditions, perinatal conditions, typhoid and anaemia. Between the end points of the survey period, the causes of death remained almost static with more than

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Table 2 **Ten leading causes of mortality in Papua New Guinea, 1990 and 1994** (per cent)

	1990	1994
Pneumonia	20	22
Perinatal conditions	11	13
Malaria	9	10
Meningitis	7	6
Tuberculosis	5	4
Heart and pulmonary condition	5	5
Cancer	4	3
Diarrhoea and intestinal infection	4	3
Anaemia	3	4
Others	29	27

Source: Papua New Guinea, Department of Health, 1996. *National Health Plan 1996–2000*, Port Moresby:Table 2.3.

half of the ten leading causes of death being communicable diseases (Table 2).

The above causes of death cannot be treated as independent of one another. For example, anaemia is a result of nutritional deficiencies; and such deficiencies increase the susceptibility to infectious diseases. Lieberman and Heywood (1995) report that Papua New Guinea's nutritional status is amongst the worst in the Pacific region.

The nutritional status of mothers is most important. Research in Solomon Islands shows a close link between the nutritional status of mothers and that of their children (Saadah, Heywood and Morris 1995). The National Department of Health reports that perinatal conditions are probably the most important cause of death, but that the statistics fail to reveal this due to the lack of recording of these deaths which take place in villages.

The causes of death suggest that there is significant potential for lowering mortality through provision of basic care and sanitation. Further light can be thrown on this issue by considering fatality rates, defined as the proportion of patients who die from the disease in comparison to those who have the disease. Fatality rates for non-curable diseases such as AIDS are expected to be high, however if fatality rates are higher than expected for curable diseases then this suggests a failure of the health system (Table 3). Benchmarks for comparison from countries of similar characteristics are not available but the National Department of Health reports that the figures in Table 3 comparatively are high.

The fatality rates are probably much higher than reported for two important reasons. First, patients who are thought to be certain to die are sent home to die and second, people who are very ill may not have the means nor the incentive to seek medical assistance because of the perceived inevitability of death. There is evidence in support of the claim that the health of the PNG population is deteriorating but significant potential exists to reverse this disturbing trend.

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Resource allocation to and within the health sector

The administration of health services in Papua New Guinea is complex and made worse by the recent constitutional reforms of the Organic Law which attempted to decentralise administration and control to provincial and local governments, A subsequent 'back-flip' on this decision only worsened the situation. The new Organic Law, implemented in 1996, returned control of all public service employees to the National Government. Under the new system the National Department of Health is responsible for setting policies, setting standards for health services, and monitoring of such services for the entire country. The administration of these duties is undertaken by the provincial and local governments in concert with the National Department of Health. The provincial governments have legislative powers over rural health and are responsible for health facilities, health programs, hygiene, access to clean water, safe environment and rubbish disposal. Local-level governments, in contrast, have jurisdiction over hygiene and sanitation, aid posts and clinics. The strategic interactions involved over resource allocation across the functions and jurisdictions are complex; changes in the existing system followed by reversals of such decisions make administration even more difficult and probably unmanageable, at least in the short term.

Non-government organisations have been active in the health and education sectors in the country. Churches have had a long history of being active in the provision of health care, and as of 1996 ran one provincial hospital and accounted for 26 per cent of health centres and 64 per cent of health sub-centres. A more recent trend has been the participation of large companies in the provision of health services, mostly those engaged in the

Table 3 **Fatality rates for the ten most prevalent causes of death in Papua New Guinea, 1990–94**

	Number of deaths	Number of admissions	Case fatality rate (per cent)
Septicaemia	731	2352	31
Tetanus	49	170	29
Heart disease	1283	4689	27
Cerebro vascular condition	166	787	21
Meningitis	1554	9666	16
Perinatal conditions	3115	30066	10
Cancer	996	11106	9
Hepatitis	13	182	7
Tuberculosis	1387	21226	7
Pigbel	53	862	6

Source: Papua New Guinea, Department of Health, 1996. *National Health Plan 1996–2000*, Port Moresby: Table 2.4.

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natural resource sector, in the provision of health services. Such participation is indicative of the failure of the public system to deliver services to the population.

Private provision of health care in Papua New Guinea is undeveloped, with the lack of demand for such services probably the main reason for this deficiency. It is evident from the above that at least some of the variability in health statistics is a direct consequence of the differentials in resource allocation both across functions and regions. This raises the question of whether existing resources can be reshuffled to raise the efficiency of resources currently devoted to the health sector.

Optimising resource allocation within health expenditures

Visualise a resource allocation matrix. The rows of this matrix constitute the functional responsibilities of the health care system. For example, curative and preventative care and the individual components of each form of health care constitute the rows of this matrix. The geographic divisions which may be relevant form the columns of the matrix. Let the national objective be to reduce variability in the quality of health care given across the country and to improve the average figure for the nation as a whole. The strategy to achieve this objective is unambiguous. Resources in this allocation matrix should be divided so as to equalise the marginal returns from additional kina allocated to any one cell (The assumption of diminishing returns to expenditure is made, but this is realistic).

Another complementary strategy for improving expenditure allocations would be to use international benchmarks from similar countries who have done well in health delivery. Obvious examples include Fiji and Indonesia (Irian Jaya province of Indonesia would be the best comparator, but data is not as yet available for this region). This strategy gives some crude calculations below. Finally, the question of whether more resources can and should be spent on health needs consideration. Even in the current climate of fiscal consolidation, there may be room to 'reshuffle' public outlays to raise national welfare. The last is beyond the purview of this paper.

The issue is not in raising budgetary outlays as much as raising the effectiveness of existing resources devoted to the sector. International benchmarks on expenditure within each sector can be helpful in revealing areas for re-prioritising in terms of resource allocations.

Budget constraints, particularly in light of the current restructuring of the PNG economy, are unlikely to release significantly more resources to the health sector. This is despite the second phase of the World Bank and IMF-sponsored structural adjustment program emphasising infrastructure development, the social component of which would entail investment in health and education (Chand 1996). It may be possible, however, for delivery of basic health to be improved without significant budgetary implications —through re-allocation of expenditure within the sector and by raising the productivity of use of existing resources. As a measure of existing productivity of resource use in health and education sectors, the public cost of delivering education and medical care in Fiji and Papua New Guinea is compared (Table 4). This gives a crude indication of the cost effectiveness of the two sectors. Fiji is used as a benchmark due to its similarity in a number of respects to Papua New Guinea and the fact that Fiji has fared well in terms of delivery of health and education to its population. Budgetary allocation for health and education, amounting to 25 per cent of total public expenditure (1994), compares favourably with neighbouring Fiji (28 per cent) and Indonesia (11 per cent) (Table 4).

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Table 4 **Comparative data for Papua New Guinea and two neighbouring developing countries**

	Papua New Guinea	Fiji	Indonesia
Life expectancy, 1993 (yrs)[a]	52	72	66
Literacy rate (per cent)[b]	45	92	84
GDP per capita, 1990 ($US)[c]	860	1780	570
Budgetary outlays for education (per cent of total public expenditure)[d]	17	18	9
Budgetary outlays for health (per cent of total public expenditure)	7	10	2

Notes: [abc] Figures for Fiji are for 1994, from South Pacific Economic and Social Database, National Centre for Development Studies, The Australian National University, Canberra; [b] Data is for 1995 from ADB 1996 *Key Indicators of Development of Asian and Pacific Countries*, ADB, Manila: Table 7; [d] For Fiji this data is for social services inclusive of outlays for health.

In terms of cost, per capita expenditure on health in Papua New Guinea is much lower than in Fiji, hence the health sector has some scope for increased budgetary outlays (Table 5). But such outlays would have to be prioritised depending on rates of return between the sub-sectors within health. An optimal mix would entail equalisation of the social rate of return from the marginal kina spent in any one subsector. The resource allocation matrix provides one means of achieving this goal.

Policy challenges for the short to medium term

Meeting public service requirements of a growing population will remain a serious challenge for the medium to long term. The demographic profile is heavily skewed in favour of the young with only 2.4 per cent of the total population being over 60 years while some 42 per cent of the population is under 15 years. The current population is estimated at 4.2 million—with the current growth rate of 2.3 per cent the population will double in 30 years. Though the growth of the population is dependent on a number of factors including the rate of economic growth, the demands on public services for the next decade can be predicted with certainty for the existing population. Demands on health and education by the growing number of people who will continue to move up the age groups will rise. Hence, policymakers will need to factor in the dynamics of the shifts in the demographic distribution in addition to the high population growth rate in their plans for public goods provision for the future.

It is most unlikely that the share of government expenditure to health will rise significantly. If the PNG government is serious about improving the social status of the population, productivity of existing resources in the health sector will have to be relied upon more than on gains from further budgetary outlays. The source of better health care will thus largely have to come from improvements in productivity in the sector. Such improvements can be attained by providing clear incentives to all agents to deliver to their potential. The market, via privatisation and out-sourcing

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Table 5 **Comparative education and health statistics for Fiji and Papua New Guinea**

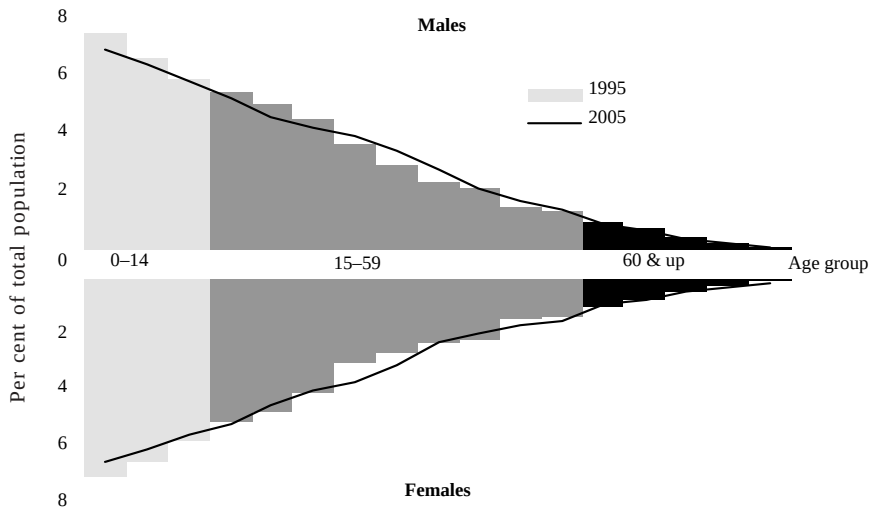
	Papua New Guinea	Fiji
Primary school enrolment rate, 1990 figures (per cent)[a]	71	100
Proportion of school-age population in school (per cent) [b]	34	78
Per capita public expenditure on health (US$/annum)[d]	26	45

Note: [a] This is the proportion of children in the 5–15 age group enrolled in school; [b] This is the proportion of the 5–19 year age group in either primary or secondary school, Papua New Guinea figures are for 1990 while Fiji figures are for 1992; [d] For Fiji, data for social services inclusive of health is used. [e] Most recent data used, for Fiji this is for 1992 while for Papua New Guinea it is 1994. The figure for primary and secondary enrolments only for Papua New Guinea is UDS 380.

of some of the functions currently undertaken in-house by a capacity-constrained public sector, are options that have to be considered.

So far the discussion has been from a supply perspective; with the focus on increasing the quantity of services provided. Demand factors can have an equally important role. Provision of employment opportunities and cash income will create the demand for better health care. The private sector will engage in the health sector should there be sufficient excess demand. Access to financial instruments such as health insurance will give nationals access to facilities abroad. On the

Figure 1 **Demographic profile: Papua New Guinea**



Source: Asia Pacific Economics Group, 1997. *Asia Pacific Profiles*, FT Newsletters and Management Reports, Hong Kong.

policy front, the development of such markets should be encouraged. Naturally, the bulk of the population will be denied such sophisticated services for some time yet. A two-tier system with the public sector catering for basic care to the bulk of the population with the private sector catering for the more sophisticated services is a strategy the government should consider.

Mixing public and private delivery of health services

Delivery of basic health care is a community responsibility, though the provision of such care does not have to be a public monopoly. Both the private and public sectors have a role in the delivery of health services. The public sector has an overall responsibility for planning and funding of basic care to the entire population. Additional responsibilities of the public sector include the gathering and distribution of information for monitoring programs and fostering a partnership between the community, the funding agencies, and health care providers in achieving a better health care system. Attention to the poor and aged, with special consideration of the needs of women and children, will raise the effectiveness of the marginal resources devoted to health care. Optimal use of resources in health can only be made by striking a balance in resource use between preventative, promotive, curative, and rehabilitative care.

The deteriorating state of health in Papua New Guinea is disturbing, but on the positive side much can be done to improve the health status of the population. This paper provides a stocktake with some pointers for further investigation.

The statistics reveal huge variability in social status of the population across provinces. This variability could be even higher within provinces since the statistics for the inter-provincial comparisons are drawn from publicly funded health facilities. Such funding from a central source imposes some constraints on comparability across regions but these forces are absent between regions within the provinces. *A priori*, one would expect provinces that are less monetised with more dispersed population in difficult areas to access to be worse off than those with the opposite attributes. Cash (liquidity) is important in that it not only gives access to health facilities but also enables the purchase of drugs.

The policy options suggested are basically those pertaining to resource reallocation to raise efficiency. Significant increases to budget outlays on health in the near future are unlikely; hence gains in the sector are possible only through raising efficiency of existing resources. But the argument for raising efficiency within the health sector by reshuffling expenditure within the sub-sectors applies equally to the broader aggregates as between health and other government services. Complementarities between health and other sectors—education in particular—need to be explored and taken advantage of in the design of fresh strategies for the social sector. Social services can be delivered by the private sector—only the public-good component has to be funded from the budget. Consideration therefore needs to be given to engaging non-government organisations and the private sector in raising efficiency and enabling access to basic care by the population at large.

There remain concerns about the poor social statistics for Papua New Guinea, and there are queries on the accuracy of those which are available—many argue that the picture is worse than that painted by the published data. Concerns over the need to see improvements in the social

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status of the population in Papua New Guinea are not going to evaporate quickly and without concerted effort. Work on raising the wellbeing of the population is going to be a long haul. But a start must be made.

Note

The data used in this survey is from Papua New Guinea National Department of Health (1996) unless otherwise stated.

References

Chand, S., 1996. 'Papua New Guinea: from stabilisation to growth', *Pacific Economic Bulletin* 11(2):1–13.

—— and Duncan, R., 1997. 'Papua New Guinea', in Asia Pacific Economic Group, *Asia Pacific Profiles*, FT Newsletters and Management Reports, Hong Kong.

Chand, S. and Stewart, R., 1997. 'Economic reforms and structural change: progress, performance, and prospects' *Pacific Economic Bulletin* 12(1):53–69.

Papua New Guinea, National Department of Health, 1996. *National Health Plan 1996–2000*, Port Moresby.

Lieberman, S. and Heywood, P., 1995. 'Health services: a review and remedial strategy', *Pacific Economic Bulletin* 10(1):84–94

Saadah, F., Heywood P. and Morris, I., 1995. *Health in Solomon Islands*, South Pacific Working Paper 95/7, Economics Division Working Papers, National Centre for Development Studies, The Australian National University, Canberra.

United Nations Children's Fund, 1996. Children, women, and families in Papua New Guinea: a situation analysis, Port Moresby.

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