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Human Resource Information Systems Assessment

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TABL E OF C ONTE NTS

AC RONY MS

AHW Auxiliary Health Worker

ANM Auxiliary Nurse/Midwife

CTEVT Council for Technical Education and Vocational Training

HRIS Human Resource Information System

HuRIC Human Resource Information Centre

HuRIS Human Resource Information System

LATH Liverpool Associates in Tropical Health

MCHW Mother and Child Health Worker

MoF Ministry of Finance

MoGA Ministry of Government Administration

MoHP Ministry of Health and Population

NHTC National Health Training Centre

NHSSP Nepal Health Sector Support Programme

PIS Personal Information System, Ministry of General Administration

PSC Public Service Commission

VHW Village Health Worker

EX ECU TIVE SU M MARY

The purpose of this consultancy was to explore the availability of human resource information so that a human resource plan could be produced as a deliverable of the DFID Nepal Health Sector Support Programme. This entailed reviewing the health sector human resource information system (HuRIS) managed by the Ministry of Health and Population and the Personal Information Systems (PIS) managed by the Ministry of General Administration for all public sector employees. Workforce challenges were also explored with respondents in order to identify the issues to be addressed by the workforce plan. Fifteen interviews were conducted with respondents in the Ministry of Health and Population (MoHP), regional, district, Pokhara Hospital and Patan Hospital, Kathmandu.

The main findings and recommendations are as follows:

Main findings

1. National statistics on staff numbers are not collected and reported on a routine basis. The only information of this type was found in an occasional report, which made identifying trends in staffing difficult, due to inconsistent classification of staff categories. Therefore an essential monitoring tool is missing.
2. The MoHP obtained national workforce data from regions rather than use HuRIS.
3. HuRIS information is incomplete and it understates joiners and resignations.
4. The Personal Information System is being massively upgraded to become a fully functioning Human Resource Information System (HRIS) and it will become the paperless process for HR administration.
5. The PIS database is being validated by examining every personal file in the registry.
6. The PIS standard reports are designed to be run locally and new reports will be written by a programmer to meet user needs.
7. The region, district and hospital visited all produced useful workforce reports on sanctioned and filled posts and vacancies.
8. The reports reviewed were not illustrated by charts, which makes it harder to identify the key issues. This may be due to the limited use of Excel, which has powerful analytical and graphic functions.
9. Professional councils are approached for letters of good standing by staff wanting to work abroad.

Recommendations

1. The PIS should produce the information and this should be compared with regional information for validation purpose
2. If the PIS can produce accurate workforce reports, given that HuRIS currently has out-of-date, inaccurate and unreliable information, a decision needs to be made whether it should continue and if so in what form.
3. A link between PIS and HuRIS should only be written if PIS fails repeatedly to meet MoHP needs and then supported by a business case.
4. The provision of routine workforce information on a regular basis should take priority over the production of a workforce plan. However, the plan would benefit directly from this data collection exercise.

5. A community of interest for workforce issues should be created to help interpret workforce information and assist in developing plans and designing monitoring frameworks. Regions should submit workforce reports to the MoHP annually, of sanctioned and filled posts and vacancies, for the main staff groups at the same date each year. The draft form in Annex 1 should be taken as a starting point.
6. Workforce information should be updated each year and a time series produced to show changes year by year.
7. In order to monitor initiatives to improve staff retention of doctors and nurses in rural areas, vacancy figures should be monitored on a monthly basis, once it is possible to do so using an HRIS. After a period of time, this can be reduced to a frequency of every three months.
8. The number of staff resigning or retiring should be collected by staff group, on an annual basis.
9. Age profiles, by staff group should be produced. This should be produced for doctors, by specialty in the first instance, as they take much longer to replace due to the duration of their training programmes.
10. Training should be provided in analysing workforce information and the use of Excel's spreadsheet and graphics functions.
11. The number of newly qualified staff graduating for each profession should be collected each year.
12. Professional councils should be asked to notify the MoHP of how many requests they have received for letters of good standing. Training should be provided in analysing workforce information and the use of Excel's spreadsheet and graphics functions.
13. An annual report on all HR Information should be produced.
14. Workforce information should be published on the MoHP website.
15. An additional member of the MoHP should be identified and given the lead responsibility for workforce planning and developing new roles alongside the Undersecretary and Joint Secretary HR.

I NTROD UC TION

An assessment of Human Resource Information Systems with a view to supporting a future workforce plan and a workforce monitoring framework that any plan would require was carried out by George Blair (LATH consultant) with the assistance of Bill James (LATH NHSSP HR Adviser).

A review was undertaken of workforce information produced at ministerial, regional, district and hospital levels along with the Human Resource Information System (HuRIS) at the Ministry of Health and Population (MOHP) and the Personal Information System (PIS) covering the whole Civil Service, including Health and Population. A total of 15 interviews (see Annex 5) were conducted with respondents in the MoHP, regional, district and hospital staff at Pokhara. A presentation was made of the findings from these interviews and points from the ensuing discussion have been included this report.

BAC KG ROU N D OR C ONT EXT

A strategic Human Resource Plan needs to address the key workforce issues that an organisation faces.

The key issues that have been identified to be addressed in the NHSSP workshop with MoHP counterparts in November 2010 (Martineau & Subedi) were:

1) Shortage of HRH – imbalance between supply and demand
2) Maldistribution of staff – especially in remote and rural areas
3) Poor staff performance (productivity, quality and availability)
4) Fragmented approach to human resource planning, management and development
5) HRH financing.

These issues are to be addressed by the following, which have been taken on board by the Joint Secretary of Human Resources and Financial Management Division (Martineau & Bista, Milestone 7: Periodic review on the development of the HR Plan, 2011):

The plan will be for four years to coincide with the end of the National Health Sector Plan - 2 (NHSP2).

Both public and private sectors should be included in the plan, but it should be clear which strategies relate to which sectors.

While the problem analysis may have led to a different structure of strategies, these should be clearly related to the common HR areas of recruitment, retention, training, etc.

The HRH plan should be fully aligned with NHSP2 which already includes a number of HR strategies and many other strategies that need to be supported by the HR strategy.

To address the workforce information aspects of these issues requires the regular monitoring of vacancies by occupation and geography, which is best done by a reliable human resource information system (HRIS). This will enable the effectiveness of the recruitment and retention initiatives to be measured. In addition, the workforce plan needs to ensure that there is an adequate supply of newly qualified staff.

OBJECTIVE

The overall objective of the consultancy was to support the components of the HRH strategic plan that require workforce data – in particular, the workforce planning exercise – in order to improve the effectiveness of the current health workforce across the health sector. The specific objectives of the consultancy were, working with MoHP counterparts and the NHSP-2 HR Adviser:

1) To assess future data requirements for human resource planning management and development in the public sector;

2) To identify the capability of the MoHP HuRIS, the National Health Training Centre's Training Information (Management) System (TIS), the MoG 's PIS systems, and any other relevant health workforce databases to meet these data requirements; and

3) To recommend further work to ensure accurate health workforce data is available and accessible to support the planning management and development of the workforce.

FINDINGS AND ANALYSIS

This section covers:

- A review of Human Resource Information Systems: HuRIS, the Personal Information System (PIS) and the Training Information System (TIS).
- Availability and usage of workforce information.
- Workforce issues that were of serious concern to respondents that should be tackled before a Human Resource Plan is produced.
- Workforce information required to support a workforce plan – Annex 2.
- An analysis of Human Resource information readily available at region and district and workforce issues the HR Plan should address relating to staff shortages. This is provided in Annex 3.

HUMAN RESOURCE INFORMATION SYSTEMS

This section compares and contrasts an HRIS that performs administrative and management information functions with one that is dedicated to management information. This is followed by a review of the four databases: HuRIS, Personal Information System and the Training Information System and a hospital HRIS.

Types of HRIS

A very comprehensive HRIS can perform a variety of functions such as performing administrative tasks, for instance replacing the personal paper file, because of speed and ease of access. The database would include a full record of personal details, education and training, sickness and absence, disciplinary issues. There would also need to be a post (jobs) module, reflecting the organisation's hierarchy. When a person is appointed to a post, their record would be linked to it. In addition, an HRIS can be linked or integrated to a payroll system. Validation is improved as a by-product linking to a payroll system, because staff are quick to raise any errors printed on their payslip, such as being linked to the wrong post.

This wealth of data can be an excellent source of management information, provided there is a large number of easy to use, standard reports. When new reports are required, these can only be supplied with someone with a much higher level of skill in programming a query language. Once such a report has been written, it can be added to the menu of standard reports. This programming resource needs to respond to requests for new reports in a couple of days, if confidence is to be retained in it as a source of management information.

On the other hand, an HRIS can be used entirely as a management information system (MIS), without performing administrative functions. In fact, such as system is best called an HRMIS. Headquarters or ministries use them for monitoring and planning purposes. Local users are required to supply data upwards, often as a result of a large, manual data gathering exercise. Often, this is the first HR database to be established in a healthcare system, as there may not be other computer databases to feed it. This, nevertheless, is a big step forward compared with having no national data at all. However, they tend to get out of date quite quickly, as local users are either unwilling to update them or only do so intermittently, leading to under-reporting and out-of-date information. This behaviour is difficult to police, even in highly disciplined bureaucracies.

Having made this distinction between two different types of HR information system, descriptions of the main systems currently being used in Nepal are provided followed by a discussion comparing and contrasting them.

Recruitment and Transfer Administration

Recruitment is undertaken by the Public Service Commission, except at the junior levels, e.g security staff, cleaners, etc. The Ministry of General Administration (MoGA) is the human resource arm of the Government of Nepal. Within MoGA the Department of Civil Personnel Records (DoCPR) keeps all records and information of the 87,000 government employees (with the exception of teachers, police, paramilitary and armed forces). Health staff who work in the army and police hospitals are therefore not included in PIS employee records.

The initial entry of all the details of the employee (any public servant) is carried out by Department of Civil Personnel Records (DoCPR). Now, DoCPR has signed a memorandum of understanding with different Ministries and Departments; thus subsequent updates to the personnel records can be made either by DoCPR or the concerned Ministry/Department.

The posting and transfer authority is delegated to line ministries. Further delegation within the structure of the line ministry is dependent on staff grade, as shown below:

Table 1: Posting and Transfer Authority by Level of Institution within the MoHP

Institutional level	Grades
MoHP	>7
DoHS	6-7
Regional office	4-5
District office	1-4

H uRI S

Background

GTZ provided Technical Assistance to support HuRDISH (later known as HuRIS) from 1993 to 2007. HuRIS, which is located in the MoHP, was upgraded about four years ago to Oracle to enable districts to enter data by remote data capture using the Internet. This is a very widely used standard, international database, which is particularly suited to a huge HR database for a large number of employees There were no problems reported with computer down-time. The database includes all employees of the MoHP. It does not include healthcare staff working in army, police and civil service hospitals, or those employed in the private sector; this is equally true for PIS. HuRIS is networked to the District Health Office, where trained operators (see below) are expected to keep it the HR date up-to-date.

The database holds an extensive amount of information including:

- Personal details
- Education and training
- Posts
- Institutions, locations and resources (numbers of beds)

A member of staff on a temporary contract based in the MoHP updates the database with regard to staff transfers, when such information is received. He also produces selected reports; an example of a report is shown in Table 2.

Transfers

In order to provide an accurate picture of staffing of health facilities, all correspondence relating to transfers should be received promptly so that the records could be updated. This does not happen on some occasions, which results in the database assigning two people to the same post, when this is not the case, as the new person has merely replaced someone who is no longer there. This is periodically chased up, but there can be legitimate reasons for this as well. For instance, when a post is held open for someone transferred to elsewhere, their name is held against this post, as is that of the person who is temporarily occupying it.

District Users

Staff in 73 out of 75 districts were trained in entering data into HuRIS. Some trained staff were moved to posts that do not require this training and their replacements are untrained and therefore do not use the system. Districts can run reports, but do not do so. Therefore, it seems that the system was designed to prov ide management information to the Ministry, without giving enough direct benefits to districts themselves. This means that districts have little incentive to keep it up-to-date. There is no e-mail facility to communicate between the HuRIS with district staff, which slows down communication.

Reports

There is a range of standard reports on filled posts, by staff group, by institution and training undertaken. Charts are produced in Excel. In addition, reports by location and institution are available on the website http://www.e-huris.gov.np. This seems to be geared to users at institution or district level. There were no reports providing national summaries as in the following Table 2. Nevertheless, this open approach to sharing information is praiseworthy.

Links to other systems

There used to be a link between HuRIS and PIS, which compared both databases and produced a report highlighting mismatches and then corrections were made to HuRIS. According to a respondent in the National Health Training Centre (NHTC), it is planned to re-establish this and to link with the NHTC database, the Training Information System (TIS). However, no indication was given about how far these plans have progressed.

Data validity

report in 2009 opined that "HuRIC *Human Resource Information Centre+ figures are a serious concern" (Kolehmainen-Aitken, 2009) and this was echoed a year later that "the present human resource information system HuRIS is not up-to-date and is believed to contain only three-fourths of the total personnel (Ministry of Health and Population, 2010)."

Table 2: MoHP staff in Sanctioned Posts, Appointments and Resignations

	2006	**2007**	**2008**	**2009**	**2010**	**2011**
Number of Staff at the start of the year	24539	24774	24906	24945	25189	25313
New Appointment	235	132	39	244	124	13
Retirement at the start of the year	**44**	**57**	**87**	**165**	**314**	**472**
Other losses:						
Voluntary	9	12	40	85	61	9
Forced With Facility	2	1	1	2	0	0
By Age	1	16	30	58	80	31
By Service Period	1	0	0	0	0	0
Deceased	0	0	7	4	17	4
Pending Transfer Employees	0	0	0	0	0	21
Forced Without Facility	0	1	0	0	0	0
Pending Retired Employees	0	0	0	0	0	12
Total	13	30	78	149	158	77
Actual Staff at the end of the year/till date	**24717**	**24819**	**24780**	**24875**	**24841**	**24777**
Promotion	2231	1986	237	481	116	10
Training	191	199	62	62	35	1

Source: HuRIS August 2011

Table 2 suggests that HuRIS data are incomplete. For instance, there were 124 new appointments in 2010, which represents 0.49 per cent of the workforce, and exits and retirements (472) represent 1.29 per cent of the workforce. Such a small number of retirements would only be typical of a relatively new organisation that only recruits young people, not a long-established organisation like the MoHP.

Suggested improvements

The HuRIS team suggested that a career planning module should be written so that staff could know where they will be working over the next five years. However, there would need to be a defined and transparent career planning system to be in place and working effectively for this to be a useful development. There is also an issue of duplicating Personal Information System functionality in the near future when the Ministry of Government Administration (MoGA) database will be 100% complete and live (see below).

Private Sector Healthcare workforce information

A data collection form has been designed to obtain private sector healthcare workforce information. However, contact has not yet been made with the sector.

Personal Information System

The Personal Information System (PIS), managed by MoGA, was originally an Access database for the whole public sector. It has since been upgraded to a fully functional Endeavor HRIS database, using Oracle 9i and Redhat Linux, sitting on two units of HP servers (www.endeavohr.com). This has the huge advantage of remote data capture and reporting, using the Internet. It is being implemented with WorldLink Technologies, one of the largest software companies in Nepal. The HRIS contains: personal details, education and training, appraisal, transfer, promotion, disciplinary action, post, location and employment base. The post management module is an integral part of the system and manages all posts in a hierarchical structure, which are then linked to the person holding it.

The PIS is a civil service wide system, which is being devolved to individual ministries and their centres of employment to support the main aspects of human resource administration. For instance, home leave has been added to the database at the request of users, while it is not needed for central administrative purposes. The operator selects whether to have screens in Nepali or English.

A major validation exercise is taking place and every personal file is being examined so that PIS can be updated. The paper files are then given a racking location code, so that they can be easily retrieved, if required. This exercise should be completed towards the end of 2011. However, this should not delay obtaining reports on filled and unfilled posts by staff group, as the updating focuses more on personal details and training information.

PIS caught the attention of The Himalayan Times, in an article, “Government staff records to be made paperless (Pokharel, 2011).” ll correspondence will be through the system and paper records will only be used for court purposes. Most functions will be delegated to users at district level. Newly retired staff currently have to visit Kathmandu to collect their documentation. In the future, this will be issued at the place of work on their last working day. A smartcard issuing system is being set up and these cards will be used for automated timekeeping purposes to manage attendance.

There is a library of standard reports, which users are taught to use. There is a simple menu which allows users to select reports at country, region, district and institution level. A computer programmer will write new reports on request, which then are added to the standard report library. Training has just been given to key people at the Ministry of Health, both at a senior level so that an appreciation of the system can be gained and also at a more junior level for routine functions. It will then be rolled out to regions and districts for use by both MOHP and MoGA personnel.

Work is taking place on implementing an integrated payroll module. It maintains the payscale, pay, grade and gratuity amounts, and pay history from the start of an individual's employment in the Civil Service. The Department provides payroll reports used by each of the 8,500 government offices. The module has financial planning and modelling capabilities. The complexity of yearly incremental pay, which differs by grade of staff and when they were appointed is delaying this work. However, when this is implemented, it will result in the data being more accurate, as any errors in pay are likely to be taken up by those adversely affected.

The pensions and family pensions module keeps track of retiree information like former ministry, department, office and ministry. This is captured along with information on payscale, grade, etc. The system automatically calculates the pension. It also generates a pension passbook and letters to the Pension office. It is also planned to flag retired staff who would be interested in working for NGOs.

The MoGA staff implementing PIS and those in the file registry are paid by a performance based incentive system, which means that if they meet all their output based targets, they would receive a bonus of 150 per cent of their salary. For instance, validating 3,000 files a month is worth a 70 per cent bonus. The best performers have received 130 per cent. This has resulted in higher productivity, which when coupled to automating manual processes through PIS will enable the establishment of 65 staff to be reduced by 20 per cent a year for at least two years. The performance based incentive system will continue after the PIS has been rolled out and will be implemented more widely. New targets are set when previous ones have been achieved or are no longer relevant.

There is a good supply of potential recruits with IT skills. However, it is acknowledged that Civil Service rates of pay are not competitive. A MoGA respondent stated that it is proposed to introduce higher rates of pay and a new career structure for these staff.

In order to get a better idea of the type of information PIS could supply, the author requested information on the main staff groups. Information was provided on only four of them (see Table 3 below). However, information on doctors, nurses and other staff is to follow, but was not available in time for this report. The information request could rightly not be given a high priority, as this needs to be given to system testing and implementation.

Table 3: Filled Posts

Occupation	Filled Posts
Auxiliary Nurse Midwife	1,963
Auxiliary Health Worker	4,264
Village Health Worker	2,238
Mother and Child Health Worker	2,333
Total	**10,798**

Source: PIS

Comparison between HuRIS and PIS

The fundamental difference between HuRIS and PIS is that HuRIS does not perform an administrative function, while PIS does. This means that PIS will be kept up-to-date, because this will be the only way that staff can administer employee records. On the other hand, HuRIS has no such function and therefore it will always be a challenge to keep it up-to-date. This is an inherent problem of all Management Information Systems that are not based on operational systems. A comparison of the key features and issues is given in Table 4 below.

Table 4: Comparisons between HuRIS and PIS

Feature/Issue	HuRIS	PIS
Scope	Health only	Whole civil service
Type of database	Oracle	Oracle
Remote data capture using internet	Yes	Yes
Administrative/operation role	No	Yes
Validation exercise	No	Yes
Data accuracy	Questioned	Yet to be established
Standard reports for workforce statistics	Yes	Yet to be written
Ad hoc reporting expertise available	Yes	Yes

When PIS was more limited in scope, it made sense for the MoHP to operate HuRIS. However, this situation has now changed significantly with the enhancement of PIS. Therefore the next step is to test the new PIS and see whether it meets MoHP needs. If it does, then this poses the question of why continue with HuRIS? If PIS does not meet MoHP needs, then can it be sufficiently improved? MoGA staff said they were very committed to meeting user needs, so there is no lack of willingness to make the necessary changes or enhancements.

Recommendation 1: The PIS should produce the information on posts and filled posts, by staff group and region and this should be compared with HR data at the Regional Health Directorates for validation purposes.

However, using PIS instead of HuRIS would not mean that it is proposed to reduce MoHP's role in the provision of workforce information and planning. This is because it is recommended to undertake a much more extensive workforce information data collection and dissemination exercise (see the Availability and Use of Workforce Information section). As in the case with the HuRIS team, this would require both a senior civil servant to provide leadership and someone skilled in the use of HR databases and Excel to undertake the analysis, based in the MoHP.

Recommendation 2: If the PIS can produce accurate workforce reports, given that HuRIS currently has out-of-date, inaccurate and unreliable information, a decision needs to be made whether it should continue and if so in what form.

If, however, MoGA fails consistently to meet MoHP needs, then the option of feeding PIS data into HuRIS should be evaluated. The cost of writing this interface and maintaining HuRIS would need to be weighed against the extent of any PIS shortcoming and its consequences to MoHP.

Recommendation 3: A link between PIS and HuRIS should only be written if PIS fails repeatedly to meet MoHP needs and then be supported by a business case.

Training Information System

The National Health Training Centre's Training Information System (TIS) is an Oracle based system. It is not fully utilised currently, as operators are being trained to replace those who been transferred elsewhere. Paper records are used instead. Discussions are taking place with consultants about adding additional fields and forms. The NHTC is working with a pilot district to help them capture their training provided locally. It is also intended to link TIS and HuRIS. Some developments are dependent on high level financial approval.

It has been reported that people sometimes attend the same course twice. With a properly function ing TIS, this waste of training resource and staff time could be avoided. Investment in training is also lost due to inappropriate transfers where new skills cannot be used. With a link between TIS and a personnel database (either HuRIS or PIS), this problem may be avoided. It would also offer NGOs and other organisations economies by dispensing with the need for an individual training database for each project.

Hospital HRIS

Patan Hospital was founded in 1982 as a Christian mission hospital and has evolved into an independent, secular hospital with its own Board of Directors. It provides care regardless of patients' ability to pay (About Patan Hospital). It has become a teaching hospital under the Patan Academy of Health Sciences. It has 450 beds, of which 388 are currently in use, and 735 staff.

It is introducing an integrated hospital cost, activity and staffing information system. The latter will be recorded in an integrated human resource and payroll system. The new system will enable much more frequent reporting of key indicators. There is no separate Human Resources (HR) function and this activity is carried out by the Administration department. HR data is entered in the Records department.

Access to the information system will be via a smartcard, which will limit users only to those functions and fields that they need to undertake their responsibilities. This system will not be used to monitor time-keeping, as staff adhere to the hospital philosophy of employees taking responsibility themselves for their own conduct. Doctors and nurses will also enter patient activity data. So far staff have responded positively to the new system and some older staff are learning IT skills from younger family members before formal training is provided. A full training programme will be run shortly.

Once this system has been successfully implemented, the software vendor will no doubt seek to sell it more widely in Nepal. This means that there will be scope to design a feed into a national HRIS database. This would reduce duplicate data entry, saving time and money.

THE AVAILABILITY AND USAGE OF WORKFORCE INFORMATION

This section sets out the workforce information needed for routine monitoring and workforce planning purposes. This is followed by a review of the extent to which workforce information is used nationally, regionally, in districts and in institutions. Recommendations are made regarding additional HR information that should be produced and disseminated. A case is then made for a senior civil servant to lead HR planning and the collection and dissemination of HR information.

Information Needed for Workforce Monitoring and Planning

The first workforce information priority of large complex organisations such as healthcare is to provide workforce information on a routine basis, which enables them to monitor their progress. This should take priority over the production of a workforce plan, because without this, it is not possible to monitor how effectively the plan has been implemented. Without this foundation, there is a danger that the plan will be seen as a one-off exercise that will sit on bookshelves.

Workforce monitoring provides regular information to managers and other decision makers so that they can review the impact of their HR policies and how they have been implemented, such as reducing vacancies in staff groups or unpopular locations. It also gives an indication of the likely impact of changes in staff numbers on health delivery. For instance, the Western Region Health Directorate Annual Report points out that the large number of Village Health Worker vacancies will make achieving national immunisation programme targets problematic. Monitoring should also include historic trend information, so that it is possible to see how the numbers of staff, say doctors, have changed over the last decade and how this compares with the level of healthcare activity (patient numbers) and total population. Resignations (voluntary attrition) are another factor to include in routine monitoring, as this will be a key influence on the number of newly qualified replacement staff that will be required.

Age profiles are of particular importance when education and training replacement cycles are lengthy, such as in the case of hospital consultants. Another example of when this is important to monitor is when a large age cohort has been recruited at the same time, as they will retire together in large numbers. This was reported to be the case for Village Health Workers.

To summarise, routine workforce monitoring should consist of at least 3 items:

- Sanctioned and filled posts and vacancies, by staff group
- Resignations over a year, by staff group
- Age profiles by staff group.

A workforce plan explains how to fill the gap between the future demand for workforce and the staff who will then be in post. Future demand is the number or staff needed in a particular year. If no change is forecast, this will be the same as the current number of sanctioned posts. However, this may not be the case due to technological change, such as using more scanners, which creates the demand for more radiographers. On the other hand, technological change can also reduce the demand for staff, for instance when computers are introduced.

Another factor influencing future demand is skill mix. This is the balance between different skill groups. An example of this would be replacing some Village Health Worker posts with those of a more skilled Auxiliary

Health Worker. These issues would need to be explored with reference to a healthcare plan and with a wide range of professional inputs that could be obtained from a series of workshops.

The future demand then needs to be compared with how many staff of that type would be in post at that time. This requires the number of current staff and a forecast of resignations and retirements. This, ideally, requires several years of historic data on resignations to identify trends. The number of resignations or what workforce planners call voluntary attrition is measured over a year and is also used in routine monitoring reports.

A comparison is also required between their current skill levels and those required in the future, with the gap being made up by a training plan. The number of staff in each main staff group is the most important routine monitoring measure and should be monitored annually at the same date each year.

National Workforce Information

Little use is made of staffing information in national documents. There is no regularly published information on numbers of staff, resignations, age profiles and newly qualified staff, by staff group. This means it is not possible to assess the impact of measures to improve recruitment and retention or to assess the impact of losses of doctors and nurses to employment overseas. Workforce information was found in occasional, ad hoc reports produced by donor exercises. For instance, there are some detailed figures in a 2003 report, but these have not been updated. A report published in 2010 (Ministry of Health and Population, 2010), uses three year old data on staffing. Given the large growth in population and consequently in the demand for healthcare, this shortcoming is particularly concerning.

Table 5: MoHP Sanctioned Filled Posts, by Occupation

Occupation	2003	2007	2011
Doctors	1182	816	1092
Public Heath			4251
Indigenous HP			782
Nurses	2518	5307	6540
Paramed/AHPs	9212	7588	
Admin/support	9600	7063	
Other	13416	6394	
Total	26716	21729	27316

Sources:
2003: Strategic Plan for Human Resources for Health, 2003, Table 3, Page 18 (Hornby P, 2003)
2007: Annual Report DoHS, 2007/08, quoted in Nepal Health Sector Programme Implementation Plan II (NHSP-IP2) 2010 – 2015
2011: Regional Health Directorate information submitted to HuRIS Team

Table 5 above was compiled from a variety of sources, making consistency problematic. For instance, Public Health posts are separately categorised in 2011, but not in previous years when they could be included under another staff group heading. The 31 per cent fall in the number of doctors between 2007 and 2003 is very large. Could this be because Public Health Officers were included under doctors in 2003 but counted as under Public Health in 2011? If such a decline did really take place, it would have resulted in a huge increase in workload for the remaining doctors and a substantial worsening of patient healthcare. Indeed, there were apparently fewer doctors in 2011 than 2003, in spite of an increase in 2011 over 2003 levels shown in Table 5, using published data. On the other hand, the number of nurses apparently

doubled over the four years between 200 3 and 2007. It is essential to validate such large changes in staff numbers before they are accepted, which may otherwise be due to incomplete data. In order to rectify the problem of occasional information, using inconsistent staff group classifications, it is essential that definitions are agreed and reports provided on a regular basis.

Recommendation 4: The production of workforce information on a routine basis should be established before a workforce planning exercise is undertaken.

Regional Health Directorates (RHD), districts and health institutions routinely produce workforce information on sanctioned, filled and vacant posts and vacancy rates. This is used to plan and monitor recruitment. The Western Region produces this information twice annually along with a workforce report on issues, actions and accountabilities. For instance, the Annual Report of the Western RHD highlights the districts with the worst shortages and also on shortages in staff groups such as Public Health Officers and warns that the large number of MCHW and VHW vacancies will lead to problems in implementing the national immunization programme. Other issues raised include the problems of frequent staff transfers and inadequate training for administrative staff.

The supply of workforce information for monitoring purposes needs to be supported by an interpretation of the main findings. This can best be done by MoHP staff working closely with Regional Health Directorate staff and district colleagues, as each tier of healthcare has its own perspective which needs to be integrated together. These staff could also provide valuable guidance in developing plans and designing monitoring frameworks. Therefore, it is important to build a community of people with an interest in workforce issues from these three tiers and also from the professions. This community of interest can be encouraged and re-inforced by workshops, which include participants from regions and districts.

Recommendation 5: A community of interest for workforce issues, including participants from regions and districts, should be created to help interpret workforce information and assist in developing plans and designing monitoring frameworks.

Workforce information on staff numbers should be requested from Regional Health Directorates for the same date each year in order to provide trend information on a consistent basis, until this can be provided from another source such as PIS. An annual census date should be used and this information published to assist in monitoring and research. This should be at a time of the year that is more typical than most, avoiding national holidays.

Recommendation 6: Regional Health Directorates should submit workforce reports to the Ministry of Health and Population annually, at the same date each year of sanctioned and filled posts and vacancies for the main staff groups. The draft form in Annex 1 should be taken as a starting point.

Recommendation 7: Workforce information should be updated each year and a time series produced to show changes year by year.

A future fit-for-purpose HRIS would produce reliable workforce statistics. It should be used to monitor MoHP initiatives, such as improved recruitment and retention in rural areas, which is one of the key issues to be addressed by HRH strategic plan (Martineau & Bista, Milestone 7: Periodic review on the development of the HR Plan, 2011). This could be done by categorising the latter separately and comparing

their figures with urban areas. Vacancies could be monitored on a monthly basis in the first instance and then quarterly when monitoring has become well-established.

Recommendation 8: In order to monitor initiatives to improve staff retention of doctors and nurses in rural areas, vacancy figures should be monitored on a monthly basis, once it is possible to do so using an HRIS. After a while, this can reduce to every three months.

In order to provide the information on workforce stocks and flows, information is needed on staff resignations and retirements, along with an age profile, by staff group so that future retirements can be forecast. It is not enough to monitor doctors as a single category, as there a numerous different specialities, each of which should have separate plans, reflecting their priority in healthcare plans and any particular problems in supply, either currently or in the future. Therefore, more detailed information should be collected regularly on doctors showing the numbers of sanctioned and filled posts by speciality.

Recommendation 9: The number of staff resigning or retiring should be collected by staff group, on an annual basis. This should be produced for doctors, by specialty in the first instance, due to how long it takes to replace them because of the duration of their training.

Recommendation 10: A report on age profile, by staff group should be produced annually. This should be produced for doctors, by specialty in the first instance, as they take the longest to train.

Information is produced by HuRIS from manual returns that are typed in Word and, in some cases, Excel. No use seems to be made of charts, which make statistics easier to understand. Occupations are listed in grade order. This means that clinical and non-clinical roles are mixed together, which makes information harder to analyse. A draft alternative can be found in Annex 1. This points to the need to provide training in a module covering analysing workforce information and using Excel's spreadsheet and graphics features. This could include the workforce tools and techniques set out in Annex 2.

Recommendation 11: Training should be provided in analysing workforce information and the use of Excel's spreadsheet and graphics functions.

Information on Training

There is no central collection of data on the number of newly qualified staff graduating each year in the main staff groups. This information on the potential supply of staff is essential for workforce planning.

Recommendation 12: The number of newly qualified staff graduating for each profession should be collected each year.

The annual intake to nursing training programmes was 1,310 in 2007/08 (Kolehmainen-Aitken, 2009). This is an example of the information that needs collecting annually. Information on upgrade and refresher training can be found in the DoHS Annual Report (2009/10). For instance, 59 Mother and Child Health Workers were trained to become Auxiliary Nurse and Midwives. The Council for Technical Education and Vocational Training provides information on its affiliated campuses.

Information on Private Sector Healthcare Workforce

Information on the size of the private sector healthcare workforce can be deduced in some countries by subtracting public sector data from professional registers. This means that professional registers show all those registered, including those who have gone abroad, are no longer employed in healthcare, retired and even died. However, this only works when the data is updated regularly where re-registration in mandatory. This is not the case in Nepal.

In order to obtain an understanding of the dynamics of attrition of the flow of healthcare staff leaving to work abroad, professional councils should be asked to record the number of requests they receive for letters of good standing, as this is required by those leaving to work abroad. However, some requests are also made from practitioners who remain in Nepal, making this an imperfect measure.

Recommendation 13: Professional councils should be asked to notify the Ministry of Health and Population of how many requests they have received for letters of good standing in order to understand the impact of migration.

Asking private healthcare organisations for their staffing statistics tends not to be very successful, as their attitude tends to be "what's in it for us?" in supplying this information. As the MoHP has no detailed and reliable published data on its own staff, it is even more problematic to ask the private sector for information, as there is no benefit to them in providing this.

Table 6: Summary of Workforce Information Requirements

Report	Source	Comment
Sanction and filled posts and vacancies, by occupation, by region and nationally	Regions. In longer term: HRIS	Immediate action: critical for monitoring Ministry plans. Agree content, format and annual date with Regional Health Directorates.
Time series by occupation	**Derived from above**	**Needs a minimum of two periods of data**
Age profile of doctors, by specialty	**HRIS**	**Important to plan training long in advance**
Age profile, other main staff groups	**HRIS**	
Resignations and retirements	**HRIS**	
Education and training newly qualified	**NHTC;** CTEVT;Professional Councils	

Information on Workforce Demand

Workforce demand, unlike information that we have reviewed so far on stocks and flows, can be more subjective in nature. There are tensions between what would be professionally ideal and what is economically affordable. They can only be resolved by discussions with stakeholders and a process of peer review. Future demand also needs to link to changes in service delivery as outlined in NHSP2.

Workforce demand is usually based on activity ratios that link the number of staff to the volume of work. For instance, nurses per occupied bed is the most usual metric. The reason occupied bed as opposed to available beds is used is that bed occupancy rates can vary significantly. It therefore avoids allocating nurses to beds without patients and ensures that very busy wards are adequately staffed. Ratios vary according to the acuity (sickness) of the patient, with intensive care having the most staff. However, what exactly should the ratios be? This needs to be agreed beforehand, using international comparisons as a starting point, suitably adjusted for differences in hours of work, annual leave and affordability. Surgeon

numbers are determined by the number of operations undertaken and the acuity of patients and the complexity of the procedures. Hospital physicians are based on the number of patients and the need for specialist skills. In addition, infrastructure and activity information is needed, such as beds and occupied beds per hospital, numbers of operating theatres, diagnostic equipment, such as MRI, CT, ultrasound and plain film. A similar approach can be used for determining demand in primary health care facilities. Community staff that are peripatetic hav e their numbers determined by the volume of patients and an allowance for travelling time, which needs to take into account travel congestion in towns and larger distances and worse roads in rural areas. Medical staff numbers in clinics are determined by patient volumes.

It is important to enquire how hospitals are used, for instance are the right type of patients in hospital for the right amount of time? Can some be treated more cheaply and conveniently closer to home, say with a drug based intervention?

Demand exercises need to be undertaken with inputs from respected members of the professions concerned who are actively engaged in health service delivery. This can be achieved by a series of focused workshops with separate events for hospitals and community serv ices. Within each there would be separate groups for doctors, nurses and allied health professions. This work should be assisted by benchmarked information such as staff to patient ratios.

D isse mi na ti ng Wo rkf or ce I nfo r mat io n

Publication of Reports

The production of a large volume of workforce monitoring information needs to be linked with a narrative that relates the causes and impacts of staffing trends to MoHP policies. It also needs some insights based on regional and district supplied commentary. This document should form a key component of an annual report.

Recommendation 14: An annual report on all HR Information should be produced.

Ministry of Health and Population's Website

The website is being upgraded to make it easier to update regularly. Making validated workforce information accessible on the website was considered to be a useful additional resource and would not represent any technical problems. It is recommended that a review is undertaken of the NHS website (www.ic.nhs.uk) which has a wealth of workforce information and also encourages feedback from users.

Recommendation 15: Workforce information should be published on the Ministry of Health and Population website after reviewing that of the National Health Service information website (www.ic.nhs.uk).

Le ade rsh i p and A nal yti cal Sup p or t

This work will need supporting in the MoHP and someone needs to be identified and given the lead responsibility for workforce planning and developing new staff roles. This entails working with a wide range of stakeholders such, as the MoPH, MoGA, the Ministries of Education and Finance, along with three professional councils (Medical, Nursing and Pharmacy). Another important body covering technical education is the Council for Technical Education and Vocational Training. In addition, it will be necessary to

work with the Public Service Commission (PSC) which is responsible for recruiting approximately 80,000 staff, a significant number being in Healthcare. The ideal person would be someone who works well across organisational boundaries and across the country.

An important part of the role is to develop an HR interest group of district and regional staff working in Administration departments. They could give the MoHP useful advice and feedback, because they are very close to the staffing issues that the MoHP seeks to address. They could also provide valuable insight in interpreting trends in the proposed workforce reports.

Recommendation 16: An additional member of the Ministry staff should be giv en the lead responsibility for workforce planning and developing new roles alongside the Under Secretary and Joint Secretary HR.

A workforce analyst with skills in HR database and Excel usage would be needed to support this role and its resultant workload. This is rather similar to the support role in the HuRIS team.

W OR KFO RC E ISSUES

This section covers the most serious workforce issues raised by respondents. It is argued that they should be addressed now, rather than wait for them to be addressed as part of a larger national Human Resource Plan.

The most serious workforce issues that respondents in the Western Regional Health Directorate mentioned were in rural areas. The largest percentage of vacancies was for Public Health Officers (33 per cent). Village Health Workers, who do immunisations on an outreach basis, also have a high vacancy rate (27 per cent), which has a serious consequence for service delivery. Many of the vaccinators are ageing and have a narrow skill set. They are being upgraded to Community Medical Assistants, with better qualifications than VHWs. Many CMAs have been trained and are available for recruitment nationally. In this region, only one or two posts have been allowed and advertised, on condition of a one year contract, which does not attract recruits. The vacancy rate for Auxiliary Nurse Midwives was considerably lower (11 per cent or 2 posts).

A detailed analysis of Regional Health Directorate, district and institutional workforce information is prov ided in Annex 3.

C ON C LU SIONS AN D REC OMM EN DAT IONS

A high priority should be given to producing HR information to monitor recruitment and retention. In the first instance, this should be on sanctioned and filled posts and vacancies, information which is provided by Regional Health Directorates, as they aggregate this information for their own purposes anyway. This information and the other data requirements set out in the report would provide the stocks and flow information needed to produce a workforce plan. The data gathering exercise should be facilitated by a workshop of information providers and users drawn from the Ministry, region, district and other interested parties. This would enable MoHP recruitment and retention initiatives to be monitored. It will also provide some of the information needed to produce a workforce plan, which would also require information on forthcoming retirements and forecasts of resignations. Future demand would then need to be estimated, and finally, measures required to meet the gap between the two should be formulated.

The HuRIS system cannot currently provide accurate information, as it has not been updated. On the other hand, the Personal Information System (PIS) has been expanded to cover the same data items and individual records are being updated as part of a major exercise. This should be followed up by asking for a PIS report by Regional Health Directorate for the same information that is being requested from Regional Health Directorates, so that a comparison can be made between the two data sets for validation purposes. If PIS provides reliable information, it then poses the question whether it should become the prime source of HR information. Even if PIS became the main source of HR information, the MoHP role in HR planning is envisioned to change significantly, with the production of a large number of reports on a routine basis. This includes an annual report of HR information, which should also be published on the MoHP website.

In order to provide a focus for HR information, planning and development, a key person in the Ministry should be identified and given this as a lead responsibility. There may be a case for splitting this responsibility into two, as workforce development requires more of an understanding of staff roles, rather than staff numbers. However, sharing this responsibility more widely would also be an option, particularly given the evidence of frequent staff transfers. This role will need to be supported by a workforce analyst, a similar role to that of HuRIS support.

Recommendations

1. The Personal Information System should produce the workforce information and this should be compared with Regional information for validation purposes until PIS is regarded as a reliable source of information.
2. If the PIS can produce accurate workforce reports, given that HuRIS currently has out-of-date, inaccurate and unreliable information, a decision needs to be made whether it should continue and if so in what form.
3. A link between PIS and HuRIS should only be written if PIS fails repeatedly to meet MoHP needs and should then be supported by a business case.
4. The provision of routine workforce information on a regular basis should take priority over the production of a workforce plan. However, the plan would benefit directly from this data collection exercise.
5. A community of interest for workforce issues should be created to help interpret workforce information and assist in developing plans and designing monitoring frameworks. It would be useful to include participants from regions and districts, not only Kathmandu. This would be facilitated by workshops.

6. Regions should submit workforce reports to the MoHP annually, of sanctioned and filled posts and vacancies, for the main staff groups at the same date each year. The draft form in Annex 1 should be taken as a starting point.
7. Workforce information should be updated each year and a time series produced to show changes year by year.
8. In order to monitor initiatives to improve staff retention of doctors and nurses in rural areas, vacancy figures should be monitored on a monthly basis, once it is possible to do so using an HRIS. After a period of time, this can be reduced to every three months.
9. The number of staff resigning or retiring should be collected by staff group, on an annual basis.
10. Age profiles, by staff group should be produced. This should be produced for doctors, by specialty in the first instance, as they take much longer to replace due to the duration of their training programmes.
11. Training should be provided in analysing workforce information and the use of Excel's spreadsheet and graphics functions.
12. The number of newly qualified staff graduating for each profession should be collected each year.
13. Professional councils should be asked to notify the MoHP of how many requests they have received for letters of good standing. Training should be provided in analysing workforce information and the use of Excel's spreadsheet and graphics functions.
14. An annual report on all HR Information should be produced.
15. Workforce information should be published on the MoHP website.
16. An additional member of the MoHP should be identified and given the lead responsibility for workforce planning and developing new roles alongside the Undersecretary and Joint Secretary HR.

NEX T STEP S

There is scope to move ahead quickly with initiatives that will substantially improve the MoHP's capacity to meet its health goals by monitoring the impact of its workforce initiatives. This will require a senior MoHP civil servant working with NHSSP to allocate responsibility to specific individuals for the actions set out in the following tables.

Three main next steps have been identified to implement the 16 recommendations given above, namely:

- Obtaining reliable workforce information from PIS and deciding on the future of HuRIS (see Recommendations 1, 2, 3 and Table 7)
- Collecting national workforce information from Regional Health Directorates and a workshop to build a community of interest in workforce information and planning (see Recommendations 4-15 and Table 8)
- Leadership and project management for the workforce planning and information (see Recommendation 16 and Table 10)

The timescales to start to implement the recommendations range from one to four months, depending on the ease of implementation.

The actions set out in Table 7 should lead to an improvement in the supply of workforce information and are therefore a high priority. In the first instance, the objective is to evaluate the robustness of PIS

workforce information by comparing it with that provided by Regional Health Directorates. If PIS information is fit for purpose, then it poses questions about the future of HuRIS.

Table 7: Human Resource Information Systems (HuRIS) and PIS Next Steps

Recommendation	By When	Action By
1 The Personal Information System should produce the information and this should be compared with Regional information for validation purposes. Ask PIS for the same information as Regional Health Directorates will be asked to supply Validate and resolve any differences between Regional Health Directorates and PIS information	November 2011	
2 If the PIS can produce accurate workforce reports, given that HuRIS currently has out-of-date, inaccurate and unreliable information, a decision needs to be made whether HuRIS should continue and if so in what form.	December 2011	
3 A link between PIS and HuRIS should only be written if PIS fails repeatedly to meet MoHP needs and should then be supported by a business case.	January 2012	

In order to develop a community of interest in workforce information and planning, which will enable the numerous stakeholders to contribute their unique perspectives to the interpretation of workforce information and developing workforce plans assist in designing monitoring frameworks for workforce information, it is recommended to run a workshop. The stakeholders will be drawn from MoHP, MoGA, NHTC Regional Health Directorates, districts, the professions and education. A draft programme is prov ided in Table 9.

Table 8: Workforce Information Next Steps

Recommendation	By When	Action By
4 The provision of routine workforce information on a regular basis should take priority over the production of a workforce plan. However, the plan would benefit directly from this data collection exercise.	September 2011	
5 A community of interest for workforce issues should be created to help interpret workforce information and assist in developing plans and designing monitoring frameworks. This would be facilitated by residential workshops.	November 2011	
6 Regions should submit workforce reports to the MoHP of sanctioned and filled posts and vacancies, for the main staff groups. The draft form in Annex 1 should be taken as a starting point.	November 2011	
7 Workforce information should be updated each year and a time series produced to show changes year by year.	2012 on anniversary	
8 In order to monitor initiatives to improve staff retention of doctors and nurses in rural areas, vacancy figures should be monitored on a monthly basis, once it is possible to do so using an HRIS. After a period of time, this can be reduced to every three months.	January 2012	
9 The number of staff resigning or retiring should be collected by staff group, on an annual basis.	January 2012	
10 Age profiles by staff group should be produced. This should be produced for Doctors, by specialty in the first instance, as they take much longer to replace due to the duration of their training programmes.	January 2012	
11 Training should be provided in analysing workforce information and the use of Excel's spreadsheet and graphics functions.	December 2011	
12 The number of newly qualified staff graduating for each profession should be collected each year.	January 2012	
13 Professional councils should be asked to notify the Ministry of Health and Population of how many requests they have received for letters of good standing.	December 2012	

14 Training should be provided in analysing workforce information and the use of Excel's spreadsheet and graphics functions. December 2012

15 An annual report on all HR Information should be produced. January 2012

16 Workforce information should be published on the Ministry of Health and Population website. January 2012

Table 9: Workshop to Improve Workforce Information Collection and Publication

Issue	By When	Action By
Run a MOHP Training Programme/Workshop Objectives: To gain agreement with Regional Health Directorates to supply the MoHP with workforce information on a regular basis To agree format and timescale for the delivery of information To build a workforce planning community of interest including MoHP, Regional Health Directorates, districts, the professions, education and External Development Partners (EDPs)and NGOs	Early November 2011	
The timescales are to achieve to start to implement the recommendations set out within the next three months, i.e. by the end of 2011 at the very latest.		
Duration: One and a half days Purpose: to agree data collection exercises with regions on whom most of the workload would fall Who to invite? Ministry Regional Health Directorates: at least one lead person from each region. Professional heads, i.e. doctors, nurses, Representatives from Education/MOGA \EDPs and NGOs Decide programme content, which could include; Ministry to make the case for a workforce plan Regional Health Directorates to present their workforce information and issues Agree with Regional Health Directorates on workforce information to be supplied Agree the best date each year to supply this Discuss Regional Health Directorates providing more detailed information on Doctors annually Who will record the workshop and write up its proceedings as an action plan? What will be deadlines for the provision of information and how will they be enforced?		
Put workforce information on the Ministry website	December 2012	

Table 10: Workforce Information, Planning and Development: Leadership and Project Management: Proposed Workshop agenda

Issue	By When	Action By
16 Who should be given the lead responsibility for workforce planning and developing new roles? Should both tasks given to one person or should workforce planning and information and developing new roles be given to different people to lead? Who are the champions elsewhere in the Ministry and at Regional and District level to support the initiative?	End September	

AN NEX 1: D R AFT I NFO R MATIO N TEM PL ATE FOR SANC TIO NED , FILL ED P OSTS AND VAC ANC IES

Table 11: Information Template for Sanctioned, Filled Posts and Vacancies

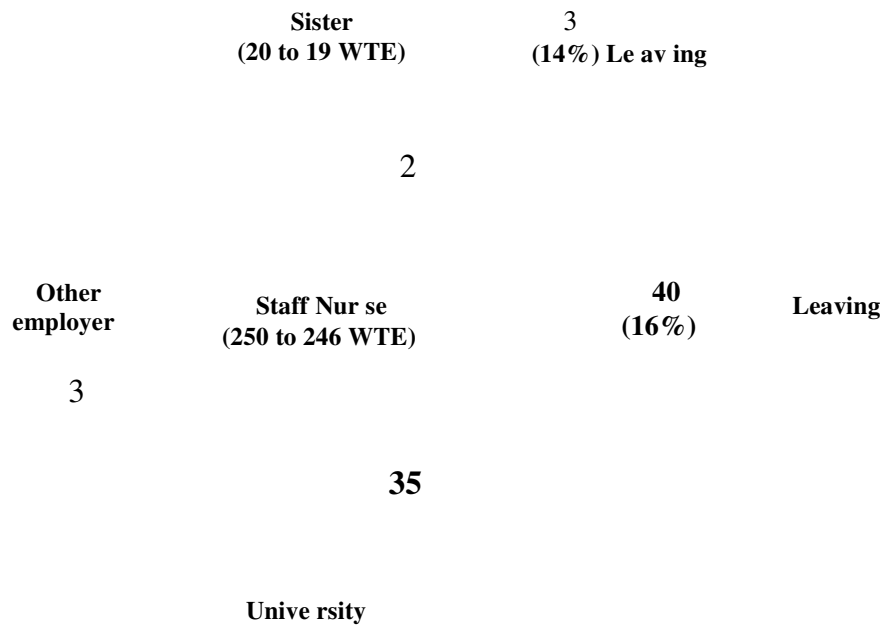
				Vacancies	
Occupation Group	**Occupation**	**Sanctioned**	**Filled**	**Actual**	**Per cent**
Doctors	Medical Specialist				
	Medical Officer				
	Integrated Medical Officer (ayurvedic)				
	Dental Surgeon				
	Other Doctors				
	Sub-total Doctors				
Indigenous Practitioner	Indigenous Practitioner				
Nurses	Graduate Nurse				
	Staff Nurse				
	VHW/MCHW				
	Auxiliary Nurse Midwife				
	Auxiliary Health Worker/AAW				
	Other Nurses				
	Sub-total Nurses				
Allied Health Professions	Radiographer				
	Assistant Radiographer				
	Pharmacist				
	Assistant Phamacist				
	Other AHPs/Paramedics				
	Sub-total AHPs/Parameds				
Non-Clinical Staff	Manager				
	Skilled Support Staff				
	Other Support Staff				
	Sub-total Non-Clinical staff				
	Total				

Note:
MCHW: Mother & Child Health Worker
AAW: Assistant Anaesthetist

ANNEX 2: WORKFORCE INFORMATION REQUIRED TO SUPPORT A WORKFORCE PLAN

The purpose of this section is to show how tools and charts can be used to illustrate and implement workforce planning and monitoring. It also shows the workforce information readily available at Regional Health Directorates and district levels, which can be called upon by MoHP. These tools could also be taught at the training event for analysing workforce information.

Figure 1: An Example of Box Flow Diagram



The following table shows how information on posts, vacancies, attrition, retirement and changes in demand can be used to calculate the number of staff each time that need to be recruited.

Table 12: Annual Human Resource Plan

Occupation	Staff in post	Staff in post (WTE)	Vacancies	% vacancies	Attrition	% attrition	Retirement	Changes in demand	Recruitment
A	3300	3200	100	3%	220	7%	0	70	390
B	2750	2500	250	10%	55	2%	20	15	340
C	3700	2750	950	35%	425	15%	30	50	1455
D	155	150	5	3%	7	5%	0	4	16
E	600	550	50	9%	70	13%	10	10	140
Total	10505	9150	1355	15%	777	8%	60	149	2341

Note: the above data is fictitious and is used for illustration purposes.

Table 9 shows how the data from the various reports can be summarised to focus action. A system of "traffic lights" is used to draw attention to the most serious issues. If there are no staff shortages, the occupation is coded as green. If shortages adversely affect the quality of care, this is coded amber. Finally, shortages that have as serious impact on the quality of care are coded as red. Voluntary attrition means staff that have left on their own accord, such as going to work abroad; it does not include retirements. The total recruits for the year show the number of staff needed to fill all the vacancies, replace resignation and future retirements and to meet any planned increase in posts.

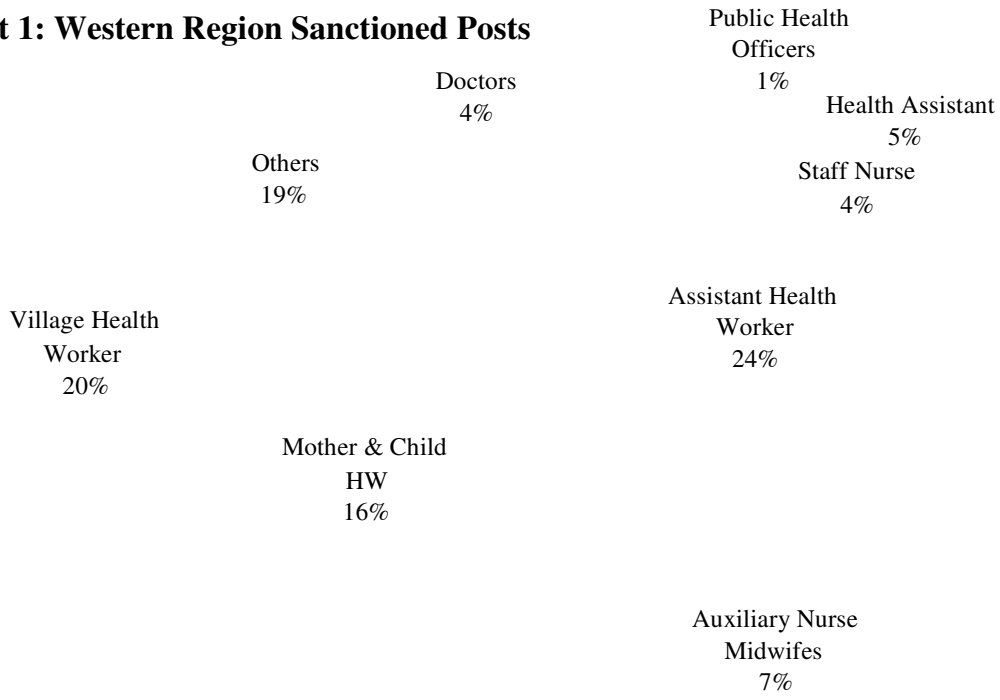
ANNEX 3: WORKFORCE INFORMATION AND ISSUES AT REGION, DISTRICT AND INSTITUTION

This section shows the workforce information that is readily available at Regional Health Directorates, District and Hospital level, in the Western Regional Health Directorate. This is re-inforced by information from Patan Hospital, Kathmandu. Its purpose is to illustrate the type of data and its shortcomings, and to show how it could be presented in an easier to understand manner, using charts.

Table 13: Sanction, Filled Posts and Vacancies, Western Regional Health Directorate
Source: Western Regional Health Directorate

Post Name	Sanctioned	Filled	Vacant	% Vac
Doctors	173	156	17	10%
Public Health Officers	21	14	7	33%
Health Assistant	237	212	25	11%
Staff Nurse	194	192	2	1%
Assistant Health Worker	1037	944	93	9%
Auxiliary Nurse & Midwife	319	303	16	5%
Mother & Child HW	692	673	19	3%
Village Health Worker	886	804	82	9%
Others	816	711	105	13%
Total	4375	4009	366	8%

Chart 1: Western Region Sanctioned Posts



Western Regional Health Directorate sanctioned posts by occupation are shown in Chart 1. The largest staff group is Assistant Health Worker (24 per cent) followed by Village Health Worker (20 per cent), along with the Mother and Child Health Worker. These three staff groups represent 60 per cent of the workforce.

Chart 2: Western Region Vacancies by Occupation

There is a very serious shortage of Public Health Officers of 33 per cent. This is made even worse when one considers their sanctioned posts are few in number, just 1 per cent of the total. Next highest were Health Assistants (11 per cent) and Doctors (10 per cent). Staff nurses had a surprisingly low vacancy rate of 1 per cent. It would be interesting to know the reasons for this.

The Regional Health Directorate manages HR, undertakes monitoring and provides supervision and work with Regional Public Service Commission. There is an establishment of 44 posts, of which 14 are vacant. There are v acancies for PHO, MHO, supervisors, entomologists and public health nurses.

HuRIS

This was not updated regularly, particularly the frequent transfers. Unlike PIS, HuRIS does not perform administrative tasks for districts, which was considered to be a disincentive to maintaining it.

Public Health Office, Kaski District, Western Region

Table 14: Sanctioned, Filled Posts and Vacancies, Public Health Office, Kaski District

Post Name	Sanctioned	Filled	Vacant	% Vac
Public Health Administrator	1	1	0	0%
Medical Officer	3	3	0	0%
Health Assistant	16	15	1	6%
Staff Nurse	3	3	0	0%
Assistant Health Worker	51	48	3	6%
Auxiliary Nurse & Midwife	19	17	2	11%
Mother & Child HW	31	31	0	0%
Village Health Worker	44	32	12	27%
Others	44	44	0	0%
Total	**212**	**194**	**18**	**8%**

The above table does not include 860 volunteers of which there is a ration of four to each sanctioned post, which is very impressive.

The largest percentage of vacancies was for Village Health Workers (27 per cent), which must have a serious consequence for service delivery. This is followed by the Auxiliary Nurse Midwife category (11 per cent or 2 posts).

Pokhara Hospital, Western Region

Table 15: Positions, Posts, Filled Posts & Vacancies, Pokhara Hospital

Position	Posts	Filled Posts	Vacancies	
			Actual	Per cent
Consultants	30	22	8	27%
Medical Officers	**60**	**52**	**8**	**13%**
Doctors sub-total	**90**	**74**	**16**	**18%**
Senior Nurse	1	0	1	100%
Sister	6	2	4	67%
Staff Nurse	**152**	**129**	**23**	**15%**
Auxiliary Nurse & Midwife	**18**	**18**	**0**	**0%**
Assistant Health Worker	**20**	**20**	**0**	**0%**
Nurses sub-total	**197**	**169**	**28**	**14%**
Allied Health Professions	**9**	**6**	**3**	**33%**
Allied Health Assistants	**24**	**14**	**10**	**42%**
AHPs sub-total	**33**	**20**	**13**	**39%**
Administrative	**18**	**18**	**0**	**0%**
Administrative Assistants	**14**	**10**	**4**	**29%**
Admin sub-total	**32**	**28**	**4**	**13%**
Ancillary staff	**20**	**26**	**-6**	**-30%**
Other Staff	49	29	20	41%
Other Support staff	**104**	**108**	**-4**	**-4%**
Other Staff sub-total	**173**	**163**	**10**	**6%**

Total	**525**	**454**	**71**	**14%**

Note: There are also 50 to 60 volunteers

The highest vacancy rate was for Allied Health Professions (39 per cent) followed by doctors (18 per cent) and nurses (14 per cent). However, the position for assistant posts was better. For instance, the vacancy rate for Medical Officers was 13 per cent compared with 27 per cent for consultants; there were no vacancies for Auxiliary Nurse Midwives and Assistant Health Workers.

There is a low ratio of nurses to beds of 1: 0.56, as compared with about 1:1.2 in England (there are 350 beds in Pokhara Hospital). However, if the 50 to 60 volunteers who provide free assistance acted as nursing assistants, this ratio would improve somewhat.

Chinese doctors come to work here to gain more experience. Senior level vacancies are sometimes unfilled when they are working in the capital. As a result, waiting times have increased up to 3 months.

Patan Hospital, Patan Academy of Health Sciences, Kathmandu

There are 735 staff and 450 beds, of which 388 are in use. Currently there is a combination of paper and computer based systems. As in the case of other institutions, information is available on sanctioned and filled posts, by occupation.

Recruitment and retention

The hospital's IT department has no recruitment difficulties, as it recruits applicants with good IT skills rather than more expensive IT graduates.

There are recruitment and retention problems regarding senior clinicians. There is also a national shortage of Intensive Care Nurses and General Nurses receive in-service training in intensive care order to become fully qualified in this role. There are no problems in recruiting Auxiliary Nurses, but they have high turnover. General Nurses also have a high turnover as many go to work abroad. Some nurses are educated to master's level.

Where training is required in new areas, professional networks are used to gain experience and supervision elsewhere. Case conferences are used to deal with complex cases. The WHO guidelines for operating theatres are now being implemented.

AN N EX 4 : TERM S OF REFEREN CE

Section A: Backgr ound inform ation

The Government of Nepal is committed to improving the health status of Nepali citizens and has made impressive health gains despite conflict and other difficulties. The Nepal Health Sector Programme-1 (NHSP-1), the first health Sector-Wide Approach (SWAp), began in July 2004, and ended in mid-July 2010. NHSP-1 was a highly successful programme in achieving improvements in health outcomes. Building on its successes, the Ministry of Health and Population (MOHP) along with External Development Partners have designed the second phase of the Nepal Health Sector Programme. The 5-year programme, referred to as NHSP-2, was implemented from mid-July 2010. NHSP-2 acknowledges the need to adapt its strategies to the new federal structure when agreed under the new constitution.

Section B: The P rogramme

The goal of NHSP-2 is to improve the health status of the people of Nepal, especially women, the poor and excluded. The purpose is to improve utilisation of essential health care and other services, especially by women, the poor and excluded. Options Consultancy Services Ltd (Options) and partners are providing technical support to the GoN to implement NHSP-2. LATH has specific responsibility for working with the MOHP to provide clear strategic direction on human resources for the health sector to support the implementation of NHSP-2.

Section C : Justificatio n for c onsultancy

The MoHP initiated the process of developing an HRH strategic plan in the summer of 2010. NHSP-2 has been supporting this process starting with the co-facilitation of a planning workshop in November 2010 (MoHP and NHSP-2, 2010). Since then the project has been supporting Technical Working Groups for each of the main areas of the plan (Martineau and Bista, 2011). It is expected the plan will be ready in advance draft form by the end of July 2011. Many of the strategies that will be included in the plan require accurate and up-to-date information on human resources in the health sector. In particular, the development of a workforce plan based on staffing projections is scheduled for the first year of the strategy. A one-off HRH situation analysis covering both the public and private sector was scheduled for completion by the end of 2010, but this has been delayed and is expected to take place soon. However, a sustainable source of HR information is needed. To quote Alwyn and Hornby (2002) 'plans for health must be formulated with well - defined targets, together with a linked plan for human resources, with clear objectives for the development, deployment, and utilization of health service staff. This will need to be supported by a relevant and reliable Human Resources for Health information system, which will enable planners and managers to monitor progress in terms of individual and corporate performance. Basic and post-basic training should be linked to these objectives, with some form of institutional licensing to ensure that the necessary staff quality is achieved and maintained.'

Two major HR databases exist with data on the health workforce employed by the government. The Ministry of General Administration (MoGA) has a hard-copy file database for all government employed staff that has just been overhauled and updated for health employees, and it also manages the computer based Personnel Information System (PIS) which, amongst other functions, is used for managing pensions. Since 1994, the MoHP has been working in parallel on the development of a computerised HR database called HuRIS1. The database was originally built in Microsoft Access. It was later transferred to Oracle to

1 Formerly called HuRDISH

enable it to be web-based, though this did not happen. It was also originally planned that the database would include other government sectors (e.g. police, army) and the private sector, though this did not happen either. HuRIS contains detailed job related information on each individual, including job history, training and personal details but is slow and linear programmed offering limited information which is dependent upon largely voluntary self declared information inputs. Though HuRIS is capable of forecasting retirement planning and replacement of staff the data appears to be insufficiently complete for use as a reliable planning and management system. The major problems appear to be with regular updating of the system at district level, due to poor internet connectivity in some locations and high turnover of trained operators especially at district and institutional levels. Professional councils also hold data on key professionals for which they are responsible. However, this is also of uncertain contemporaneous validity and does not monitor, for example, training and education for all membership.

Section D : Objec tive of co nsultancy

The overall objective of the consultancy is to support the components of the HRH strategic plan that require workforce data – in particular, the workforce planning exercise – in order to improve the effectiveness of the current health workforce across the health sector. The specific objectives of the consultancy are, working with MoHP counterparts and the NHSP-2 HR Adviser:

1) to assess future data requirements for human resource planning management and development in the public sector;

2) to identify the capability of the MoHP HuRIS, the National Health Training Centre's Training Information (Management) System (TIS), the MoG 's PIS systems, and any other relevant health workforce databases to meet these data requirements; and

3) to recommend further work to ensure accurate health workforce data is available and accessible to support the planning management and dev elopment of the workforce.

Section E: Sco pe of Wo rk and Specific Act iv ities

1. Review key existing and planned HR systems including filling vacancies, transfers, promotions, payroll, workforce planning, regular and ad hoc HRH reporting to identify HR data requirements for the public sector.
2. Identify all HR databases for the health workforce currently in use for the public and private sectors.
3. Carry out an in-depth review of the processes and outputs of the HuRIS and PIS systems to identify their capabilities and shortcomings, including compatibility of the two databases, in meeting HR data requirements for the health sector.
4. Review the processes and outputs of other HR databases identified. The level of review should be appropriate to the potential usefulness of the data outputs of these databases for planning and management of the health workforce across the sector.
5. Present initial proposals for improving the availability of HR data to a select group of stakeholders convened by the MoHP. These proposals should cover the data collection processes, the design and use of current or new HR databases, and the use of data outputs in supporting the planning, management and development of the health workforce. The proposal should also include additional staffing requirements and any relevant training requirements at various levels of the system related to the collection, analysis and use of health workforce data. As far as possible the proposals should also

take account of the federalisation policy, given the uncertainty of the timing and nature of the implementation of this policy.

6. Produce a report of the consultancy, taking into account the feedback from the MOHP stakeholder meeting.

Section F: Deliver ab les

1. A report of no more than 20 pages (main section), plus annexes and an executive summary, summarising the findings and recommendations of the consultancy. The report should include a set of steps for MoHP, NHSP-2 staff and further national or international consultant inputs to implement the recommendations by 2013.

2. A brief presentation of findings and key proposals to HR stakeholders convened by the Director of Finance and Human Resources of the MoHP before leaving Nepal.

Section G : C onsultant Req uired

Minimum requirements:

Strong working knowledge and experience to prov ide HR information systems expertise to NHSP-2 team in Nepal.

Experience in developing and reviewing health sector HR information systems at national and regional levels.

Ability to work productively with local counterparts with professionalism and sensitivity to local culture.

Flexible with good organization skills, ability to prioritise workload and work well under pressure.

Excellent report writing and presentation skills.

Post-graduate qualifications in a relevant field with a minimum of 5 years work experience with HR information systems.

Section H : Tim Ing

Indicative timing for this assignment is as follows:

7th August: arrive in Nepal

8th – 19th August: 2 weeks in Kathmandu conducting assessment (including possible visit to a district office – day trip only) and presentation of initial findings to stakeholders

20t h August: depart for UK

24t h August: submit draft report for internal review

30t h August: submit final report

Level of effort:

1 day preparation
10 days on assignment (in-country)
4 days writing, editing and finalising report (UK desk based)
Total: 15 days

Travel days are not paid under this contract.

Section I : In dicative Meetin gs R equired

1. Current and former HuRIS staff; MOHP and DoHS senior managers; relev ant Technical Working Group members; NHSP-2 adviser team; a selection of private sector providers; NGOs involved in providing and commissioning health services and WHO representatives.
2. Ministry of General Administration, professional councils.
3. The NHSP-2 team.

Section J: Doc umentatio n Available

All relevant NHSP documentation and MoHP published materials (see Reference/Bibliography section) .

Section K : R eport ing Requ irement s

Draft reports must be submitted to Bill James, the Technical Manager for this assignment and Roy Daley, Contract Manager at LATH, before being circulated to other stakeholders and MoH officials. Tim Martineau will have overall responsibility for approving the final report on behalf of LATH.

The report will be formatted by Anjie Holt, Programme Coordinator at LATH, before being submitted as final.

The report is the intellectual property of LATH and should not be circulated by the consultant without the permission of the Programme staff.

Section L : Logistic and C ontr ac ting Ar rangement s

LATH will liaise directly with the consultant on all logistical and contracting matters. Once terms of reference are finalised and agreement is reached on deliverables, level of effort and deadlines, a short term consultancy contract specific to this assignment will be issued.

Anjie Holt will liaise with the consultant over specific logistical arrangements for overseas travel to Nepal.

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ANNEX 5: THE CONSULTANT TEAM

George Blair, LATH International Consultant

ANNEX 6: LIST OF PEOPLE INTERVIEWED AND FACILITIES VISITED

The assistance of the following is gratefully appreciated:

Rajan Adhilkan, Planning Officer, Ministry of General Administration
Ramesh Prasad Adhikazy, Chief Public Health Officer, Kaski District
Hari Prabad Baral, Senior Clerical Officer, Pokhara Regional Hospital
Pushkar Bhattasari, Section Officer, Western Regional Health Directorate
Bal Govinda Bista, Managing Director, Centre for Empowerment Innovation and Development – Nepal
Chhaya Jha, Gender and Social Inclusion Adviser
Rishi Ram Khadka, Under Secretary, National Training Centre
Kabiraj Khanal, Under Secretary, MOHP
Paras Kumaracharya, Director, Patan Hospital, Patan Academy of Health Sciences
Bhoj Kumari, Gender and Social Inclusion Specialist
Ramesh Mainali, Director, Ministry of General Administration, Department of Civil Personnel Records
Pratap Kumar Pathak, Secretary, Ministry of General Administration
Sabin Kumar Sharma, Computer Programmer, MOHP
Ridesh Kumar Tamralear, Computer Officer, Ministry of General Administration
Ram Prasad Timilsina, Section Officer, Western Regional Health Directorate

Facilities Visited:

Ministry of General Administration, Kathmandu
Ministry of Health and Population, Kathmandu
National Training Centre, Kathmandu
Patan Hospital, Patan Academy of Health Sciences, Kathmandu
Pokhara Regional Office, Western Regional Health Directorate
Public Health Officer, Kaski District, Western Region
Pokhara Hospital, Western Region

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