

Phase 4 Report on 2011 Activities



THE UNIVERSITY
OF QUEENSLAND

Acronyms List

ABS	Australian Bureau of Statistics	ITU	International Telecommunications Union
ADB	Asian Development Bank	JICA	Japanese International Cooperation Agency
AIHW	Australian Institute of Health and Welfare	NCD	Non-Communicable Disease/s
AusAID	Australian Agency for International Development	NORAD	Norwegian Agency for Development
BAG	Brisbane Accord Group	PacMISC	Pacific Malaria Initiative Support Centre
CDC	Centers for Disease Control (USA)	PHAA	Public Health Association of Australia
CHIP	Child Health Indicator Project	PHIN	Pacific Health Information Network
CoD	Cause-of-Death	PICTs	Pacific Island Countries and Territories
DFID		PIHOA	Pacific Island Health Officers Association
DoHA	Department of Health and Ageing	PMA	Pasifika Medical Association
ESCAP	Economic and Social Commission for Asia and the Pacific	PSHON	Pacific Senior Health Officials Network
FNU	Fiji National University	QUT	Queensland University of Technology
GF	Global Fund	SEARO	South-East Asia Regional Office, WHO
GIZ	German International Development Agency	SEAMEO	TropMed South-East Asian Ministers of Education Tropical Medicine and Public Health Network
HIMAA	Health Information Management Association of Australia	SPC	Secretariat of the Pacific Community
HIS	Health Information System	SPH	School of Population Health
HMN	Health Metrics Network	UNFPA	United Nations Population Fund
HRH	Human Resources for Health	UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
ICT	Information and communications technology	UNICEF	United Nations Children's Fund
IDRC	International Development research centre (Canada)	UNSW	University of New South Wales
IFHIMA	International Federation of Health Information Management Associations	UQ	University of Queensland
INDEPTH	International Network for the Demographic Evaluation of Populations and Their Health in Developing Countries	USAID	U.S. Agency for International Development (USAID),
		WHO	World Health Organization
		WPRO	Western Pacific Region Office, WHO

1 Summary

The Health Information Systems (HIS) Knowledge Hub continued to expand the evidence-base about the best methods for improving HIS to strengthen country health systems in developing countries in the Asia Pacific region. In 2011, the HIS Hub made a number of key achievements including the:

- Development of a Resource Kit to strengthen the practice and systems in civil registration and vital statistics. The publication, a collaboration between experts in civil registration, vital statistics, and public health is a valuable resource for countries to strengthen their resources.
- Development and implementation of a Regional Health Information Systems Strategic Plan 2012-2017. The plan is a culmination of work undertaken by the Hub over the past two years and was successfully launched at the HIS workshop and endorsed by the Pacific Health Ministers and PHIN Members.
- Development and implementation of the Pacific Vital Statistics Improvement Plan, a collaboration with 10 key development agencies (BAG). The overarching aim of the plan is to assist Pacific countries to understand the critical importance of vital statistics on birth, death, and causes of death and thereby to improve their availability, accuracy and use.
- Increasing the capacity of various countries to utilize existing data sets for decision making
- Providing a range of capacity development opportunities through fellowships, short courses and self directed learning tools.
- Improved communications strategies.

The HIS Knowledge Hub worked in partnership with global and regional organisations to facilitate development and integration of health information systems knowledge within Australia and the Asia Pacific region.

The purpose of this report is to provide feedback on the key achievements and outcomes of the 2011 work plan to meet the HIS Knowledge Hub's reporting and compliance requirements. The annual report focusses on the achievements of the 2011 work plan (Phase 4) in relation to the overarching objectives of the Knowledge Hub's, predominantly product development. The report summaries the key implementation activities, challenges and lessons learnt.

2 Background

The HIS Hub was established in 2008, and the work plan for that year focused on infrastructure and staffing recruitment. Based on this foundation, the 2009 work plan progressed into both **consolidating** and **synthesising knowledge** on the state of HIS in the Asia Pacific region and **creating knowledge** on improving the utility, utilization, cost effectiveness and sustainability of HIS. The work plan for 2010 continued to build on the momentum gained during 2009, with a more comprehensive focus on working in-country with partners to advance health information **capacity**. The work program subsequently had a stronger focus on capacity **development and training**, including a strategic focus on supporting the **Pacific Health Information Network (PHIN)** as a regional capacity of education, training and development.

In 2011 the work plan focused on ensuring the important principles of **aid effectiveness** and the Compact Agreement for Pacific Countries – namely country leadership, mutual accountability and

responsibility, and harmonisation of activities. Activities undertaken in 2011 ensured that products were purposefully extended and built-upon to ensure that key **knowledge gaps**, capacity and **dissemination** were effectively addressed. Important **collaborations** with leading academic institutions, and activities convened by the HIS Hub with global networks and agencies such as the Health Metrics Network, WHO, UN Family and INDEPTH, were also enhanced to ensure that the Hub's products were academically rigorous, innovative and relevant. These collaborations attest to the significant **convening power** of the Hub as demonstrated through its many partnerships both outside of the Asia Pacific region, as well as within it.

There is an increasing demand from donors, governments and communities for health systems to accurately account for resources (transparency and accountability) and to demonstrate improvements in the health of populations (results-based and performance-based). Senior health decision-makers require timely, accurate and up-to-date information if they are to make evidence-based policy and investment decisions to address issues that impact on health systems. An effective HIS is the foundation of a well-functioning health system and is a key component in improving health outcomes. Yet, health information systems in Asia and the Pacific are often described as 'data-rich but information-poor'.

Throughout the last four years, the HIS Hub has actively engaged with countries, regional networks and development partners to synthesise greater knowledge about what is happening within the region. Such engagement has also provided opportunities to develop communities of practice and disseminate existing tools and approaches to HIS development and strengthening, and develop or modify tools, practice guidelines and resources to support countries and health staff and managers make better decisions about HIS management and investments. A key goal of this has been to assist countries to better utilize data generated from HIS to improve the quality, effectiveness and efficiency of health systems, and to address major health problems within countries, such those linked to the Millennium Development Goals (MDGs) and the emerging issues of non-communicable diseases (NCDs).

The AusAID Independent Progress Report of the Knowledge Hub Initiative made several recommendations about strengthening communication, dissemination and policy and practice translation outcomes. Particular recommendations were made about the quality of various modes of communication and "policy tools" as well as specific recommendations for each of the Hubs. The HIS Hub has paid particular attention to these throughout 2011, with increased professional support to knowledge dissemination and translation aspects of its work, based upon a Communication Strategy. This experience has informed the increased attention to communication, dissemination and knowledge translation in this work plan.

3 Aim and Objectives of the Hubs

The overall aim of the Knowledge Hubs for Health Initiative is to contribute to the quality and effectiveness of Australia's engagement in the health sector in the Asia Pacific Region through expanded expertise and an expanded knowledge-base that is of practical value and used by stakeholders in development. The Knowledge Hub achieves this aim through four key objectives:

1. To increase the **critical, conceptual and strategic analysis of key health issues** relevant to the Asia Pacific region that can be used to inform policy thinking and practical application at the national, regional and international levels
2. To **expand convening powers and engagement** between Knowledge Hubs, Australian institutions and Asia Pacific national, regional and international researchers, development partners and educational institutes
3. To **effectively disseminate relevant and useful knowledge resources** which aim to influence policy thinking and practical application at national, regional and international levels
4. To **expand HIS capacity** of Australian institutions and professionals and through them to Asia Pacific institutions and professionals to participate effectively in evidence informed decision making.

4 Overview of Products

The 2011 work plan consisted of four key consolidated products from investments over the past three years (Phase 1, 2 and 3). The products were purposefully extended and built upon to ensure that key knowledge gaps, capacity and dissemination were effectively addressed. Each of the HIS Knowledge Hub products were built upon the key guiding objectives. The products focused on during 2011 were:

Products	Description
I	Essential HIS investments for health service management
II	Strengthening and expanding the HIS workforce
III	Strengthening vital statistics and cause-of-death data
IV	Health information systems strengthening and maternal and child health

5 Key Achievements

Phase 4 continued the development and consolidation of already targeted investments. The key achievements, critical findings, lessons learnt and challenges are outlined below, organised against the four guiding objectives.

a. Objective 1: Increasing the critical, conceptual and strategic analysis of key HIS issues

The contribution of critical and conceptual health information analysis deliverables has been a key component of the 2011 work plan. The HIS Knowledge Hub has targeted Objective 1 through three of its four products.

Product I: Essential HIS investments for health service management

In 2009 the Hub hosted two key events on HIS in the Pacific: a meeting of PHIN and a Pacific HIS Development Forum. Both events were designed to synthesise greater knowledge about HIS within the region, and provide an opportunity to discuss common issues and challenges. The global agenda and drivers of HIS were discussed to provide a clearer understanding of how Pacific Island Countries and Territories are positioned within the larger international agenda. The two meetings also provided the opportunity for participants to put forward suggestions for future action. From the information gaps and cross-cutting issues identified, a number of working papers were developed to provide in-depth analyses of information systems in the region. Following the dissemination of these initial papers, members of the TAG and several senior health policy managers in the Pacific raised a pivotal issue: in light of these issues and challenges, how can decision-makers be assisted in deciding how best to invest their limited resources for improving their HIS to enable better management and effectiveness of their health system? This question has guided the development of a program of work under Theme 1 to expand the evidence-base and produce guidelines for decision-makers on 'best buys' in HIS, and advocacy tools for HIS managers about the essential nature of HIS investments. Activities (including literature reviews, informal discussions and consultative meetings) were carried out during 2010 to understand the information needs of Ministries and Ministers of Health. A key information gap identified was the need for guidance on what health information technologies warrant investment and the circumstances in which these are best applied.

Building on the findings from the last three years, Phase 4 focused on the key information needs of senior health decision makers and aims to answer the question: "on which aspect(s) of the health information system should I, the senior health decision maker, invest the limited resources I have available to more effectively and efficiently manage my health system?".

Our analysis indicates that senior decision makers are;

- Held accountable to a wide range of information demands.
- These varied and complex information demands are in part due to the varied and complex political, social and economic circumstances in which senior decision makers' work.
- The information needs of senior decision makers: namely that they are varied in terms of scope, level and timeframe and are unique compared with other stakeholders in health due to three distinguishing features: one, their need for information from outside the health sector; two, their need for information at a variety of levels within the health system; and three, their need for information that is both backward and forward-looking.

Furthermore, our analysis showed that health system-specific frameworks revealed their limitations in defining the information needs of senior decision makers in health, due to the restricted nature of such frameworks, which define health system goals and objectives in a very static manner, and at a relatively high level of abstraction. In reality, as argued, the information needs of senior decision makers are more likely to reflect a more fluid set of objectives which are shaped by the immediate political, social and economic circumstances of the country in question.

A specific area raised by senior decisions makers in health, development partners and by HIS managers is the role of ICTs in HIS. There is a large and growing body of work exploring health ICT issues in the developed world, and some specifically focusing on the developing country context emerging from Africa and India; but not for the Pacific Region. Health systems in the Pacific, while diverse in many ways, are also faced with many common problems including competing demands in the face of limited resources, staff numbers, staff capacity and infrastructure. Senior health managers in the region are commonly asked to commit money, effort and scarce manpower to supporting new

technologies on proposals from donor agencies or commercial companies, as well as from senior staff within their system. The decisions they must make are

1. Is the investment both plausible and reasonable;
2. How the investment should be made.

Our work focussed on:

1. What are the potential opportunities and benefits of ICT in assisting health information systems?
2. Why do health ICT technology investments succeed or fail?
3. Can a common 'language' for categorising and discussing Health Information Systems in the Pacific be developed?
4. What tools, models and frameworks are available to evaluate ICT in health?

We found that the key issues that have emerged in the implementation of ICT in the region:

- Telecommunications infrastructure remains a major limiting factor in the success of many ICT initiatives in the Pacific (and developing countries in general).
- It is vital that aspects such as electricity systems, phone lines and internet connectivity are taken into consideration before implementing any new technology.
- Human capacity and training are fundamental aspects of any ICT initiative.
- The affordability of the technology (and use of it) must also be assessed in terms of initial and ongoing costs such as licence fees, maintenance and support costs.
- Any ICT initiative that is heavily reliant on external funding is unlikely to be sustainable over the long term.
- The exceptionally high cost of many telecommunications services in the Pacific remain a significant limiting factor to their use.
- There are also important hidden costs associated with technology, including maintenance, upgrades and replacing broken equipment, which need to be assessed.
- Judgements must be made on the appropriateness of the technology itself.
- The tropical climate of the Pacific region is damaging to equipment, such as computer hard-drives that require climate-controlled and dust-free environments.
- Appropriateness also refers to the anticipated benefits of the technology in comparison to its costs.

While ICT initiatives have the potential to support health information systems, any project or new policy must have an appreciation of the context and challenges of the implementation environment. These factors are highlighted in the numerous evaluation tools, methodologies and frameworks available on the appropriate and effective use of ICT in health. Overall, maturity models are a potentially effective tool that senior managers in health could use to assist them in making decisions on whether to invest in information and communications technology.

Product III: Strengthening vital statistics and cause-of-death data

This Product aimed to assist countries to improve the timely collection, quality and dissemination of birth and death information as one of the critical cornerstones of health information required for policy and planning. The HIS Knowledge Hub continued to build on the key activities already commenced by testing and refining the created knowledge.

The HIS Knowledge Hub collaborated with Fiji National University (FNU), World Health Organization (WHO), Ministry of Tonga and Secretariat of the Pacific Community (SPC) to oversee the application of the Hub's products and to develop new tools and guidelines. These collaborations included the rollover of product outputs from 2010 (see Working Paper 21 and Documentation Note 15).

Training on "the use of existing data sets" was conducted in Fiji in October, 2011. The workshop was adapted from similar training conducted in Samoa in 2010. The training aimed to develop the ability of public health officials to critically assess the quality of data they collect and utilise, and to learn how to

compute indicators for use as evidence for health policy.

In many countries, existing health data sources are under-utilised to inform health decision-making. Improving the capacity of public health officials to assess, analyse and interpret existing data is a primary means for overcoming this issue. One data source with much potential to inform health policy is the Demographic and Health Surveys (DHS). The DHS, which has been conducted in over 90 countries, collects data in a standardized fashion that can produce a range of key indicators for health policy, including health outcomes, health service utilisation, environmental factors, and demographic and socio-economic factors. The DHS also allows for comparison of indicators over time within a country, as well as comparison of indicators between countries. A major advantage of the DHS is that the data sets are freely available for analysis. The DHS therefore provides much potential for harnessing existing skills of public health officials and researchers to assess, analyse and interpret its wealth of data. The collection and availability of public health data has increased in recent years in many countries. Greater demand from governments and donors for evidence to inform decision-making for the planning, management and evaluation of health services has led to the provision of such data from numerous sources. These data sources provide information on a wide range of indicators covering health status, health system performance and risk factors and other determinants of health. Despite these advancements, many low- and middle-income countries have been described as “data-rich” but “information-poor”. Large reporting burdens are regularly placed on health officials that can adversely affect data quality. Many health officials also have a lack of understanding about how to assess, analyse and interpret data to provide valuable evidence for policy-makers. There is a need for such public health staff at various levels of the health system to develop skills and knowledge to better utilise existing datasets.

Our work has developed simple tools for use in Stata® software, to compute these indicators and analyse them according to geographic, socio-economic and other factors. Such tools can be adjusted to suit the type of information the analyst wishes to derive from the data. Improving the use of DHS data in setting where health where data from other sources is lacking will strengthen the evidence base for health policy. In addition we have developed a set of guidelines to aid public health officials to understand and critically assess the quality of available data, and effectively utilise these data to provide evidence for health policy. It is designed to ensure that data users follow a set of principles when analysing any dataset so as to derive maximum utility and information content to guide policy. The guidelines are designed for staff involved in the collection of data and production of information as part of their ongoing functions, and with a basic understanding of statistics. These guidelines were originally developed for a training workshop conducted for public health officials in Samoa, entitled ‘Training in the Use of Existing Datasets’. They have since been refined based on this workshop, to provide a basis for application in other Pacific countries. Training materials to support their implementation have also been developed and are detailed in HISHub products.

At the initiative of the Hub, a Pacific Vital Statistics Action Plan was developed with key partners (SPC, FNU, WHO, UNFPA, UNICEF, ABS, PHIN, UNSW HRH Hub and QUT) and launched to assist Pacific countries to understand the critical importance of vital statistics on births, deaths and CoDs to thereby improve availability, accuracy and use of data. The first round of assessment visits have been undertaken in 2011. The approach of having a Brisbane Accord group (the partners aforementioned) is being keenly watched by the Asian and African regions, WHO and HMN as a possible way of having regional approaches that are in accord with the Aid effectiveness agenda of country led country owner and harmonized. (More detail in objective 2)

A capacity building tool for doctors was developed to strengthen death certification (see Capacity Building Tool “guidelines for doctors on cause-of-death certification”). The guidelines were designed to be a readily accessible resource that doctors can consult rapidly and easily when completing death

certificates.

Product IV: Health information systems strengthening and maternal and child health

The overall aim of this product is to improve maternal and child health (MCH) in the Asia Pacific region through the development of sustainable, useful and reliable MCH and increasing understanding of key indicators such as MDG 5 (see Technical Summary “making sense of maternal mortality estimates”) . An outcome from the 2010 work plan Pacific Child Health Indicator Project (CHIP) reviewed the health information systems and clinical services in Samoa and Tonga to find functional health indicators that reflected the health issues established by a consensus of Pacific clinicians (see Technical Summary “CHIP: information for action”). The review identified the need and opportunities for a sector wide approach to address some of the key conditions.

Lessons and challenges

1. Senior decision makers’ information needs cannot be met solely by data that come from within the health sector. They need to be able to look ‘over the fence’ to see what challenges and opportunities might exist elsewhere in society and/or might be emerging in health or other sectors. These information needs cannot be completely met by the aggregation of data from lower levels of the health system nor entirely by data which are retrospective (or based on forecasts/extrapolations from historic or current data). They need to be able to look ‘over the horizon’ in terms of forthcoming threats and opportunities affecting the health sector.
2. Areas of further concern to HIS managers and decision makers in LMIC remain regarding appropriate investments in health financial information and related systems and appropriate indicators, analysis and structures for HIS measurement of equity.
3. Areas while there has been limited rigorous quantitative analysis of the benefits from specific ICT investments in the developed world there has been even less for the developing world. There has been a significant level of published literature over recent years around such things as:
 - Use of mobile phone technology for disease surveillance
 - Low cost technologies for clinical video case conferencing
 - Open source technology for the development of routine health information systems and the use of technologies such as hand held PDAs to improve the efficiency and timeliness of systems.

A well designed Proof of Concept of the role of these technologies for HIS (especially the rapidly growing area of mHealth) needs to be undertaken – using elements described in the maturity model, and with rigour that will assist decision makers focus on scaling up, if found appropriate.

4. Common failure factors for health ICT projects include:
 - Lack of senior management sponsorship
 - Lack of engagement of clinicians and other end users
 - Inadequate specification of requirements
 - Insufficient time and resources allocated to organisational and process change
 - Inadequate understanding of the complexity health domain by IT companies
 - Under-investment in human resource capacity-
5. Many low-and middle-income countries have extensive public health data, however such information is commonly under-utilized as evidence to support health policy-makers plan, manage and evaluate health services.
6. The most successful method of increasing the critical, conceptual and strategic analysis of HIS knowledge was through direct country participation. This was well demonstrated through all seven of the HIS Knowledge Hub products. By engaging countries and organisations to undertake

specific tasks and take ownership of the process the Hub was able to increase knowledge and achieve outcomes.

b. Objective 2: Expand convening powers and engagement

Throughout 2011 the HIS Knowledge Hub was committed to ensuring that its work program and knowledge generation activities continued to be strategically aligned with other partners and agencies working in similar areas. The Hub collaborated with key organisations on the development, piloting and implementation of products and activities.

The HIS Knowledge Hub launched its strategic work programs on a strong foundation of existing relationships and strategic alliances. These important relationships with a range of domestic and international partners are a continuation of the significant investments the Hub has made since it was launched in 2008. During 2011, the HIS Knowledge Hub invested into sustaining existing relationships with partners including:

- ABS
- AIHW
- AusAID, Canberra, regional and country based staff
- DoHA
- ESCAP
- FNU
- HIMA
- Health Metrics Network
- IFHIMA
- INDEPTH
- QUT
- UNFPA
- UNICEF
- SEAMEO-TROPED Network
- SPC
- Pacific Ministries of Health
- WHO - Geneva, WPRO, SEARO, Suva and Vanuatu.

In 2011, the HIS Hub participated in and co-sponsored the Asia Pacific HIS leadership forum (<http://hisforum.org/>) with the Western Pacific Regional Office (WPRO) of the World Health Organization (WHO), U.S. Agency for International Development (USAID), the Philippines Department of Health, CDC, IDRC, ADB, HMN, SPC, ESCAP, NorAD, World Bank, DfID, Rockefeller, JICA, ITU, GIZ hosted the **Asia Pacific Leadership Forum on Health Information Systems (HIS)**, from June 13-16 in Manila, Philippines. Country teams from Bangladesh, Cambodia, Fiji, India, Indonesia, Laos, Mongolia, Philippines, Thailand, and Vietnam participated in the event. The primary objective of the forum was to bring multi-ministerial teams together to develop action plans to implement a country-led process to strengthen national Health Information Systems. The forum built on ongoing PEPFAR II and Global Health Initiative (GHI) efforts to strengthen national institutions and to accelerate this process through multisectoral advocacy and coordination to improve the policy environment and strengthen national institutions to use quality, timely, accessible health data to improve the delivery of health services. In this forum, the HIS Hub has been nominated to play a lead role in identifying HIS competencies and training programmes to develop these competencies and career paths, building upon our work to date.

Product II: Strengthening and expanding the HIS workforce

A vital coordination mechanism for HIS support and capacity development in the Pacific is The Pacific Health Information Network (PHIN). It was established at the Health Metrics Network (HMN) meeting in Noumea in 2006. PHIN was created to provide a mechanism for networking, support, information sharing and training for people working as health information professionals in the region. PHIN is not a registered organisation, but has a strong affiliation with the Health Information Management Association of Australia (HIMAA). The PHIN Secretariat is currently located at the Health Information Systems (HIS) Knowledge Hub, based at the University of Queensland, Brisbane, Australia. The current President of PHIN is Mr Sione Hufanga from the Ministry of Health in Tonga; he has been in this position since 2009. Membership of PHIN is currently open to all Pacific Island Countries and Territories. Members are able to attend PHIN meetings, participate in discussions and decision-making events, and advocate for health information at important events within their country. Membership is free and is reviewed annually. PHIN members are encouraged to recommend other colleagues in the region to join the Network to broaden and strengthen its effectiveness. As of August 2011, there are currently 42 PHIN members from 16 different Pacific Island Countries and Territories.

PHIN aims to support health outcomes and health systems through the strengthening of health information. To achieve this PHIN has a number of specific target outcomes across the region including:

- To support the integration of health information systems (HIS), and to ensure that cost-effective, timely, reliable and relevant information is available, and used, to better inform health development policies
- To provide a capacity building mechanism for networking, support, information sharing and training for people working as health information professionals
- To promote health information systems in the broader health system strengthening agenda.

Its vision is for Health in Pacific Island Countries and Territories is enhanced through better use of quality and timely information; and its mission that Professionals working in health information systems in Pacific Island Countries and Territories shall promote and use reliable, complete and timely information for decision-making and for achieving greater health outcomes. Additionally the role of the new HIS Leadership forum in convening and coordinating HIS capacity development, although yet to be tested beyond the work to date, is one in which the HIS Hub will be actively involved and supportive, with clearly identified and assigned roles as lead technical agency in some areas.

The key achievements in this area have been:

- The HIS Knowledge Hub in collaboration with the PHIN, WHO Western Pacific Regional Office (WPRO) and FNU hosted the HIS workshop specifically dedicated to the launch and implementation of the PHIN Regional HIS Strategic Plan, 2012-2017 http://www.phinnetwork.org/Portals/0/DRAFT_Implementation%20Plan_V0.6_Dec.pdf. The workshop focused on four of the six main strategies of the plan and a total of 25 presentations were given from representatives from across the Pacific.
- The HIS Knowledge Hub delivered a HIS short course to mid-level managers responsible for the collection, analysis and use of health information performance assessment or health policy and planning. The success of the innovative and comprehensive course on HIS was achieved through key partnerships with the WHO/ WPRO, Global Fund (GF), Pacific Islands Health Officers Association (PIHOA), SPC, FNU and the Pacific Malaria Support Initiative Centre (PacMISC). (more detail in Objective 4)

Product III: Strengthening vital statistics and cause-of-death data

The key achievements in this area have been:

- The HIS Knowledge Hub continued collaborative work with the Fiji National University (FNU) focusing on HIS curriculum development and regional training programs. The Hub worked closely with FNU to build the capacity of local staff in the delivery of CoD training workshops.
- The HIS Knowledge Hub convened an expert group meeting to develop a simple death certificate guide to help doctors learn to correct death certification. The capacity building tool was designed to increase practical knowledge and skills to improve death certification by medically trained doctors in WHO member countries.
- The HIS Knowledge Hub convened an expert group on VS/CR tools and resources with the HMN, IHME, WHO, WPRO, and STPHI to undertake a comprehensive review of all existing, emerging and new tools to support countries in VS/CR (as part of the Resource Kit development)

Product IV: Health information systems strengthening and maternal and child health

The HIS Knowledge Hub strategically chose to continue the strong relationship with the University of Auckland to build on the activities of the CHIP. The Hub took advantage of the University of Auckland's networks across the Pacific to increase focus, influence and dissemination which the Hub could not have achieved alone.

Lessons and challenges

1. Broadening access through partnerships increasing chances for sustainability (technical, financial and organisational) and also for leveraging broader health systems strengthening. The key partnerships with WHO/WPRO, GF, PIHOA, SPC, FNU and PacMISC are critical in providing the necessary imprimatur, technical expertise and resourcing.
2. The HIS Knowledge Hub has been successful in achieving greater dissemination and influence through identifying and working with key international agencies and professional organisations in the field. The Hub continued to utilise existing relationships including the strategic membership of the Technical Advisory Group (TAG); technical experts from the University of Queensland to further the Hub work and build collaborations that are sustainable.
3. The PHIN can be a useful capacity development mechanism for the Pacific region, and investment in supporting its development and recognition in the region will provide a sustainable platform of support between health information managers in the region.
4. The convening role of the HIS Hub supports bringing together partners who may not traditionally work together, but find useful synergies and interests when they do meet. This broadening of the networks between development agencies which support health information and vital statistics in the Asia Pacific region can provide useful support to sustain the implementation of evidence based practice on HIS and health systems strengthening.

c. Objective 3: Disseminate relevant and useful HIS knowledge resources

Cause of death information is the cornerstone of any health information system as it guides policy, planning and resourcing of health priorities. This is particularly important for countries undergoing rapid epidemiological transition. Many countries are unaware of the poor functioning of their vital statistic systems and of the methods and measures that can provide information on population health

status. Furthermore, in the recently released '*Keeping Promises, Measuring Results*', the Commission on Information and Accountability for Women's and Children's Health listed 'better information for better results' as their top recommendation for improving the health of women and children. Increasing the number of countries with well-developed systems to measure births, deaths and causes-of-death (vital statistics) was also listed as the top priority for improving information, which aligns with the Hub's continued investment in vital statistics in the Asia-Pacific region.

The 2011 work plan products were developed to ensure that new knowledge generated would be disseminated to a range of interested stakeholders in appropriate, relevant and useful formats. The Hub developed a strategic approach for communicating Hub knowledge to strengthen health systems through the uptake of products to support evidence-based policy and practice. The communication strategy strategically focuses on developing appropriate packaging and marketing of products to key stakeholders. The website was improved to allow for easy access to knowledge products and optimal navigation of Hub information. Face-to-face presentations at key events and network meetings continued to be an essential mode for disseminating product activities. A broad range of publications were produced including working papers, documentation notes, policy briefs, capacity building tools and summaries (see appendix 1) which were disseminated through in-country briefings, direct mail outs to development partners, policy makers and stakeholders, and placed on the web for broad access.

The HIS Hub has developed a strategic approach for communicating Hub knowledge, including the establishment of a **Communications Officer**, contracting of an **external editorial team** and development of a **Communication Strategy**. The Strategy is informed by the *Independent Progress Report* which identified a range of issues surrounding achievement of the overall aim of the Hubs with emphasis on the practical value and usage of Hub outputs. The bulk of the recommendations and strategies to achieve those were focused on improved communication with Hub stakeholders.

To support the achievement of the Hub's aim and objectives, the goal of the HIS Hub Communication Strategy is to **strengthen health systems through the uptake of Hub knowledge products to support evidence-based policy and practice**. To achieve this aim the following key communications objectives need to be met:

- Effectively disseminate HIS Hub products to primary and secondary audiences
- Increase use of HIS Hub knowledge products by donor partners and country health systems for policy and practice change
- Influence HIS policy in the Asia Pacific region through the practical application of HIS Hub knowledge products
- Strengthen capacity in the Asia Pacific region for stakeholders to participate effectively in the development of HIS Hub knowledge products.

Recommendations of the *Independent Progress Report* emphasised the need for Hubs to work with stakeholders to increase their participation and usage of Hub materials. The HIS Hub works on the principle that successful dissemination and uptake will engage the key audiences by delivering what the audience wants and needs in a way that supports its utilization for policy, practice or capacity strengthening. With these objectives in mind the following audiences will be targeted through the Communication Strategy:

Primary audiences

- Australian Agency for International Development (Aus AID) advisers
- Aus AID Australia-based program staff
- Aus AID in-country staff
- Ministry/National Department of Health staff in the Asia Pacific region with a focus on:
 - Ministers of Health and Planning
 - Secretaries and Deputies for Health and Planning
 - Practitioners, such as clinicians and service planners
 - HIS managers in health sector and other relevant sectors

Secondary audiences

- Other Aid Program donors and technical partners working in the Asia Pacific Region specifically:
 - WHO
 - UN agencies
 - Secretariat of the Pacific Community
 - New Zealand Aid Program
 - USAID, DFiD
 - Academics
 - Networks participating in health information systems activities.

Other communication and dissemination activities have been influenced by the *Independent Progress Report* and include:

- The application of a 'productising' approach: working paper to policy brief to case study, supported by narrated PowerPoint's, summary statements and headlines
- Creation of a common branding and template approach to generate consistent and recognizable visual look and feel to all outputs
- Appointment of Communication Specialist to manage: a) the work of transforming research outputs to more general communication pieces; b) maintain the website and; c) manage stakeholder engagement mechanisms including dissemination and relevant convening activities.

Additionally, the four Hubs with AusAID have developed an electronic newsletter which went live in November 2011. This will address many of the recommendation of the Mid-term Review about alerting stakeholders and audiences of new materials and activities by the Initiative and branding of the initiative as well as accessibility of the Hub products to the internal AusAID audience.

Experience tells us that the audience of the Hub is diverse and includes policy makers, academics, health information systems practitioners and development agency staff—across a range of technical and program levels. In keeping with the diversity of our audience, a range dissemination activities and communication tools are required (Table 1). All tools will be available electronically (email, web, CD-ROM and multimedia), with low resolution materials and easily printable formats. The Hub website will continue to be improved to allow for easy access to knowledge products and other relevant resources, and optimal navigation of information, as well as providing a forum for interactive knowledge exchange between the various HIS communities and practitioners. Face-to-face presentations and activities will continue to be an essential communication channel; acknowledging

that for some cultures, the most successful channels are those that engage the audience face-to-face in environments where web connectivity is limited and relationships are critical to confidence in a message.

Table 1 Communication tools by audience

Audience	Policy briefs	Summaries	Conference	Teaching	Country briefs	Working papers & documentation notes	Published papers
Ministers of Health and Planning	x		x				
Secretaries and Deputies for Health and Planning	x						
Practitioners, such as clinicians and service planners		x	x				
HIS managers in the health sector and other relevant sectors		x		x			
AusAID in-country staff		x			x		
AusAID Australia-based program staff	x	x					
AusAID advisers	x	x					
Other Aid Program donors and technical partners working in the Asia Pacific Region	x	x			x	x	
Networks participating in HIS activities	x	x	x	x	x	x	x
Academics				x		x	x
Non-government agencies and organisations (e.g. SPC, WHO, UNESCAP)	x	x			x	x	x

Product I: Essential HIS investments for health service management

- The HIS Knowledge Hub presented on “*understanding the role of information and communications technology (ICT) in public health*” (Working Paper 17) at the Public Health Association 41st Annual (PHAA) conference in September.

Publication of :

- Conceptualising the information needs of senior decision makers in health.*** HIS Knowledge Hub Working Paper Series No. 18, School of Population Health, University of Queensland, Brisbane, 2011
- Monitoring health inequalities: measurement considerations and implications.*** HIS Knowledge

Hub Working Paper Series No. 20, School of Population Health, University of Queensland, Brisbane, 2011

- **Improving utilisation of existing data sources for health information: an examination of demographic and health surveys.** HIS Knowledge Hub **Working Paper Series No. 21**, School of Population Health, University of Queensland, Brisbane, 2011
- **Building the evidence base for health policy: guidelines for understanding and utilizing basic health information.** HIS Knowledge Hub **Documentation Note Series No. 13**, School of Population Health, University of Queensland, Brisbane, 2011
- **Analysing parliamentary questions to determine the information needs of senior decision makers in health.** HIS Knowledge Hub **Documentation Note Series No. 14**, School of Population Health, University of Queensland, Brisbane, 2011
- **Why are health information systems important?.** HIS Knowledge Hub Policy Brief, School of Population Health, University of Queensland, Brisbane, 2011
- **National use of health surveys.** HIS Knowledge Hub Policy Brief, School of Population Health, University of Queensland, Brisbane, 2011
- **Why strengthen health information systems in the Pacific and how could this be done?.** HIS Knowledge Hub Policy Brief, School of Population Health, University of Queensland, Brisbane, 2011

Drafting of

- **Essential HIS investments for health service management.** HIS Knowledge Hub **Working Paper Series No. 22**,
- **Integrated surveillance systems: getting the most out of health information systems.** HIS Knowledge Hub **Working Paper Series No. 23**,

All published products made available on the web, on CD, hard copy, circulated at Hub Initiatives and related meetings, circulated to all registered persons and organisations in the HIS Hub mailing list, advertised in the newly developed Hub Flash.

Product II: Strengthening and expanding the HIS workforce

The HIS Knowledge Hub short course on HIS comprising of twenty modules for delivery in October 2011 is a major means of disseminating the HIS Hub and other partners and experts information and resources on HIS (More details on short course –see objective 4).

Product III: Strengthening vital statistics and cause-of-death data

The HIS Knowledge Hub presented at a number of conferences and workshops across the Asia and Pacific region addressing the improvement of cause-of-death and vital statistics throughout 2011. Key achievements in this area have been:

- The HIS Knowledge Hub contributed to the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) regional forum on assessing civil registration and vital statistics Systems in the Asia-Pacific region in Bangkok The main result of the forum was an outcome statement calling upon governments and international organizations for urgent action to increase their support in strengthening civil registration and vital statistics systems in the Asia-Pacific region. Subsequent to the forum, the ESCAP Committee on Statistics endorsed a regional

programme for the improvement of vital statistics and civil registration in Asia and the Pacific. This work is a continuation of activities from the beginning of the HIS Knowledge Hub.

- The HIS Knowledge Hub presented on the Hub's work on vital statistics and HIS at the 9th Meeting of Ministers of Health for the Pacific Island Countries in Honiara. The objective of the meeting was to articulate generated knowledge around vital statistics and HIS and provide recommendations to the Pacific Leaders for action. The Regional Health Information Systems Strategic Plan was endorsed at the meeting by members, HIS professionals, development partners and technical agencies who recognized the urgent need to effectively address HIS issues and challenges in the region.
- The HIS Knowledge Hub presented at the Pacific Senior Health Officials Network (PSHON) meeting in Cairns. The objective of the meeting was to present the Hub's work on vital statistics and NCDs to PSHON members and stakeholders. An article based on the presentation at the meeting on the implications of NCDs will be published in the next edition of the PSHON newsletter.
- Development of the Pacific Vital Statistics Development Initiative in collaboration with SPC, WHO, UNICEF and UNFPA. The aim of the plan is to assist Pacific countries to understand the critical importance of vital statistics on births, deaths and causes-of-death and thereby to improve their availability, accuracy and use. Category 1 workshop on strengthening vital registration systems held in Fiji in September 2011. The workshop included small island states in the south and central Pacific such as Nauru, the Cook Islands, Niue, Tokelau and Tuvalu. Registration of births and deaths in these countries were considered to be nearly complete. The workshop assisted countries complete the Rapid Assessment of their systems and identify key improvement goals. During the workshop countries developed draft work plans to address the issues identified. The plans can be used to discuss with stakeholders when seeking endorsement of their plans.

Publications:

Guidelines for doctors on cause-of-death certification. HIS Knowledge Hub Capacity Building Tool, School of Population Health, University of Queensland, Brisbane, 2011

Development of a resource kit for strengthening practice and systems in civil registration and vital statistics. HIS Knowledge Hub **Documentation note**, School of Population Health, University of Queensland, Brisbane, 2011

An assessment of mortality estimate for Fiji, 1949-2008: findings and life tables. HIS Knowledge Hub **Documentation Note Series No. 12**, School of Population Health, University of Queensland, Brisbane, 2011

Symptom recall and the diagnostic accuracy of verbal autopsies. HIS Knowledge Hub **Documentation Note Series No. 11**, School of Population Health, University of Queensland, Brisbane, 2011

Strengthening practice and systems in civil registration and vital statistics: A resource kit. HIS Knowledge Hub **Working Paper Series No. 19**, School of Population Health, University of Queensland, Brisbane, 2011

All published products made available on the web, on CD, hard copy, circulated at Hub Initiatives and related meetings, circulated to all registered persons and organisations in the HIS Hub mailing list, advertised in the newly developed Hub Flash.

Product IV: Health information systems strengthening and maternal and child health

Findings from the CHIP were presented by Dr Teuila Percival, Project Manager at the 14th annual Pasifika Medical Association (PMA) Conference held in Nadi in August. The conference entitled “*claiming healthy futures*” with clinical themes of “*cancer*” and “*child and maternal health*” was the largest annual gathering of Pacific health workers and professionals from the region. As a result of the interest in the project presented at the conference, and following on from the release of the HMN report, the HIS Knowledge Hub in collaboration with the University of Auckland will develop a similar report on Child Health designed specifically for the Pacific region.

Publications:

Pacific Child Health Indicator Project: Information for action. HIS Knowledge Hub Technical Summary, School of Population Health, University of Queensland, Brisbane, 2011

Making sense of maternal mortality estimates. HIS Knowledge Hub Technical Summary, School of Population Health, University of Queensland, Brisbane, 2011

Making sense of maternal mortality estimates. HIS Knowledge Hub Policy Brief, School of Population Health, University of Queensland, Brisbane, 2011

All published products made available on the web, on CD, hard copy, circulated at Hub Initiatives and related meetings, circulated to all registered persons and organisations in the HIS Hub mailing list, advertised in the newly developed Hub Flash.

Lessons and challenges

1. The harmonization of work of various partners into products such as training , publications, workshops across themes areas such as is happening through the BAG is useful, being welcomed both by countries and by agencies. It is anticipated by all parties that it will increase the chances of impact, sustainability and capacity strengthening, It does take more time, and needs to be seen as part of the dissemination effort, as these platforms may need to be developed or strengthening before they can operate in this manner. Other groups in HMN/ WHO-Africa and WPRO are interested in reviewing the approach of PHIN and BAG for other work in HIS. The time required for professional edit and formatting is more than expected – especially as one works to increase the accessibility of various working papers and documentation notes into a range of different formats for different audiences. Careful planning of what is appropriate for “conversion” will be required to ensure efficient use of this process.
2. Feedback from targeted audiences is required to ensure that efforts to increase accessibility of the information in the various formats is successful, and to increase the efficient use of professional editing, and templates for writers. The Hub Flash to date has not generated much demand form one target audience – and this needs to be discussed in early 2012 to finds ways of improving this outreach to AusAID officers.
3. The aims and objectives of the various levels of dissemination tools e.g. Technical summaries, policy briefs etc still have varying interpretations across the Hubs. The HIS Hub feels that policy briefs need to have some active recommendations as part of the brief (to influence policy) and

anything that doesn't, even if targeted for policy makers, should be a summary or information brief.

4. Measuring the impact of the dissemination activities remains complex and problematic and serious efforts need to be jointly undertaken to develop a Hub initiative approach to this area.
5. The development of the Resource Kit has been delayed due to emerging techniques which need to be incorporated into the Kit to make it up-to-date and a useful resource for countries, the time it takes to balance technical soundness with ease of accessibility for audiences with English as a second language, or different levels of technical literacy, and the level of support required to assist the technical (expert) writers to bridge this gap. There is a need for strong technical supervision of the professional editor's work, as misinterpretation can occur in the process of simplification.
6. The findings of the Pacific Child Health Indicator work have stimulated interest in many of the Pacific nations, including in stakeholders of the health system who are usually not interested in this – such as the physicians. There needs to be a formal linkage of the CHIPS work with the Commission on Information and Accountability for Women's and Children's Health, and this linkage should be led by the Pacific stakeholders.

Objective 4: Expand HIS capacity

Health Information Systems are a neglected area within health systems despite being a key component. This neglect has led to a critical shortage of qualified health information professionals to undertake work in this field which then has a spill-over effect on the availability for evidence based planning and policy. In 2009 the Hub identified core competencies for HIS, as workforce development was recognized as a major factor in a successful HIS. Since then, the Hub has continued to develop this important program of work through providing training and education, developing a HIS Short Course, and producing new knowledge resources.

The 2011 work plan has contributed to an increase in evidence-informed policy-making via the strengthening of HIS capacity nationally and internationally. This was expanded through raising the importance of HIS issues and solutions. The Pacific Health Information Network was used as a platform to continue the Hub's efforts in increasing the profile of HIS among Pacific Health professionals.

Product I: Essential HIS investments for health service management

Work already discussed under Objectives 1 and 2 as outputs that also support expanding HIS workforce capacity. These include: the products described in the following publications

- ***Conceptualising the information needs of senior decision makers in health.*** HIS Knowledge Hub Working Paper Series No. 18, School of Population Health, University of Queensland, Brisbane, 2011
- ***Monitoring health inequalities: measurement considerations and implications.*** HIS Knowledge Hub Working Paper Series No. 20, School of Population Health, University of Queensland, Brisbane, 2011
- ***Improving utilisation of existing data sources for health information: an examination of demographic and health surveys.*** HIS Knowledge Hub Working Paper Series No. 21, School of Population Health, University of Queensland, Brisbane, 2011
- ***Building the evidence base for health policy: guidelines for understanding and utilizing basic health information.*** HIS Knowledge Hub Documentation Note Series No. 13, School of Population

Health, University of Queensland, Brisbane, 2011

- **National use of health surveys.** HIS Knowledge Hub Policy Brief, School of Population Health, University of Queensland, Brisbane, 2011
- **Why strengthen health information systems in the Pacific and how could this be done?.** HIS Knowledge Hub Policy Brief, School of Population Health, University of Queensland, Brisbane, 2011
- **Integrated surveillance systems: getting the most out of health information systems.** HIS Knowledge Hub **Working Paper Series No. 23**, School of Population Health, University of Queensland, Brisbane, 2011

Product II: Strengthening and expanding the HIS workforce

This Product builds on the last three years activities related to capacity building within Australia and the Asia Pacific region. Key achievements in this area have been:

- The HIS Knowledge Hub established two fellowships which linked to on-going product development and research. The fellowships based at the HIS Knowledge Hub were awarded to partner countries (one Pacific and one Asia) to strengthen the knowledge of the individuals in their own country institutions in health information related roles. The program provided networking opportunities which enhanced the fellow's professional experience through developing leadership skills and building partnerships and linkages throughout Asia and the Pacific region. The peer-to-peer learning included knowledge sharing, seminars and skills development.
- Based upon the evaluation and peer review of the successfully piloted HIS short course (Phase 3), the HIS Knowledge Hub revised and repackaged the course for wider dissemination for countries and partners. The HIS short course was delivered in October 2011 at the University of Queensland to 27 participants from thirteen different countries in Asia and the Pacific. The HIS Knowledge Hub revised and repackaged a short course on HIS comprising of twenty modules for delivery in October 2011. Each of these modules can also be standalone training module and opportunistically added into workshops. All the materials were provided in hard copy and electronic versions for participants to use in their own settings and for training of others if they so wished. The short course was customized for the Asia and Pacific region to promote the importance of health systems, provide high quality education relevant to the targeted audience, and give a better understanding of HIS and its use in health research and public policy. Four professionals from across the Asia and Pacific region were sponsored by the HIS Knowledge Hub to undertake the training with a further twenty-three participants funded by their institutions or collaborating partners.
- Development of a Pacific Health Information Network (PHIN) six-year Regional Health Information Systems Strategic Plan, which focused on six strategic areas for action. The plan is designed to treat health information as a national asset to improve the health of individuals and strengthen HIS in all Pacific Island Countries and Territories (PICTs). The plan was launched at the HIS workshop in Nadi in August 2011.

Fiji is an example of a country where capacity amongst public health officials in data utilisation can be developed. To meet this need, the 'Training in the Use of Existing Data Sets' workshop was conducted in Fiji in October 2011. The workshop was adapted from similar training conducted in Samoa in 2010. The training aimed to develop the ability of public health officials to critically assess the quality of data they collect and utilise, and to learn how to compute indicators for use as evidence for health policy.

The training workshop comprised lectures, in-class discussions and in-class exercises using Microsoft Excel. The in-class exercises applied key techniques to hypothetical data relevant to Fiji. There was an additional focus on in-class exercises and interpretation in this training compared with that in 2010 in Samoa. To complement the training, participants were provided with a set of guidelines to assess data quality and compute indicators that were developed based on the Samoa training, as well as a participants' manual. During in-class discussions, participants identified a number of quality issues with data they use in their daily roles. Workshop evaluations revealed that many participants benefitted from learning about data sources, data analysis and interpretation, and from doing the in-class Excel-based exercises. They expressed a desire for more training in data utilisation. Such further training is needed in Fiji, and should be appropriately targeted, because of the range of knowledge, skills and responsibilities of public health officials and researchers requiring training.

One UQ Masters student graduated after completing her thesis in a HIS topic – looking at the use of health information system outputs for national health planning in a sample of Pacific countries. The HIS Hub contributed sessions towards the Health Policy and Management subjects of the MPH and MIPH and the Bachelor of Health Sciences at UQ in the fields of HIS Indicators, HIS systems, and vital statistics and measuring morbidity and mortality (including maternal and child). These sessions are available for use by others in masters and undergraduate training.

Product III: Strengthening vital statistics and cause-of-death data

The key achievements in this area have been:

- Cause-of-death data is one of the essential sets of information required to monitor impact of health programs, measure changes in trends, and to assist in resource allocation decisions. Based on knowledge generated by the HIS Knowledge Hub since 2009, the Hub recognised the need for a practical resource which could be used as a self-learning tool or as part of interactive training workshop. The generic guidelines on death certification were written to assist doctors in developing countries to improve the quality of their CoD data. Such a guide is not otherwise available. The HIS Knowledge Hub developed a guideline for doctors on cause-of-death certification. This booklet will provide support to doctors and medical student in developing countries to improve accuracy when completing death certificates.
- The HIS Knowledge Hub developed a Resource Kit to provide support to countries developing and strengthening capacity in cause-of-death measurement, and in undertaking their own quality audits and quality improvement plans. The Resource Kit aims to improve mortality reporting practices including the use of verbal autopsies (for further details see Objective 3).

Product IV: Health information systems strengthening and maternal and child health

Child health indicators assist clinicians, policy-makers and managers with effective decision-making. The CHIP reviewed HISs and clinical services to find functional health indicators to determine the priority health issues. A set of indicators for the priority child health indicators suitable for Samoa and Tonga were developed.

Lessons and challenges

- There are no clear pathways for competency development in HIS. These needs to be developed. Based on these pathways and competencies, available training activities (self-directed, web based, informal and formal courses) can be mapped and gaps in these training activities identified. This can then help focus the development of further HIS capacity development activities as well as guide countries in defined their HR needs for HIS.
- The Hub proactively worked with national and international stakeholders to provide more opportunities for the development and growth of HIS “champions” in the Asia Pacific region. The training and coordination activities conducted throughout 2011 focused directly on facilitating the expansion of the HIS capacity (including the new HIS Leadership Forum) and the PHIN provides an opportunity for networking and peer support to often isolated HIS staff within the region.
- Expanding the capacity of Australian institutions and professionals continued to be a challenge for the Hub, especially as there seems to be limited explicit interest in this field either academically or professionally.
- Engaging partners in developing products builds their confidence and capacities, both in implementing and sustaining the outcomes of specific products as well as having an approach to HIS that can be applied in new situations.
- Gaining and maintaining senior manager’s interest and support in HIS is required to provide a supportive environment for expanding HIS capacity.
- Although there is an increasing wealth of public health data in many countries, these are not being fully utilized to inform health decision-making. Many public health officials lack the understanding of how such data can be assessed, analysed and interpreted to provide evidence for policymakers. There is hence a significant need for such officials to develop skills and knowledge of how to better exploit these existing data sets.
- Although the self directed guide and modules of the resource kits are increasing capacities of many in these techniques, there is a strong demand for more formal training as part of the HIS competency pathway in civil registration and vital statistics. Such courses do not exist and will need to be developed.
- Fellows have identified the need for further capacity development and consolidation of skills learnt through mentoring scheme. Appropriate HIS experts in the Asia Pacific region needs to be identified and “seconded” to support the mentoring of emerging HIS managers and leaders in the region. This may be through formal placements, Skype and email “conferences” and other opportunities. As this workforce is small in number care must be taken to avoid high opportunity costs for the individual and health system in these mentoring opportunities, as remote support should be a significant part of this process, but evaluated for its effectiveness.

7. Cross Hub activities

In 2011, a number of cross hub activities increased and broadened in scope including:

Administrative:

- Regular Hub manager teleconferences (AusAID involvement in some of these)
- Coordination meetings between hub managers and technical directors
- Development of joint M and E approaches and formats

Thematic

- One day conference on engage in with East Timor – what does the country want in support and approach, and how should the Hubs engage
- Family planning one day meeting

Communication and dissemination

- Develop of a sub-group
- Joint work on templates for key dissemination products
- The Hub Flash

Product linked

- Involvement in each other's technical review meetings: the HIS Hub participated in the Health Finalizing and Policy Hub and the HRH Hub annual meetings
- The HIS Hub participated in the Flagship course

Advocacy of the Initiative

- Joint presentations of Initiative work at annual meeting
- Joint presentations at key Pacific health policy meetings

8 Sustainability

The sustainability of the HIS Knowledge Hub's products and their strategic benefits are strongly linked to the strategic networking and capacity development which the HIS Knowledge Hub has invested, including strengthening relationships with ESCAP, FNU, PHIN, SPC and WHO. The HIS Knowledge Hub attended a number of national and international conferences and workshops to present findings and promote the generated knowledge outputs and facilitate face-to-face meetings with key partners and institutions in priority countries. Key partners were engaged directly to collaborate with the Hub on product development drawing on their expertise and knowledge in Australia and the region in their respective substantive area(s).

Gaining political and policy commitment through targeted activities with senior health managers and policy-makers including Ministers of Health and clinicians has been one strategy for sustainability – through work with PSHON, PHIN, Tonga MoH, FNU and SPC. The HIS Knowledge Hub has continued to support and engage the growing Pacific Health Information Network (PHIN) throughout 2011. The Hub consolidated its convening capabilities with the PHIN to support a strategic approach to strengthening HIS in the region. The network assisted the Hub to raise awareness in the region and increase the importance of HIS to ensure that it is recognized as a prominent activity as part of health system development. With the PHIN network, the Hub worked to build capacity to ensure the Pacific nations specifically take an active role in improving key Pacific-related HIS issues.

9 Conclusion

The HIS Knowledge Hub continued to expand the evidence-base; consolidate previous work; and promote knowledge translation into policy for improved use of information for planning, policy and evaluation and dissemination on best methods for improving HIS to strengthen health systems in developing countries in the Asia Pacific region. The 2011 work plan consolidated previous research priority investments with a focus on dissemination of Hub products for broad range of stakeholders and audiences. Specifically, the Hub purposefully extended and built upon products to ensure that key knowledge gaps, capacity and dissemination were effectively addressed. The importance of these ongoing investments was highlighted by the mid-term review analysis and recommendations.

The next Phase (2012-2013) will focus on targeted dissemination and communication to policy makers and practitioners, AusAID, partner governments and development partners with expected outcomes on policy development and review and practice.

Appendix One: Publications from 2011

Working Papers

Improving cause-of-death certification practices in the Pacific: findings from a pilot study of the WHO web-based ICD training tool. HIS Knowledge Hub **Working Paper Series No. 16**, School of Population Health, University of Queensland, Brisbane, 2011

Contributors: Sue Walker, Rasika Rampatige, Iris Wainiqolo, Audrey Aumua

Understanding the role of technology in health information systems. HIS Knowledge Hub **Working Paper Series No. 17**, School of Population Health, University of Queensland, Brisbane, 2011

Contributors: Don Lewis, Nicola Hodge, Duminda Gamage, Maxine Whittaker

Conceptualising the information needs of senior decision makers in health. HIS Knowledge Hub **Working Paper Series No. 18**, School of Population Health, University of Queensland, Brisbane, 2011

Contributors: Philip Davies, Nicola Hodge, Audrey Aumua, Asmat Malik, Yong Yi Lee,

Strengthening practice and systems in civil registration and vital statistics: A resource kit. HIS Knowledge Hub **Working Paper Series No. 19**, School of Population Health, University of Queensland, Brisbane, 2011

Contributors: Susan Upham, Maxine Whittaker, Alan Lopez, Lene Mikkelsen, Rasika Rampatige

Monitoring health inequalities: measurement considerations and implications. HIS Knowledge Hub **Working Paper Series No. 20**, School of Population Health, University of Queensland, Brisbane, 2011

Contributor: Emmanuala Gakidou, Nancy Fullman

Improving utilisation of existing data sources for health information: an examination of demographic and health surveys. HIS Knowledge Hub **Working Paper Series No. 21**, School of Population Health, University of Queensland, Brisbane, 2011

Contributor: Tim Adair

Documentation Notes

Symptom recall and the diagnostic accuracy of verbal autopsies. HIS Knowledge Hub **Documentation Note Series No. 11**, School of Population Health, University of Queensland, Brisbane, 2011

Contributors: Ian Riley, Michael Freeman, Veronica Tallo, Rohina Joshi, Diozele Sanvictores, Christopher Murray, Alan Lopez

An assessment of mortality estimate for Fiji, 1949-2008: findings and life tables. HIS Knowledge Hub **Documentation Note Series No. 12**, School of Population Health, University of Queensland, Brisbane, 2011

Contributors: Karen Carter, Margaret Cornelius, Richard Taylor, Shareen Ali, Chalapati Rao, Alan Lopez, Vasemaca Lewai, Ramneek Goudar, Clair Mowry

Building the evidence base for health policy: guidelines for understanding and utilizing basic health information. HIS Knowledge Hub **Documentation Note Series No. 13**, School of Population Health, University of Queensland, Brisbane, 2011

Contributor: Timothy Adair

Analysing parliamentary questions to determine the information needs of senior decision makers in health. HIS Knowledge Hub **Documentation Note Series No. 14**, School of Population Health, University of Queensland, Brisbane, 2011

Contributors: Philip Davies, Nicola Hodge, Linda Skiller

Training the HIS workforce in Fiji to maximize the utilization of existing datasets. HIS Knowledge Hub **Documentation Note Series No. 15**, School of Population Health, University of Queensland, Brisbane, 2011

Contributor: Timothy Adair

Development of a resource kit for strengthening practice and systems in civil registration and vital statistics. HIS Knowledge Hub **Documentation note**, School of Population Health, University of Queensland, Brisbane, 2011

Contributors: Susan Upham, Maxine Whittaker, Carla AbouZahr, Lene Mikkelsen, Rasika Rampatige, Alan Lopez

Capacity Building Tools

Guidelines for doctors on cause-of-death certification. HIS Knowledge Hub Capacity Building Tool, School of Population Health, University of Queensland, Brisbane, 2011

Contributors: Professor Ian Riley, Dr Saman Gamage, Dr Wansa Paoan, Susan Upham, Dr Rasika Rampatige

Issue Brief Series

Why are health information systems important?. HIS Knowledge Hub Policy Brief, School of Population Health, University of Queensland, Brisbane, 2011

National use of health surveys. HIS Knowledge Hub Policy Brief, School of Population Health, University of Queensland, Brisbane, 2011

Policy Brief Series

Why strengthen health information systems in the Pacific and how could this be done?. HIS Knowledge Hub Policy Brief, School of Population Health, University of Queensland, Brisbane, 2011

Making sense of maternal mortality estimates. HIS Knowledge Hub Policy Brief, School of Population Health, University of Queensland, Brisbane, 2011

Technical Summary

Making sense of maternal mortality estimates. HIS Knowledge Hub Technical Summary, School of Population Health, University of Queensland, Brisbane, 2011

Pacific Child Health Indicator Project: Information for action. HIS Knowledge Hub Technical Summary, School of Population Health, University of Queensland, Brisbane, 2011

Annex 2 Theme development

Theme 1 Essential HIS investments for health system strengthening

2009	2010	2011
Outcomes <ul style="list-style-type: none"> Identified the information gaps and cross-cutting issues in HIS for a more in-depth analysis Critical assessment of prior HIS developments Outputs: Working Papers <ul style="list-style-type: none"> Assessing health systems performance using information on effective coverage of interventions (#03) Improving the quality and use of health information: essential strategic issues (#05) Role of health surveys in national health information systems: best use scenarios (#06) Issues and challenges for health information systems in the Pacific: findings from the PHIN meeting and the Pacific health information systems development forum (#07) Outputs: Documentation Notes <ul style="list-style-type: none"> Health information systems: a case study of Vanuatu (#03) Health Information systems: a case study of Wallis and Futuna (#04) 	Outcomes <ul style="list-style-type: none"> Health information needs of Ministers identified Outputs: Working Papers <ul style="list-style-type: none"> Preparing routine health information systems for immediate health responses to natural disasters (#12) Outputs: Documentation Notes <ul style="list-style-type: none"> Establishing the health information needs of Ministries and Ministers of health: findings from a literature review (# 05) 	Outcomes <ul style="list-style-type: none"> Key information issues for leadership and governance identified Outputs: Working Papers <ul style="list-style-type: none"> Understanding the role of technology in health information systems (#17) Conceptualising the information needs of senior decision makers in health (#18) Outputs: Documentation Notes <ul style="list-style-type: none"> Building the evidence base for health policy: guidelines for understanding and utilising basic health information (#13) Analysing parliamentary questions to determine the information needs of senior decision makers in health (#14) Outputs: Issue Briefs <ul style="list-style-type: none"> Why are health information systems important? National use of health surveys Outputs: Policy Briefs <ul style="list-style-type: none"> ICT in health information systems: benefits, opportunities and the determinants of success

Theme 2 Strengthening and expanding the HIS workforce

2009	2010	2011
Outcomes <ul style="list-style-type: none"> Strong networks developed Capacity Building Think Tank hosted PHIN meeting hosted Pacific HIS Development Forum hosted Outputs: Working Papers <ul style="list-style-type: none"> Issues and challenges for health information systems in the Pacific: Findings from the PHIN meeting and the Pacific health information systems development forum (# 07) 	Outcomes <ul style="list-style-type: none"> Delivery of intensive five day HIS short course Delivery of short course on how to improve the use of existing data Pilot testing of death certification curriculum at FNU Outputs: Documentation Notes <ul style="list-style-type: none"> Making better use of existing datasets to strengthen the evidence base for health policy: report on a training workshop in Samoa, October 2010 (#06) Monitoring vital events resource kit: rationale, outline and development plan (#09) Outputs: Journal Article <ul style="list-style-type: none"> Teaching cause-of-death certification: lessons from international experience 	Outcomes <ul style="list-style-type: none"> Delivery of short course on cause-of-death certification for physicians Delivery of training on improving the quality of death certification Delivery of training on improving the quality and use of data Launch of PHIN Regional HIS Strategic Plan Pacific HIS Forum hosted Fellows hosted at HIS Hub Outputs: Working Papers <ul style="list-style-type: none"> Improving cause-of-death certification practices in the Pacific: findings from a pilot study of the WHO web-based ICD training tool (#16) Outputs: Documentation Notes <ul style="list-style-type: none"> Training the HIS workforce in Fiji to maximize the utilization of existing datasets (#15) Outputs: Policy Briefs <ul style="list-style-type: none"> Why strengthen health information systems in the Pacific and how could this be done?

Theme 3 Strengthening vital statistics and cause-of-death data

2009	2010	2011
Outcomes <ul style="list-style-type: none"> Development of detailed tool for assessing the quality and functioning of country vital registration systems Outputs: Working Papers <ul style="list-style-type: none"> Improving the quality of birth and cause-of-death information: guidelines for a standards-based review of country practices (#01) Rapid assessment methods for vital statistics systems (#02) Teaching cause-of-death certification: lessons from international experience (#04) Assessing the quality of vital statistics systems: lessons from national evaluations in Sri Lanka and the Philippines (#08) Outputs: Documentation Notes <ul style="list-style-type: none"> Assessing the production, quality and use of national vital statistics: a case study of Sri Lanka (#01) Assessing the production, quality and use of national vital statistics: a case study of the Philippines (#02) Outputs: Tools and Guidelines <ul style="list-style-type: none"> Rapid assessment of national civil registration and vital statistics systems Improving the quality and use of birth, death and cause-of-death information 	Outcomes <ul style="list-style-type: none"> Development of Brisbane Accord Group (BAG) Outputs: Working Papers <ul style="list-style-type: none"> Rapid assessment of vital statistics systems: evaluation of the application of the WHO/ HIS Hub tool in 26 countries in the Asia-Pacific region (#10) Mortality statistics: a tool to enhance understanding and improve quality (#13) Promoting the periodic assessment of the quality of medical records and causes-of-death data: lessons learnt from a medical records study in Sri Lanka (#14) Advocating for civil registration: guide to developing a business case for civil registration systems(#15) Outputs: Documentation Notes <ul style="list-style-type: none"> Routine mortality and cause-of-death reporting and analysis systems in seven Pacific Island countries (#08) Monitoring vital events resource kit: rationale, outlined and development plan (#09) Symptom recall and the diagnostic accuracy of verbal autopsies (#11) An assessment of mortality estimates for Fiji: 1949-2008: findings and life tables (#12) 	Outcomes <ul style="list-style-type: none"> Launch and implementation of Pacific Vital Statistics Action Plan Outputs: Tools and Guidelines <ul style="list-style-type: none"> Guidelines for doctors on cause-of-death certification Resource Kit . Compendium of knowledge and best practices in Civil registration and Vital statistics to assist countries to address gaps in their CRVS systems. Vital statistics Policy briefs for use by countries to influence VS strengthening, policy and planning.

Theme 4 HIS strengthening for MDGs

2009	2010	2011
Outputs: Working Papers <ul style="list-style-type: none"> Critical issues in the Development of health information systems to support environmental health policies and programs: a case study of Ciguatera (#09) 	Outcomes <ul style="list-style-type: none"> Establishment of a Pacific Pediatrician group Outputs: Working Papers <ul style="list-style-type: none"> Making sense of maternal mortality estimates (#11) Outputs: Documentation Notes <ul style="list-style-type: none"> Pacific child health indicator project (#07) Integrating existing datasets to manage key health priorities: the case of mosquito-borne disease (#10) 	Outcomes <ul style="list-style-type: none"> Presentation on the neglected HIS issues for NCD management to the Pacific Senior Health Officials Network (PSHON) Hosted the Joint Management Committee (JMC) meeting on NCDs Outputs: Policy Briefs <ul style="list-style-type: none"> Making sense of maternal mortality estimates Pacific child health indicator project: information for action

PHASE 4

Monitoring & Evaluation Activities 2011

Monitoring and Evaluation Report 2011

The monitoring and evaluation (M&E) framework enables the progress tracking of the HIS Knowledge Hub's activities and achievements throughout the year. The outputs and activities are constantly monitored through weekly tracking sheets and regular senior management meetings.

The HIS Knowledge Hub monitors the outputs of all activities and achievements against the established tracking sheets to ensure tasks are completed and within the allocated time period. This is achieved through quantitative assessment, i.e. the expected number of papers, guidelines, etc. are produced. To guarantee the outputs meet the expected quality, the HIS Knowledge Hub uses a broad external quality review process which was implemented in 2010. In addition, members of the Technical Advisory Group (TAG) are also engaged on an ad hoc basis to review and critique on all Hub activities and outputs.

The effective dissemination of the outputs and activities produced by the HIS Knowledge Hub form a vital part of the M&E framework. In 2011, dissemination was achieved through a number of mediums and forums, including:

- D1: Hard-copy printed (following a standard AusAID template)
- D2: Soft-copy online (available through the Health Information Systems (HIS) Knowledge Hub website and blog, the Pacific Health Information Network (PHIN) website and Facebook page)
- D3: Soft-copy available on CDs and USB memory sticks
- D4: At the cross-Hub initiative meetings
- D5: At various conferences around Australia and internationally
- D6: Via regular email updates, newsletters and Health Hub's flash.

Matrix of Products for 2011

Products	Guiding Objectives			
	Increase the critical, conceptual and strategic analysis of key HIS issues	Expand convening powers and engagement	Disseminate relevant and useful HIS knowledge resources	Expand HIS capacity
I – Essential HIS Investments for Health Service Management	✓	✓	✓	✓
II – Strengthening and expanding the HIS workforce		✓	✓	✓
III – Strengthening vital statistics and cause-of-death data	✓	✓	✓	✓
IV – Health information systems strengthening and maternal and child health	✓	✓	✓	✓

HIS Knowledge Hub Monitoring and Evaluation Framework

Achievement against Indicators 2011 (as of December, 2011)

Products	Indicators	Means of Verification	Achievements
Objective 1: To increase the critical, conceptual and strategic analysis of key HIS issues relevant to the Asia-Pacific region that can be used to inform policy thinking and practical application at the national, regional and international levels			
I – Essential HIS Investments for Health Service Management	A working paper on the essential health information needs and recommended investments for governance and leadership of a health system for organisational management	Quantitative assessment	<p>A working paper on understanding the role of technology in health information systems produced (working paper 17).</p> <p>A working paper on conceptualising the information needs of senior decision makers in health produced (working paper 18).</p> <p>A documentation note on analysing parliamentary questions to determine the information needs of senior decision makers in health produced (documentation note 14).</p>
	Quality of the working paper	External/ peer-review	Working Paper 17, Working Paper 18 and Documentation Note 14 were sent to TAG members and UQ staff for review.
	Two to four policy briefs focusing on health information needs of health leaders	Quantitative assessment	A Policy Brief on action steps and investment guidelines for strengthening health information systems and a Policy Brief on advocating for investments in your health information system: recommendations for action were developed. Both policy briefs will be finalised in February 2012.
	Quality of the policy briefs	External/ peer-review	<p>Peer-review process will be done using the members of the TAG and knowledge/ academic experts.</p> <p>This outcome is yet to be seen (due to be completed in early 2012)</p>
	Use of the policy brief in policy making (OUTCOME)	Most significant change or other qualitative methodology undertaken to develop assessment for each working paper developed	Evaluation planned in 2012

Products	Indicators	Means of Verification	Achievements
	A peer reviewed paper on ‘what do health ministers need to know’ A study on health information needs of health ministers and senior health decision makers and best investments to meet HIS requirements for health systems management	Quantitative assessment	A Working Paper on a framework to guide HIS investments: what needs to be synthesised for senior health decision makers was developed (Working Paper 22). The peer reviewed paper will be completed in February 2012.
	Quality of the peer reviewed paper	External/ peer-review	Peer-review process will be done using the members of the TAG and knowledge/ academic experts.
	Presentation to health ministers and senior health decision makers on findings from this product	Quantitative assessment Document and review presentation activities with Health Ministers and senior decision makers using trip reports, meeting minutes and email communications	Ninth meeting of Ministers of Health for the Pacific Islands countries was held in Honiara, Solomon Islands on 28 June to 1 July 2011. Two issue briefs; why health information systems are important ; and why strengthen health information systems in the Pacific, and how could this be done were presented by the HIS Knowledge Hub at the meeting.
	Quality and appropriateness of the presentation	Use of ‘quality standards for convening’ in evaluation Feedback from Health Ministers and senior decision makers	Initial feedback from the meeting was positive with participants endorsing the importance of HIS in policy and planning in the Pacific. The full extent of this outcome is yet to be seen.
III – Strengthening vital statistics and cause-of-death data	Pilot testing of the resource kit conducted in two to three countries	Quantitative assessment	<p>The resource kit comprises of two main phases followed by a third dissemination and evaluation phase. Phase 1 of the Resource Kit focused on the development of content and is a synthesis of research, knowledge, best practices and country experiences for dealing with common problems.</p> <p>A documentation note on monitoring vital events resource kit: rationale, outline and development plan produced in early 2011 (documentation note 9).</p> <p>A Working Paper on strengthening practice and systems in civil registration and vital statistics: A Resource Kit was produced</p>

Products	Indicators	Means of Verification	Achievements
			<p>(Working Paper 19)</p> <p>A Documentation Note on the methodology of the resource kit (Development of a resource kit for strengthening practice and systems in civil registration and vital statistics) produced (Documentation Note 16). Phase 2 and 3 of the resource kit will be carried out during 2012-2013.</p> <p>A Working Paper (mortality statistics: a tool to enhance understanding and improve quality) produced (Working Paper 13).</p> <p>The HIS Knowledge Hub delivered a medical certification of CoD training course from 7-10 December 2010. The course trained doctors from the public health sector, the hospital sector and from the private health sector.</p> <p>A working paper (promoting the periodic assessment of the quality of medical records and cause of death data: lessons learnt from a medical records study in Sri Lanka) produced (Working Paper 14).</p> <p>A Working Paper (advocating for civil registration: guide to developing a business case for civil registration) produced (Working Paper 15).</p> <p>A Documentation Note (routine mortality and cause of death reporting and analysis systems in seven Pacific Islands countries) produced (Documentation Note 8)</p>
	Quality and usefulness of the resource kit	External/ peer-review	Peer-review process will be done using the members of the TAG and knowledge/ academic experts. This outcome is yet to be seen.

Products	Indicators	Means of Verification	Achievements
	Launch the implementation of the Pacific Vital Statistics Development Initiative	Quantitative assessment	The Pacific Vital Statistics Strategy (PVSS) was launched in Fiji in September at the Category 1 meeting . The meeting was attended by representatives from Tuvalu, Niue, Tokelau, Nauru and the Cook Islands.
	Collaborate closely with UNESCAP/ WHO in implementation of their regional vital statistics initiative, using Hub products and expertise		Following on from the 2010 regional forum on civil registration and vital statistics, the HIS Knowledge Hub participated in the ‘assessing civil registration and vital statistics systems in the Asia-Pacific Region’ in Bangkok from 28-31 March 2011.
IV – Health information systems strengthening and maternal child health	Establishment of Pacific Paediatrician Group to endorse terms of reference and set guidelines for the project.	Quantitative assessment	Terms of reference for the Pacific Child Health Indicator Project were established.
	Synthesis report on implementation of the process of developing two country case studies and associated workshops held in Samoa and Tonga detailing achievements and risks	Quantitative assessment	A documentation note on the Pacific Child Health Indicator Project produced (documentation note 7). Key achievements and milestone reports produced.
	Quality, usefulness and appropriateness of the report	External/ peer-review	Evaluation using qualitative methods to be undertaken in 2012
	Draft and disseminate a set of child health indicators that will be relevant, best practice based, and culturally appropriate for the Pacific Region	Quantitative assessment	An issue brief (making sense of maternal mortality estimates) produced. The Pacific Child Health Indicator Project developed a set of functional child health indicators suitable for Tonga and Samoa (technical summary “CHIP: information for action”).
	Quality of child health indicators	External/ peer-review	Preliminary findings were presented to stakeholders in Samoa and Tonga and discussed in documentation note 7

Objective 2: To expand convening powers and engagement (e.g. communication, networks and partnerships) between the Hubs, Australian institutions and Asia Pacific national, regional and international researchers, development partners and educational institutes

Broader indicator based on our network process developed in 2009

II – Strengthening and expanding the HIS workforce	An introductory short course on HIS for health managers	Quantitative assessment	HIS short course delivered at UQ to 27 participants from 14 countries in the Asia-Pacific region.
	A set of HIS curriculum finalised	Quantitative assessment	The HIS curriculum was developed. The lecture guidelines and reading materials were organised in electronic copies and printed format. The materials were disseminated via the HIS Short Course blog .
	Quality of HIS curriculum	External/peer-review of the curriculum using policy relevant indicator guidelines and knowledge/ academic indicator guidelines Feedback from students	The course (including content and structure) was evaluated by the participants of the course using standard UQ course and lecturer evaluation tools and participant's evaluation report was produced. An internal review of the participants' feedback was conducted.
	Quality of the course and teaching	Feedback from students using evaluation forms	The quality of the course and teaching can be seen in the participants' evaluation report .
	A short course on CoD certification training for physicians finalised and packaged for joint dissemination and delivery	Quantitative assessment	The Hub piloted a study of the WHO web-based ICD training tool in collaboration with QUT and FNU. The Hub conducted a training workshop for clinicians and HIS officers in health information systems and statistics in Tonga. The workshop was designed to improve admission and discharge diagnosis for morbidity and mortality in Tonga.
	A set of curriculum produced	Quantitative assessment	2012 output
	Quality of CoD certification training	External/ peer-review of the curriculum using policy relevant indicator guidelines and knowledge/ academic indicator guidelines Feedback from students	A Working Paper on improving cause of death certification practices in the Pacific: findings from a pilot study of the WHO web-based ICD training tool produced in early 2011 (working paper 16). A report on the activities including the presenter presentations

			from the training conducted in Tonga was produced.
	Quality of the course and teaching	Feedback from students	Participants of CoD pilot test training (WP 16) were asked questions based on the quality of the training and the usefulness of the web based training tool. An evaluation survey was conducted at the conclusion of the Tonga training to gain feedback from the participants.
	A training manual on ‘improving use of existing data’ finalised and packaged for joint dissemination and delivery	Quantitative assessment	A paper on Building the evidence base for health policy: guidelines for understanding and utilising basic health information was produced (Documentation Note 13). The paper was a continuing output from the 2010 work plan. A training manual on the use of existing health datasets was produced to develop the knowledge and skills of public health officials and researchers. A Documentation Note on the delivery of the training workshop in Samoa was produced (making better use of existing datasets to strengthen the evidence for health policy: report on a training workshop in Samoa, October 2010) (Documentation Note 6). A Documentation Note on the delivery of the HIS workforce training in Fiji was produced (Documentation Note 15). In collaboration with Fiji National University, the HIS Knowledge Hub delivered training in the use of existing health datasets from 11-13 October 2011. The training workshop aimed to develop the ability of public health officials to critically assess the quality of data they collect and utilise, and to learn how to compute indicators for use as evidence for health policy.
	Quality and usefulness of the training manual	External/ peer-review	The training manual was peer reviewed by HIS Knowledge Hub staff and experts from UQ. Modifications were made based on the feedback from these reviewers and participant evaluations.
	‘Modules for clinicians to improve clinical decision making through the use of improved health	Quantitative assessment	These were replaced with the work of Dr Tim Adair on improving use of existing data.

	information (especially focused on MDGs 4-6)' finalised and packaged for joint dissemination and delivery		
	Quality and usefulness of the modules	External / peer-review	See evaluations of the Fiji and Samoa training on these tools
	Improved use of health information in clinical decision making (OUTCOME)	Document and review knowledge, attitudes and practices regarding the use of health information in clinical decision making	Will need to undertake evaluation in late 2012/13 through key informant interviews and MSC methods to assess impact
	Development of the PHIN strategic plan and funding proposal for donor country consideration facilitated	Quantitative assessment	A two-day regional HIS workshop was hosted in Fiji on 16-17 August. The workshop was attended by government health representatives and health professionals to launch the PHIN regional HIS strategic plan and discuss implementation strategies to progress HIS in the region. Over 55 participants attended from 18 different Pacific Island countries and territories.
	Quality and usefulness of the strategic plan	External/ peer-review (including PHIN review)	The PHIN regional HIS strategic plan was externally peer-reviewed by the HIS Hub Technical Advisory Group, PHIN Members, Sue Walker and Maryann Wood (QUT), Mark Landry (WPRO). The plan was internally peer-reviewed by the HIS Hub staff and experts from UQ.
	Two fellowships based at the HIS Knowledge Hub from two partner countries	Quantitative assessment	HIS Knowledge Hub awarded two Fellowships from two partner countries; one from Fiji (Mabel Taoi), and one from Sri Lanka (Roland Dilipkumar Hensman). Both Fellows were based at the HIS Hub at UQ during September – November 2011 and undertook a series of capacity building training and activities. A tailored program was created for each Fellow to maximise opportunities including: <ul style="list-style-type: none"> • HIS Short Course at UQ, 3-7 October • AMDIG: Understanding mortality data workshop at QUT, 31 October- 1 November • Mater Hospital medical records site tour
III –	Pilot testing of the resource kit	Quantitative assessment	2012 activity – delayed due to development time being longer

Strengthening vital statistics and cause-of-death data	conducted in two to three countries		than planned. See main text for commentary
	Quality and usefulness of the resource kit	External/ peer-review	As above
	Introduction/ improvement of policy on mortality reporting practices at national and international level (OUTCOME)	Document and review introduction/ changes in the policy in internal notes	As above
	Launch the implementation of the Pacific Vital Statistics Development Initiative	Document and review collaboration activities with SPC, WHO, UNICEF, UNFPA and academics and country partners using terms of reference, meeting minutes, trip reports and email communications	The Brisbane Accord Group (BAG) was established in Brisbane in December 2010 and comprises of representatives from SPC, UQ, UNFPA, WHO, UNICEF, PHIN, ABS, QUT, UNSW and FNU. The BAG convened in April 2011 to identify key areas of work and develop a coordinated approach to regional and country activity plans.
	Quality and appropriateness of collaboration	Document and review collaboration outputs (such as meetings, action plans, reports written, etc.) Use of 'quality standards for convening' in evaluation	A Pacific Action Plan was developed to assist Pacific countries to understand the critical importance of vital statistics on births, deaths and CoDs and thereby to improve their ability, accuracy and use.
	Collaborate closely with UNESCAP/ WHO in implementation of their regional vital statistics initiative	Document and review collaboration activities with UNESCAP and WHO using terms of reference, meeting minutes, trip reports and email communications	The first category workshop as part of the Pacific Action Plan was held in Suva in September 2011.
	Quality and appropriateness of collaboration	Document and review collaboration outputs (such as meetings, action plans, reports written, etc.)	The HIS Hub participated in regular teleconferences and email correspondence throughout 2011 . An evaluation report was produced following the conclusion of the category 1 workshop.
IV – Health information systems strengthening	Establishment of Pacific Paediatrician Group to endorse terms of reference and set guidelines for the project.		The CHIP established terms of reference for the Pacific Paediatric Steering Group. The ToRs were endorsed by the CHIP through the Director of Pacific Health, University of Queensland. This is a continued output from the 2010 work plan.

and maternal child health	Synthesis report on implementation of the process of developing two country case studies and associated workshops held in Samoa and Tonga detailing achievements and risks		A preliminary report on the projects findings was produced in late 2010. A synthesis report on the implementation process was produced (documentation note 7). The report details the findings from the work in Tonga and Samoa.
	Draft and disseminate a set of child health indicators that will be relevant, best practice based, and culturally appropriate for the Pacific Region		A set of child health indicators for the Pacific region were produced.
Objective 3: To effectively disseminate relevant and useful HIS knowledge resources which aim to influence policy thinking at national, regional and international levels.			
I – Essential HIS Investments for Health Service Management	A working paper on the essential health information needs and recommended investments for governance and leadership of a health system for organisational management	Document and review dissemination strategy and how the papers are disseminated using specific characteristics	The working paper (Understanding the role of technology in health information systems) disseminated through (see front page for dissemination key): <ul style="list-style-type: none"> • D1 • D2 • D3 • D6
	Use of the working paper in literature and making (OUTCOME)	Stakeholder feedback through surveys or interviews	Surveys to be conducted in 2012.
	Two to four policy briefs focusing on health information needs of health leaders	Document and review dissemination strategy and how the policy briefs are disseminated using specific characteristics	A Policy Brief on action steps and investment guidelines for strengthening health information systems and a Policy Brief on advocating for investments in your health information system: recommendations for action were developed.
	Use of the policy briefs in policy making (OUTCOME)	Most significant change or other qualitative methodology undertaken to develop assessment for each working paper developed	This outcome has yet to be seen. To be assessed and reported on in 2012.
	A peer reviewed paper on ‘what do health ministers need to know’	Document and review academic dissemination of the	Due for development in February 2012

	A study on health information needs of health ministers and senior health decision makers and best investments to meet HIS requirements for health systems management	peer-reviewed paper	
	Citation frequency of the peer-reviewed paper (OUTCOME)	Use of bibliometrics as an evaluation tool	To be assessed and reported on in 2012/13.
	Presentation to health ministers and senior health decision makers on findings from this product	Document and review presentation activities with Health Ministers and senior decision makers using: trip reports, meeting minutes and email communications	The HIS Knowledge Hub presented at the Pacific Senior Health Officials Network meeting in Cairns. The objective of the meeting was to present the Hub's to PSHON members and stakeholders.
	Quality and appropriateness of the presentation	Use of 'quality standards for convening' in evaluation feedback from Health Ministers and senior decision makers	Surveys to be conducted in 2012.
II – Strengthening and expanding the HIS workforce	An introductory short course on 'HIS' for health managers' finalised and packaged for joint dissemination and delivery	Quantitative assessment	HIS short course delivered at UQ to 27 participants from 14 countries in the Asia-Pacific region
	An introductory short course on 'cause- of- death certification training for physicians' finalised and packaged for joint dissemination and delivery	Quantitative assessment	A short course on CoD delivered at Fiji National University to 9 participants.
	A training manual on 'improving use of existing data' finalised and packaged for joint dissemination and delivery	Document and review how the manual is used	Workshop participants were provided with a manual to assist in learning key concepts and techniques during the course as well as to provide a reference in the future when applying the content to their work.
	'Modules for clinicians to improve clinical decision making through the use of improved health	Document and review how the modules are used	Replaced with work of Tim Adair. Guidelines on how to use and evaluation of use in Fiji and Samoa documented.

	information (especially focused on MDGs 4-6)' finalised and packaged for joint dissemination and delivery		
	Development of the PHIN strategic plan and funding proposal for donor country consideration facilitated	Quantitative assessment	<p>The HIS workshop evaluations were mainly positive. The majority of participants thought the workshop was extremely organised and the information presented was relevant. A full evaluation report was prepared using the participant evaluation forms.</p> <p>The workshop program, presentations, photos and evaluation report were disseminated through:</p> <ul style="list-style-type: none"> • D2 • D3 • D6
	Two fellowships based at the HIS Knowledge Hub from two partner countries	Quantitative assessment Document records of fellowship including program, internal & external training programs, meeting etc.	<p>Two fellowships were awarded in 2011 (Fiji and Sri Lanka). The 6 week fellowships are part of the process for capacity building and workforce development. The fellowships process was disseminated through:</p> <ul style="list-style-type: none"> • D2 • D6 <p>An evaluation survey was conducted following the conclusion of the program period.</p>
III – Strengthening vital statistics and cause-of-death data	Pilot testing of the resource kit conducted in two to three countries	Document and review dissemination strategy and how the tool is disseminated using specific characteristics	This outcome is yet to be seen. To be assessed and reported on in 2012-2013.
	Launch the implementation of the Pacific Vital Statistics development initiative		<p>The Pacific Vital Statistics Action plan was launched in early 2011. Information for the category 1 meeting was disseminated through:</p> <ul style="list-style-type: none"> • D2 <p>A Blog page was developed for participants to provide easy access to the meeting modules and encourage discussion on content.</p>
	Collaborate closely with UNESCAP/ WHO in implementation of their regional	Document and review dissemination strategy	Collaborations with the BAG were achieved via regular teleconferences, email correspondence and face-to-face meetings.

	vital statistics initiative		
IV – Health information systems strengthening and maternal child health	Establishment of Pacific Paediatrician group to endorse terms of reference and set guidelines for the project.	Document and review dissemination strategy	Documentation note disseminated through: <ul style="list-style-type: none"> • D1 • D2 • D5
	Synthesis report on implementation of the process of developing two country case studies and associated workshops held in Samoa and Tonga detailing achievements and risks	Document and review dissemination strategy and how the report is disseminated using specific characteristics	Documentation Note disseminated through: <ul style="list-style-type: none"> • D2 • D6
	Quality and appropriateness of child health indicators	Stakeholder feedback through survey or interviews	This outcome is yet to be seen. To be assessed and reported on in 2012.
	Draft and disseminate a set of child health indicators that will be relevant, best practice based and culturally appropriate for the Pacific region	Document and review dissemination strategy and how the report is disseminated using specific characteristics	Documentation note (Pacific Child Health Indicator Project) disseminated through: <ul style="list-style-type: none"> • D1 • D2 • D3 • D5 • D6
	Quality and appropriateness of child health indicators	Stakeholder feedback through survey or interviews	To be assessed and reported on in 2012.
<u>Objective 4:</u> To expand the HIS capacity of Australia institutions and professionals to participate effectively in evidence informed policy making.			
I – Essential HIS Investments for Health Service Management	Number of countries in the Region amongst targeted countries with the capacity to make allocation of resources and HIS strategic plans according to their HIS needs (OUTCOME)	Document and review planning and resource allocation processes of countries to measure potential for application	To be assessed and reported on in 2012.

II – Strengthening and expanding the HIS workforce	Number of participants attending HIS short course for health managers	Quantitative assessment	HIS short course delivered at UQ to 27 participants from 14 countries in the Asia-Pacific region.
	Number of participants attending short course on CoD certification training	Quantitative assessment	<p>A total of six MBBS students attended to study training in Fiji (WP 16). Further CoD training is scheduled for February 2012 in Fiji based on the pilot test conducted in late 2010.</p> <p>A total of 12 participants; nine doctors and three health officials attended the CoD training in Tonga.</p>
	Number of countries in the region amongst targeted counties with the capacity to conduct data validation an quality assessment of various types of datasets, including mortality data (OUTCOME)	Document and review data validation and quality assessment activities in countries	<p>The training program was developed to provide participants with the knowledge and skills to:</p> <ol style="list-style-type: none"> 1. Understand the key components of a health information system, develop appropriate indicators for health sector monitoring and evaluation and identify potential data sources to compute indicators 2. Compute indicators and assess the quality of a data source using a variety of techniques 3. Fully utilise health datasets in Fiji, to inform decision making in the health sector (more information is available in Documentation Note 15)
	Development of the PHIN strategic plan and funding proposal for donor country consideration facilitated	Quantitative assessment	A regional health information systems strategic plan for 2012-2017 was produced. The goal of the plan is to align HIS stakeholders to a common vision and way forward to maximise investments. The strategic plan includes an implementation plan and work plan for 2012-2013.
	Two fellowships based at the HIS Knowledge Hub from two partner countries		Two fellows in 2011. Evaluations undertaken. Longer term on-the-job assessments of outcome being conducted in 2012

III – Strengthening vital statistics and cause-of-death data	Pilot testing of the resource kit conducted in two to three countries		Product development delayed. 2012/12 activity
	Launch the implementation of the Pacific vital statistics development initiative	Quantitative assessment/ document and review activities	The HIS Hub in collaboration with the BAG conducted a meeting in Suva to Category 1 countries from the Pacific. Representatives from these countries participated in the four day workshop which included training on the use of using the WHO/ HIS Hub Rapid Assessment Tool.
	Collaborate closely with UNESCAP/ WHO in implementation of their regional vital statistics initiative	Document and review activities	The HIS Hub participated in regular teleconferences and email correspondence throughout 2011.
IV – Health information systems strengthening and maternal child health	Number of countries in the region amongst targeted countries with the capacity to calculate child health indicators from various data sources (OUTCOME)	Document and review calculation on how in-country capacity was built	The overall aim of the Pacific Child Health Indicator project is to improve child health in the Pacific through the development of sustainable, useful and reliable child health information. This has been achieved through regular newsletters linking the project findings with stakeholders in the region. Presentation on ‘millennium development goals: are they improving the health of children in the Pacific Islands’ delivered at the PMA conference in Nadi.

Monitoring and Evaluation Framework Report

Objective 1.2: Classification of Knowledge Outputs

Hub Theme	Outputs per theme				
	Literature review / conceptual framework / summary of issues	Development of tool / guide / testing of tool	Specific country assessment – primary + secondary data / country specific recommendations	Comparative assessment / evaluation – identification of generalisable lessons / evidence	Total
Theme 1: Essential HIS investments for health service strengthening	WP 17, WP 18, WP 22 DN 14 Issue Brief (a) Policy Brief (b)				6
Theme 2: Strengthening and expanding the HIS workforce	Issue Brief (b)	HIS Short Course CoD Certification Training	WP 21 DN 13, DN 15		5
Theme 3: Strengthening vital statistics and CoD data	WP 15, WP 16, WP 19 DN 11, DN 12 Policy Brief (a)	Capacity Building Tool: Guidelines for Doctors on CoD Certification DN 16			8
Theme 4: Health information systems strengthening for MDGs	Technical Summary (a) Technical Summary (b) Policy Brief (c)			WP 20, WP 23**	5
					24

***Publications:** List of publications

Working Paper 15 “Advocating for civil registration: guide to developing a business case for civil registration systems”

Working Paper 16 “Improving cause of death certification practices in the Pacific: findings from a pilot study of the WHO web-based ICD training tool”

Working Paper 17 “Understanding the role of technology in health information systems”

Working Paper 18 “Conceptualising the information needs of senior decision makers in health”

Working Paper 19 “Strengthening practice and systems in civil registration and vital statistics: A Resource Kit”

Working Paper 20 “Monitoring health inequalities: measurement considerations and implications”

Working Paper 21 “Improving utilisation of existing data sources for health information: an examination of demographic health surveys”

Working Paper 22 “Essential HIS investments for health service management”

Working Paper 23 “Integrated surveillance systems: getting the most out of health information systems”*** still under-development

Documentation Note 13 “Building the evidence base for health policy: guidelines for understanding and utilising basic health information”

Documentation Note 14 “Analysing parliamentary questions to determine the information needs of senior decision makers in health”

Documentation Note 15 “Training the HIS workforce in Fiji to maximise the utilisation of existing datasets”

Documentation Note 16: “Development of a resource kit for strengthening practice and systems in civil registration and vital statistics”

Policy Brief (a): “Civil registration and vital statistics systems”

Policy Brief (b): “Why strengthen health information systems in the Pacific and how could this be done?”

Policy Brief (c): “Making sense of maternal mortality estimates”

Issue Brief (a): “Why are health information systems important?”

Issue Brief (b): “National use of health surveys”

Technical Summary (a): “Making sense of maternal mortality estimates”

Technical Summary (b): “Pacific Child Health Indicator Project: Information for action”

Capacity Building Tool “Guidelines for doctors on cause of death certification”

Health Information Systems (HIS) Short Course

CoD Certification training

Objective 3: To effectively disseminate relevant and useful knowledge resources which aim to influence policy thinking and practical application at national, regional and international levels

Objective 3.1: Methods of Dissemination / Communication

Table 1

Hub Theme	Communication per Theme				
	Target Audience	Communication Method	Materials Developed	Numbers Reached	Uptake
Theme 1: Essential HIS investments for health service strengthening	Pacific ministers of health, regional agencies, stakeholders	Seminars & presentations, distribution via website, hard copy, CD and USB stick	Two policy briefs focusing on “why HIS systems are important” and “why strengthen HISs in the Pacific and how it could be achieved”, PowerPoint Presentation	Presented to representatives from 15 Pacific Island countries and representatives from 9 donor organisations and development partners attending the ninth meeting of ministers of health for the Pacific Island countries	Health Information Systems declared the highest priority to improve health outcomes in the Pacific
	PSHON, regional agencies, technical experts	Seminar & presentations, distribution via website, hard copy, CD and USB stick	Working Papers, Documentation Notes and Policy Briefs	Representatives from 11 Pacific Island countries and representatives from donor organisations and technical experts	Increase awareness in the Pacific on the importance of HIS for policy and planning. Policy Briefs demonstrate the rationale for decision makers to invest in HIS.
Theme 2: Strengthening and expanding the HIS workforce	MoH, Universities/ Colleges, PHIN members	Short training course Book of readings distributed to participants via hard	Curriculum for a 5-day intensive HIS short course including book of readings	27 representatives from 14 different countries across the Asia-Pacific region	Equip those working in a health system with a broad knowledge of key components of a good HIS. The training improves the skills of the regional workforce which

		and soft copy, CD and USB stick and via online website and short course blog			can be shared with colleagues on completion.
	MoH, public health officials and researchers	Short training course Course material distributed via hard copy and USB stick	A training manual on improving the use of existing datasets	Over 10 representatives	Develop skills and knowledge to utilise existing datasets better. The training develops countries ability to critically assess the quality of data they collect and utilise and how to compute indicators for use as evidence for health policy.
	MoH, HIS stakeholders and professionals, partner organisations, AusAID, PHIN members	Regional HIS workshop Workshop materials distributed via hard copy and CD. Presentations distributed via USB stick and website	Regional Pacific Health Information Systems Strategic Plan	Over 55 representatives from 18 different Pacific Islands countries and territories	Align HIS stakeholders to a common vision to maximise investments in HIS in the region. The framework for action provides 6 strategic action points and key activities for the regions over the next 6 years.
	MoH, HIS professionals	Capacity building fellowship program Program distributed via soft and hard copy, CD and USB stick	Tailored program to maximise opportunities including training courses at Australian institutions and site visits	Two representatives from the Asia-Pacific region (Fiji and Sri Lanka)	Build the capacity of HIS professionals in the region through networking, training and mentoring.
Theme 3:	Public health	CoD certification	Guidelines for doctors	Training conducted to over 20	Increase the accuracy of

Strengthening vital statistics and CoD data	sector staff, private health sector staff, hospital staff, medical students	training Course materials distributed via hard copy, CD and USB stick	on CoD certification	medical doctors, clinical staff and HIS professional from the MoH in Tonga	death certification to improve the quality of national and international mortality statistics for health policy and planning.
	MoH, health statistics & civil registration offices, stakeholders and partner organisations	Regional category 1 workshop Workshop material distributed via hard and soft copy, CD, USB stick and online workshop blog	Pacific Vital Statistics Action Plan was developed to assist Pacific countries to understand the critical importance of vital statistics on births, deaths and CoDs and thereby to improve their ability, accuracy and use	The category 1 workshop reached over 15 representatives from Fiji, Tonga, Samoa and Nauru	Improve vital statistics in the region using the WHO/HIS Hub Rapid Assessment tool. The strategy will reduce the number of countries in the Pacific with weak or incomplete civil registration and vital statistics.
Theme 4: Health information systems strengthening for MDGs	PHIN members, PMA members, stakeholders/ partner organisations, directors & secretaries of health, AusAID	Seminar & presentations, distributed via hard and soft copy, CD and USB stick	PowerPoint presentation, newsletter, Working Paper, Documentation Note and Issue Brief	Presented to over 350 representatives attending the PMA workshop and Regional HIS workshop	Strengthen regions commitment to the implementation of MDGs with a focus on 4 & 5. PICTs urged to give priority to the collection, collation, utilisation and storage dissemination of health information as an integral component of health care systems strengthening in the region.