Using MIS to deliver essential services: Case of Healthcare Provision Support in Fiji

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Using MIS to deliver essential public services In Fiji
Abstract

The Ministry of Health (MOH) had introduced and implemented a Human Resource Information System (HRIS) in 2007. HRIS is defined as “a computerised tool for the collection, storage, maintenance, and retrieval of information about people and their jobs” (Spirog, J.E. October, 1988).

The HRIS was first introduced at the MOH 4 years ago. The HRIS was recently enhanced in mid 2011. The objective of the HRIS is to support the MOH’s core business “a healthy population in Fiji that is driven by a caring health care delivery system”.

In comparison to other Pacific Island countries, Fiji’s health system is the most developed amongst Pacific Island countries (UNDP 2006) and has undergone significant change in the last decade. From 1999 – 2009, AusAid, a major donor to Fiji’s health system, has supported two stage health sector improvement programs. The first stage (1999 - 2003) was a management reform program designed to improve decision making by supporting a new model of decentralized management. The second phase (2004 – 2009) looked at improving governance, health systems performance, clinical outcomes and supported public health and infrastructure initiatives at the divisional level (WHO WPRO 2008). The next stage for AusAid which is still in its planning stage is to fund specifically Millennium Development Goals (MDGs) and reducing non – communicable disease prevalence.

As one of the biggest Ministries of the Government of Fiji with over 3,000 employees, the challenge is to have a reliable and accurate HRIS database that will be able to assist management in making strategic human resource management decisions.

The need to over haul the HR manual based system of the entire MOH has already begun. The HRIS is a sub system of the Health Management System. All the information systems that MOH has must all link to supporting the MOH’s core business.

We assessed whether the current HRIS is indeed supporting the MOH’s core business. We assessed whether the ICT support towards the HRIS and whether the resources that they have in place is sufficient to support the system. We also questioned the users of the HRIS – both the medical personnel and the Human Resource staff to gauge whether the HRIS had benefitted them and the challenges the face with the HRIS. With an automated HRIS we asked the HR team questions whether HR has reduced HR costs; produced a paperless unit; manpower and whether it has enable them to make strategic HR management decisions.

Literature review will argue that HRIS is the way towards a digital economy - this can be un - doubtly be true. Whether it works in the case study of the MOH is what we will assess.
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>2</td>
</tr>
<tr>
<td>Introduction</td>
<td>5</td>
</tr>
<tr>
<td>Study Background</td>
<td>5</td>
</tr>
<tr>
<td>Literature Review</td>
<td>6</td>
</tr>
<tr>
<td>Background of HRIS</td>
<td>7</td>
</tr>
<tr>
<td>Applications of HRIS</td>
<td>7</td>
</tr>
<tr>
<td>a) Difficulties in sustaining management attention</td>
<td>8</td>
</tr>
<tr>
<td>b) The complexity of HRIS</td>
<td>9</td>
</tr>
<tr>
<td>c) Barriers to acceptance of HRIS &amp; change management</td>
<td>9</td>
</tr>
<tr>
<td>d) Financial constraints</td>
<td>10</td>
</tr>
<tr>
<td>Conclusion</td>
<td>11</td>
</tr>
<tr>
<td>Findings of our research</td>
<td></td>
</tr>
<tr>
<td>Objective of the Ministry of Health</td>
<td>12</td>
</tr>
<tr>
<td>Ministry of Health – An Overview</td>
<td>12</td>
</tr>
<tr>
<td>Human Resources Information System</td>
<td>13</td>
</tr>
<tr>
<td>Information Communication Technology Unit</td>
<td>14</td>
</tr>
<tr>
<td>Challenges of the ICT Unit</td>
<td>15</td>
</tr>
<tr>
<td>Staff response to the interview</td>
<td>16</td>
</tr>
<tr>
<td>a) ICT Divisional Support Personnel (CWMH) – User 2</td>
<td>16</td>
</tr>
<tr>
<td>b) Medical Superintendent CWMH – User 3</td>
<td>16</td>
</tr>
<tr>
<td>c) Human Resources Unit – User 3, 4 and 5</td>
<td>17</td>
</tr>
<tr>
<td>d) CWMH HRIS Office – User 6</td>
<td>18</td>
</tr>
</tbody>
</table>
Discussion of our findings

Conclusion

Reference

Appendices

Annexure 1 – Information Analysis
Annexure 2 - Questionnaire
Annexure 3 – Minutes of Meeting
Introduction

Fiji has a population of approximately 870,000 people in Fiji. There are 332 islands altogether in Fiji of which 110 are inhabited. Fiji has one of the largest populations in the Pacific region, excluding Papua New Guinea, a nation of approximately 7 million people. The two (2) main islands are Viti Levu and Vanua Levu. Much of the nation’s population is located in Viti Levu (Fiji Islands Bureau of Statistics 2008).

The Government’s health expenditure in Fiji is mostly funded through tax revenue. Funding is also sourced from other donor agencies to supplement MOH’s activities in specific areas. For the last decade alone, government expenditure has not exceeded 4% of GDP (Government of Fiji 2009a, Fiji National Health Account report 2007/2008). In 2011, Government allocated $139m towards the MOH’s budget. For 2012, the budget has increased to $157m.

Fiji’s has a life expectancy of 70 years which can be attributed to the on-going improved health service delivery. There has also been a significant decline in mortality rate over the past years. In 2005, the mortality rate declined from 20.76 per 1,000 live births as compared to 13.1 per 1,000 in 2008 (Government of Fiji 2009b, Annual Report 2008).

Study Background

Human Resources Development is one of the key components of the MOH’s Strategic Plan for 2011-2015. The MoH is aware of the critical need to address human resources development because of it’s key strategic role in the effective delivery of quality health care services.

Staff retention is a major challenge for the MOH and it is committed to seeing that human resource capacity building is implemented across all levels to ensure skill sets are maintained at an acceptable level that will enable it to continue to provide quality healthcare services to the people of Fiji.

As part of its conceived effort, the Ministry has looked at increasing the intake of trainee doctors and nurses while revisiting bonding conditions and annual registration of health professionals.

Fig.1 Extract taken from the MoH Strategic Plan 2011-2015
Literature Review

HRIS is an information system that is integrated into the broader Health Management Information System (HMIS). It is more focused on the Human Resource aspect of the Health Sector (Health Management Information Systems; IDS Health & Development Report, 2010). HRIS enables HR Managers to have a database whereby Staff information is easily accessible.

HRIS stands to ensure that there is continuum of work with the least amount of stress placed on existing resources. As with any Information System, it has constrains and challenges. It is well established that in order to function effectively and efficiently, an organization needs a well-rounded Human Resource department. This ensures that workers progress is not stunted (Cacace.M; Ettelt.S; Brereton.L; Pederson.J; Note.E; 2011).

HRIS is an integral component of any business. How well the HRIS is utilised depends on a number of factors. One school of thought is that HRIS is regarded as an organisational unit within the HR area which specialises in human resource systems (Raymond McLeod, JR; Gerardine DeSanctis, 1995). The other school of thought sees HRIS as a system that processes human resource information, anywhere, any place and anytime (Raymond McLeod, JR; Gerardine DeSanctis, 1995).

The shift from a manual based system towards an automated system in large public health organisations is a challenge, moreso in emerging economies. Despite the usage of PCs, internet and other social networking media, people that have access to information systems may still lack the appreciation of how the system can improve their work and maximise optimum output.

At junior levels, the users see the information as a mere data whereas at a strategic management level, the data is valued given that it assesses and analyses HR trends. These trends will then enable management at a strategic level to gauge how HR can be managed and maintained; how its usage supports an organisation’s core business and how it is assessed in terms of the evaluation of its performance and cost effectiveness.
Background of HRIS

The first HRIS were introduced in the 1960s and 1970s. The personal information of an employee was punched into a card form to computer storage (Leonard, B; September, 1991). This system was soon outdated to federal legal requirements imposed on employers. US legislations required that employers have statistics on hiring policies and practices (McLeod & DeSanctis, 1995). Employers had to meet this legal requirement and the soon realised that the solution was to have a HRIS in place. The introduction of HRIS in the earlier years was not by choice but by external environments (McLeod JR. R & DeSanctis G, 1995).

The initial mindset that HRIS was simply an input and output source of information has evolved to a more strategic HRIS. It is argued that HRIS has the potential to assist businesses in developing their business strategy and enhancing organisation performance (Barney & Wright, 1998; Broderick & Boudreau, 1992; Gueutal, 2003; Lawler, Levenson, & Boudreau, 2004; Lengnick – Hall & Mortiz, 2003). This will be examined further.

Applications of HRIS

The two main primary focus and purpose of the use of HRIS is to:

(i) Have a personnel data for every employee. A master file of every employee is kept with HR. The master file contains every HR data concerning the employee.

(ii) Satisfy legislations. In Fiji’s case, the introduction of the Employee Relations Decree imposed by Government requires employers to have a HR process in place – whether it is automated or manual based. Large employers such as the University of South Pacific have developed their own in house HRIS. This was essential given that the University is not only located in Fiji but has campuses that is spread throughout 12 Pacific Island countries.

The perception of the HRIS users varies. The vast majority of users of HRIS simply use the system to replace manual processing and to reduce costs (Bee & Bee, 2002; Brown, 2002). With automation of HRIS, it is said that that HR professionals would have more time on their hands to to play a more leadership development and talent management role (Lawler et al., 2003). Further, HRIS should be able to assist HR managers to play a more strategic role and also support strategic decision making (Hendrickson, 2003; Lawler et al., 2004)
Studies carried on the challenges that organisation face when implementing HRIS (Yin, 2003; Youndt, Snell, Dean & Lepak, 1996), four main challenges were noticeable:

a) Difficulties in sustaining management attention

With changes to companies size, structure and ownership, the focus by managment to improve and enhance HRIS has diverted to more operational, managerial and financial issues. Resources that could be better allocated to HRIS is absorbed in other organisational and operational reserves (Dery.K, Grant.D, Wiblen.S.,2006). It will also depend on what the core business is for any organisation. In a Health environment, the core business would be to “provide a quality healthcare”. The priority and emphasis in a Health environment would require that majority its resources will go towards the primary care of medical personnel, medical equipment over the need to automate its HRIS data.

The implemention of any HRIS project or any information system needs designated key management to champion HRIS as well. The movement of key management that have been tasked to spearhead HR and the HRIS will disrupt the momentum and value of implementing a successful HRIS. This will also have a collateral impact on the overall objective of the organisation’s core business.

In any environment where a new HRIS is introduced, a senior manager must be tasked to spearhead the change within the organisation. Change management can be effective and successful if the objectives are met and moreso when there is a designated senior key manager that has the sole resposnsibility of ensuring that the HRIS succeeds.

With retirement, re-deployment, promotions, external and internal movement of senior HR personnel, HRIS has the potential of being under utlised if the key drivers are missing from the equation.

In the case study Cambodia’s Health Information System it was a major concern that their HIS data was not updated in a timely fashion due to high turnover of staff as a result of poor salary, lack of incentives and the mindset that the jobs that they were doing was not lucrative and money making(Cambodia’s Health Information January 2007). The laxaity of management in seeing the critical situation of a poorly managed HR affected the accuracy and timely update of the HIS data.
b) The complexity of HRIS

Users need to be aware of the core business of their organisation to have a better understanding of HRIS. Further to this, users need to have IT knowledge and basic IT experience.

HRIS is not a mere input and output process in its traditional context. The challenge is to train the users on the benefits of HRIS. HRIS will only be complex if the users are also not competent to work the system and moreso understand the capabilities of the HRIS.

In the case of study report of 4 African nations, it was found that the absence of Human Resource management capacity in the health sector is a key factor standing between success and failure of Africa’s effort to alleviate its crushing burden disease (AMREF & MSH, 2009). This case study revealed that there was scarce access to health care in areas; insufficient skills of workers and inadequate support for health personnel, low levels of motivation and performance and chronic staff turnover - all attributing to the failure of these countries health system. Study emphasised that Human Resource Managers need to be competent in a number of areas including Functions of Personal Policy. We pose the question - what if HRIS was introduced to these four African nations, would there have been a positive in their health system? With the usage and proper management of HRIS, it would have shown HR trends indicating the need to deploy the right medical personnel, with the right support staff to areas that needed medical attention.

Complexity issues of the HRIS by the users varies depending on the level of IT literacy level as well. A person can be competent in the usage of Word, Excel, Internet and Social media but may lack the basic understanding of other information systems tools.

c) Barriers to acceptance of HRIS & change management

Prior to the implemention of HRIS or any other information system for that matter, it is expected that there will be resistance from employees. The notion that an automated system will replace manpower will be one of the hindering factor of acceptance of HRIS. Coupled with this notion, users hold the view that HRIS will change their mode of work. Such insufficient understanding are some of the issues that prevent the successful implementation and maintenance of the HRIS.

The lack of understanding of how positive the HRIS can contribute to an individual’s work, contribute to the overall HR process and also contribute to an organization’s core business is lagging.

Not knowing or the lack of understanding an organization’s Corporate Statements as well such as its Vision; Mission; Values and Core business will not achieve the desired optimum level of business performance. People need to know and understand their Core Business first as this will give them a better understanding and appreciation of how they can contribute towards meeting
the core objective of their organization. In our case study of the MOH, their core business is ‘providing a quality of healthcare’. The under – utilization of their HRIS has an impact on the MOH’s objective. It can be said that when users fail to understand what and how their role contributes to the overall organizations objective, it will undermine and devalue their individual contributory input into the organization.

There is also the view that management’s lack of initiative in advocating the benefits of HRIS and how it can improve work process is also to blame. Having a user to simply input data without an appreciation of what their role is to the overall organization’s core objective will not gain the optimum performance from the user.

Kotter (1996) suggests that managing change is a set of processes that can maintain a complicated system of people and technology running smoothly. He further suggests an eight stage process to manage change:

- Establishing a sense of urgency;
- Creating the guiding coalition;
- Developing a vision and strategy;
- Empowering broad – based action;
- Generating short team wins;
- Consolidating gains and producing more change;
- Anchoring new approaches in the culture

He summarizes that steps 1 – 4 will help defrost a hardened status quo. Steps 5 – 7 introduce a number of new practices and the 8th step will ‘cement’ the changes in the corporate culture (Kotter,1996). He argues that this model could improve the capability of HR managers to manage change.

d) Financial constraints

A major challenge in the development of HRIS in emerging economies is finance, especially in the public sector (AMREF & MSH, 2009. The lack of a financially resourced organization will hinder the productivity of the workforce. Whilst the rest of the world is moving ahead with new technology, emerging economies like Fiji is still struggling to support its information systems.

Fiji public health sector is one of the least funded. Most of its resources are funded from within through the use of tax revenue. Given that ‘providing a quality of healthcare’ is a key factor of their business model, the least of their priority would be to enhance their existing HRIS and other information systems.
Conclusion

The overall conclusion shows that the HR management faces many limitations which constrict their ability to meet the needs of their population and also their organizations core objective. A workforce will be successful when managed well. A successful output will have a positive impact on how the HR contributes to the overall business objective. A contributing factor as well is the use of the HRIS. If the HRIS is utilized to its full extent and appreciated and valued by its users, it is conceivable that the workforce will meet or exceed their Business performance targets and also align themselves to the overall MOH’s vision.
Findings of Group Research

In carrying out our research, we interviewed the following MOH personnel:

1) (MOH HQ), User 1
2) ICT Support Officer User 2;
3) Medical Superintendent User 3;
4) Principal Administration Staff– MOH, User 4;
5) Administration Officer (HRIS) – MOH, User 5;
6) Human Resource Information Systems Officer User 6;

Objective of the Ministry of Health

The MOH formulated their Health Information Policy 2011 – 2015 (Policy). The policy looks at the timely and reliable health information for improving the healthcare of the individuals. The MOH is driven by its Vision to provide ‘a healthy population in Fiji that is driven by a caring health care delivery system’. In their policy, the MOH has recognized that information technology an important tool that will support their Vision.

Ministry of Health – An Overview

The MOH is the biggest health provider for in Fiji. In 2011, the PSC approved a total number of 3,628 employees for the MOH as compared to 3,452 for 2010 (Asante A, Robert.G & Hall. J; 2010)

Despite being the biggest health provider, it is estimated that only 70% - 80% of the population has access to primary health care whereas 40% have access to quality health care. (Jerety.J, 2010). The lack of resources in medical supplies, lack of skilled medical personnel, financing and infrastructure are just some of the factors that attribute to the MOH’s in ability to providing a satisfactory level of primary health access.

The public health structure of Fiji consists of the following:

- 3 divisional Hospitals
- 22 Sub - divisional Hospitals
- 78 Health Centers
- 128 Nursing Stations
- 2 specialist Hospitals
• 3 Old People’s Homes

The above statistics from the MOH do not include other privately funded hospitals and medical centers and clinics in Fiji. All divisional, sub divisional and health centers have medical doctors. Nurses only are responsible for manning the nursing stations. Within rural communities, non – salaried village health workers in Fijian villages provide basic first aid and assisting in the co – ordination referrals to nursing stations.

The MOH headquarter is based at Toorak, Suva. The MOH appoints Divisional Medical Officers for its Central, Eastern, Northern and Western Division and Medical Superintendent for each of the 3 major hospitals. With a large workforce spread throughout Fiji, the MOH has 1300 PCs and 30 servers. Not all 3628 employees have access to the PCs. The PCs are located in the MOH headquarters, divisional and sub – divisional hospitals only. Medical centers and nursing stations do not have access to PCs.

**Human Resources Information System**

The MOH hosts the following application softwares:

- PATIS (Patient Information System);
- FMIS (Financial Management System),
- HRIS (Human Resource Information System);
- Inventory Management and Warehouse System
- Public Health Information System

Apart from these systems, the users also have access to intranet and internet. Only users who have authorized clearance to these systems can access them. The HRIS that the MOH uses is known as the ‘People Inc System’. This new HRIS replaced the two existing softwares, the Personnel Director and the Recruitment Director. The new HRIS went Live on 29th June, 2011. The up – grading of HRIS is part of the MOH’s Annual Corporate Plan.

The HRIS can only be accessed at HQ, Divisional Hospitals and some Sub – Divisional Hospitals. There are super users that update data onto the HRIS. These super users are located at Divisional Hospitals and HQ only.

The Systems Administrators are based at MOH HQ and they have access to change the data that is uploaded on the HRIS. The users can ‘read only HR data’, this is important for security purposes. Access to the HRIS is not open to all MOH employees for confidential and privacy purposes.

The People Inc System has 4 modules:
Using MIS to deliver essential public services

- Web Client – accessed via Web Browsers on the MOH intranet and is mainly used by End users for data entries and updating of existing employee records. Reports and letters can also be generated using this module and also exported to other file types.
- Windows Client – there are 2 modes to this module. (i) normal mode used for data entries and (ii) expert mode is used for creation and modification of reports and letters.
- System Administrator – can only be accessed by the System Administrators to manager user profiles such as Usernames, passwords, and user privileges.
- Screen Designer – this module customize screens and fields and also the additional of new screens and fields. Also allows fields to be de–activated if not in use.

The ICT team is currently working on the Employee Self Service (ESS) system which can be accessed via the Web Module. This enables employees to request for leave online. Each employee will also be able to view their own personal information and leave balances as captured in the system. MOH anticipates launching the ESS in 2012.

Information Communication Technology Unit

MOH IT infrastructure (network) connects to 32 sites using IPVPN and leased lines to MOH HQ. The sites are located all over the country. The ICT main office is also based at the HQ. The Director of the ICT (User 1) for the MOH –holds a Degree in Computer Science and Information and Masters of Information Management. The ICT structure has 8 permanent positions, out of which 5 positions are filled. They also have non –confirmed staff that assists in the ICT unit as well. These non – confirmed staff work in clerical positions but have been deployed to the ICT unit to assist with their duties. The ICT unit deploys ICT support personnel to all 3 divisional hospitals. The sub – divisional hospitals in the Central/Eastern divisions are also supported by ICT personnel from MOH HQ. The ICT unit sets training needs to enhance ICT knowledge of their team. They also have a certified Microsoft Trainer based at the MOH HQ who carries training for the team.

One of the key changes that the ICT team has brought to MOH was to standardize all operating systems for desktops and servers to Windows 7 Platform. Previously, the operating systems had different softwares installed in the various PCs. This was a challenge for the ICT team.

All information systems are backed up regularly and daily. The main host of all the information systems is at the MOH HQ. The second back up data is located at the Department of Information Technology & Computing Service, located along the CBD foreshore of Suva. The IT policy of the ICT unit has three levels of priority of service calls. The first priority is within 1 – 4 hours, second priority is 12 hours and the third priority is 24 hours. The unit takes into account logistic challenges in getting to the users.
All divisional hospitals are connected to govnet —which is a wide area network (WAN) which allows access for its users anywhere and anytime. They are now moving toward a Microsoft based solution to allow (a) support for Microsoft; (b) inter-operability with main stream applications. This will allow for integration with its existing and new information systems. The Microsoft based solution is being funded by Aus – Aid and the MOH anticipates completion by 2013.

**Challenges of the ICT Unit**

The ICT unit faces a lot of challenges and this impinges on the progress of their work. The current challenges that they face are as follows:

- MOH HQ has a UPS at the headquarters. They do not have a generator at MOH HQ. They had put in a proposal for a generator for 2012. This is critical for business continuity purposes.
- The need for current ICT personnel to continue with their up–skilling and knowledge of ICT. The ICT unit has made available to the team training resources; the challenge is on the individual to make use of the opportunity. With new systems being implemented, the staff must be kept abreast with changes in technology.
- Not having sufficient or adequate ICT personnel to cater for ICT support.
- Current sharing of vehicles. The ICT team at MOH HQ has to rely on other department’s vehicles to transport them to sub–divisional hospitals.
- Not having the relevant information systems available to all medical centers. The unit is working towards the provision of adequate provisions PCs with connectivity of information systems throughout the MOH medical centres and nursing stations.
Staff response to the interview

a) User 2

We interviewed the ICT Support personnel referred to as User 2 based at CWMH. User 2 stated that he has 2 non-confirmed employees that assist him with ICT support at CWMH. They have been able to carry out ICT support with the current resources and they are adequately resourced.

His team has been issued with mobile phones which enables communication between the team and the users.

At divisional levels, they do not have a help desk system in place. This process is purely manual wherein users call the ICT team directly to log their complaints. There is no rating of priority of service, no record, no knowledge base of prior calls (history of faults) for the users.

User 2 stated that 20% of the users at CWMH lack basic IT literacy and competency. The challenge is to educate the users to have a better understanding of the capability of the HRIS and other information systems as well.

CWMH is supported by the 3 generators in cases of power outages. The generator that supports its information systems has a capacity of 450kva. At its maximum usage, the generator can operate for 30 – 45mins.

b) User 3

User 3 says that he can access the HRIS but does not access it directly. Any information that he requires from the HRIS, he retrieves it from the HRIS officer. His main concern is the PATIS which he accesses on a daily and regular basis. The PATIS meets is linked directly to the MOH’s core objective and the accessibility to this information system is a priority for him. He says that he has authority level to access other information systems but does not access it.

In comparison with data accuracy between the PATIS and HRIS, User 3 says that the HRIS data is 90% accurate compared to PATIS which he rates at 80% accuracy. His perspective is based on the fact that PATIS may not be updated regularly as compared to the HRIS.

As stated by User 3, he is able to gauge through the HRIS that there is a consistent number of 375 nurses reporting to work every month. The total number of nurses engaged at CWMH is 500. The ideal ratio of 1:1 care of nurse to a patient is not prevalent under the current structure. Nurses are absent due to sick leave; annual leave; study leave; maternity leave and also leave without pay. The reflection of this ratio is not consistent with the MOH’s core business given that it affects their healthcare service delivery to the public.
User 3 says that the ratio of nurses to patients at the Labasa Hospital is 1:1. Labasa hospital has the advantage of recruiting nurses directly from the Labasa Sangam Nursing School (Vanua Levu based) and the Fiji School of Nursing (Viti Levu) whereas all public and private hospitals based in Viti Levu are recruiting from one source - The Fiji School of Nursing. In order to meet the quality healthcare delivery, a 1:1 ratio is the ideal scenario.

User 3 added that the authorized users of HRIS can access data as well for Lautoka and Labasa Hospital. However, HR data for medical centers and nurses stations around the country are not possible given that they do not have connectivity to the HRIS.

Every year, the MOH exceeds its budget allocation. An increase in CWMH budget allocation alone was requested for the 2012 and an increase in the budgetary allocation has been catered for.

c) User 3, 4 and 5

Since the implementation of the HRIS, the HR unit has not seen the full potential of the HRIS. As stated by the Principal Administration Officer (User 4) and the HRIS Administrator (User 5), the challenge for all the users is to understand that the HRIS is a tool that will assist them in their work and also that it will align their work process to the MOH’s core business.

The super users are required to update on a daily and basis HR data into the HRIS. They are also responsible to train their end users, assist in data input and also monitor and edit data inputted by the end users. Any concerns that the super users have with regards to the HRIS, they can liaise with the HRIS Administrators.

The regular updating of HR data is not done consistently by the super users—this has been a challenge to the HR management and Systems Administrators given that they are not receiving up-dated HR trends in a timely manner. The inconsistent information of data does not give the Systems Administrator and the HR management confidence to rely solely on the HRIS. They often rely again on the manual based source.

All super – users had a timeline to up-date all HR data into the system by 16th November, 2011. Time has been extended till the end of December, 2011 for all HR data to be up – dated into the HRIS.

Despite the existence of the HRIS, the HR unit still does manual base back up. The HRIS was designed to store and analyze data, moving towards a paperless system. The HR unit still store HR data on paper files despite the existence of the HRIS.

Emphasis is placed on the super – users that the HRIS is “here to stay” and will be used by Senior Executive Managers, Senior Managers and Managers for daily decision making. The updating
of the HRIS system is not to be seen as an additional responsibility to the users and super users current job description but an improvement on the manual based.

There is a HRIS Project team and the HRIS champion project leader is User 5. She further stated that all super users need to work together to make HRIS a success through the collective effort of everyone.

The provision of electricity at some of the medical centers which are located in rural areas is a challenge. Given the financial constraints, majority of these medical centers and nursing stations do not have any back up source or any access to PCs. Retrieving HR data from nursing stations and medical stations can be challenging given their lack of access to information systems.

The HR departmental heads delivers to the Minister of Health every Monday the HR trends of the MOH. The accuracy of the data contained in the HRIS is not 100% accurate.

Both Users (5 & 6) stated that the MOH has added the additional job responsibility to both the super users and users that the updating of HR data into the HRIS is part of their job description.

All medical centres and nursing stations HR requests for leave, promotion, etc are assigned to one (1) clerical officer who is based at the sub – divisional hospitals. HR information are sent manually to the sub – divisional hospitals.

d) User 6

CWMH has a HRIS officer, User 6, who is designated to update into the HRIS all HR data. She has completed 100% of all medical professionals with the exception of the medical officer interns. The administration and other support staff are currently being updated. The plan is to complete all updates of all CWMH base staff before the end of December, 2011.

The users that assist the super users are temporary employees. High turnover of temporary users makes training inconsistent and time consuming process on the super users.
Discussion of findings

Our case study on the MOH shows that the HRIS is indeed an effective tool of information. At strategic level, MOH senior management executives need timely, accurate and relevant data from the HRIS to make strategic HR decisions. Our assessment on the HR data is that it is not complete, accurate, timely and trusted with the current system that MOH’s current operation. Not all sub – divisional hospitals have access to the HRIS. All medical and nursing centers do not have access to HRIS. They all send their HR reports manually to HR (either faxed or post).

Our findings are summarized as follows:

(i) **User Ownership** - The traditional mindset that information system is a mere data input entry seems to be the conceptual ideology of the HRIS users. It needs to be entrenched in the super users and the users that they play a critical role in their data entry. The accuracy, timeliness, consistency and discipline of the data enable the senior executives of the MOH to assess and evaluate HR trends. We argue that there is a lack of ownership of the HRIS data at all levels. It must be instilled that the ownership of the HRIS data does not belong to the senior management. No matter how menial the users’ task may be, it has an impact on the MOH’s core objective. The data belongs to everyone. Where there is a sense of ownership, it will bring about a sense of responsibility as well.

(ii) **Employment Security** - The users in the context of MOH are simply ‘data entry operators’. These positions are held by temporary relieving clerks at a very junior role in the civil service structure. Given that their positions are on a temporary basis, the commitment from them would be lacking. As temporary position holders, we draw the analysis that there will be a high turnover of users – which is already happening. The super users are already tasked with the principal role of ensuring that HR data is updated into the HRIS system with the additional responsibility of training the users. It can be challenging and also frustrating to keep training users given the high turnover. The lack of understanding of the value of the HRIS by the users would be undermining the objective of the implementation of HRIS. An ideal situation of making a turn around such as situation is to introduce fixed term employment contracts either on project basis or long term. Such a move could, most likely buy a some sort of commitment and loyalty to the job, which in a way, a sense of permanency may deter high staff turnover.

(iii) **KPIs** – The inclusion of data updates into the HRIS as part of the users and super users Job descriptions seems not to be taken seriously by the two users given that they have already exceeded the time frame. The status of updating the HRIS has already gone past the required date (ie: 16th November, 2011). In a commercial environment, this would be a
key indicator that a person is not meeting their KPIs. The issue of not keeping with deadlines, commitment to quality (without need to have senior management day to day monitoring) appears to be an issue. Where the culture of lenience seem to be prevalent, a solution to this could be that the Ministry include KPIs on the employment contracts for users, supers and administrators and any other senior management personnel who is directly in charge of the HRIS updates.

(iv) **User Training** - The IT unit to work in collaboration with HR to carry out training throughout the MOH. This will educate all users on the HRIS and to have a better understanding on its purpose and overall objective and have a sense of ownership of the HRIS.

(v) **Well Resourced ICT unit** - they can only work within their budget allocation. They have ensured the operating systems are standardized which is important given that it allows information systems to integrate. Given the challenges with transportation and additional manpower, the MOH may wish to review resource allocation to ICT as part of the entire resource re-alignement to make an MIS a key driver of performance and quality healthcare delivery.

(vi) **IT and IS Competency & Literacy level** - basic IT and IS competency assessment to be implemented. This would gauge the basic level of understanding of the competencies of the users. Those that do meet the minimum competency level will not qualify to be users. The current IT policy should also define IT literacy. Some users have a basic understanding of Word, Excel, Intranet and Internet but lack basic understanding of the use of the HRIS. Users of the HRIS must achieve an acceptable level of understanding of the HRIS and the function that it plays in the overall MOH HR planning.

(vii) **Cultural Mindset Attitude/Change Management** - Given the delays of updating HR data into the HRIS and the frustration it brings to the MOH HQ, there needs to be a designated senior executive management to spearhead the HRIS. The current status of HRIS is not updated and therefore unreliable despite training and reminders on the timely and accurate updating into the HRIS. Given the investment of resources into the HRIS, the Minister of MOH must delegate to one his senior executive managers to Champion the HRIS. At this level, this would give some sense of urgency for users, super – users to ensure that HRIS is reliable, accurate, timely and complete.
We have taken into account the statement made by User 3 wherein additional nurses will be engaged at CWMH for 2012. We agree with User 3’s view that there needs to be a ratio of 1:1 as this reflects on their core objective, however we disagree that the additional 125 to the existing nurses number will resolve shortage of nurses. KPIs need to be strongly enforced, which has always been a challenge in the public service sector. This can curb nurses’ shortage.

The BackUp Plan. The ICT policy is embarking towards having information systems available to all MOH facilities, which includes HRIS as well. There is a need to have clarity on the necessity of back up for data on site and offsite in a secure place to prevent unavoidable data loss, especially in the case of natural desaster. In similar vain, a generator at MOH HQ in cases of power outage is required. This is critical and crucial given that the HQ has the server for all information systems, and anytime out might cost lots more money than the few thousand dollars that could be spent on a back up generator.

Conclusion

HRIS is seen as a tool that can assist managers in making strategic decision making. The traditional mindset that HR information is merely to collate data of an individual’s employment record is now outdated. Businesses have adopted information systems such as HRIS to enable them to make strategic HR decisions.

The usage of HRIS in the public health sector environment can be a useful strategic management tool for senior managers and executives if utilized efficiently and effectively as they will be able to make proper planning and management of their workforce. The focus and aim of providing quality health service is evident but the concept of using HRIS to enhance the delivering of health services is not considered a priority, especially for an emerging economy like Fiji.

In our case study of the MOH, we conclude that the HRIS is not being maximized and utilized to its full potential. Developed economies do not hesitate to fund their health sector and equip it with the best information systems because they know that statistic show that HRIS has improved their healthcare service to its people.

Resources are allocated to improve the quality healthcare. Resources such as the provisions of medical supplies and other operational expenses is a priority in medical environment, however the effective and efficient allocation of these resources needs the input of the human resource component. The absence of the HR component and HRIS will staggering processes and this creates a negative impact on the core business.
Kotter’s (1996) 8 step process should be introduced and implemented in the MOH environment. The model is not only applicable to senior level but it cascades from the highest ranking officer to the junior officer. There is potential of the HRIS that it can offer to the MOH. It just needs to be better managed and well capitalized to maximize strategic human resource management.
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Appendices

Annexure 1 – MoH Strategic Plan 2011 - 2015

As a guideline we have used the MoH Strategic Plan 2011-2015 as reference.

Fig 2. Extract taken from the MoH Strategic Plan 2011-2015

GUIDING PRINCIPLES

The guiding principles for the Ministry of Health are:

**Vision**

A healthy population in Fiji that is driven by a caring health care delivery system.

**Mission**

To provide high quality health care delivery services by a caring and committed workforce with strategic partners, through good governance, appropriate technology and appropriate risk management, facilitating a focus on patient safety and best health status for all of the citizens of Fiji.

**Values**

**Customer Focus**

We are genuinely concerned that health services are focused on the people/patients receiving appropriate high quality health care delivery.

**Respect for Human Dignity**

We respect the sanctity and dignity of all we serve.

**Quality**

We will always pursue high quality outcomes in all our activities and dealings.

**Equity**

We will strive for equitable health care and observe fair dealings with our customers in all our activities, at all times, irrespective of race, colour, ethnicity or creed.

**Integrity**

We will commit ourselves to the highest ethical and professional standards in all that we do.
### Responsiveness
We will be responsive to the needs of the people in a timely manner, delivering our services in an efficient and effective manner.

### Faithfulness
We will faithfully uphold the principles of love, tolerance and understanding in all of our dealings with the people we serve.

<table>
<thead>
<tr>
<th>User Type</th>
<th>Data Input</th>
<th>Data Management</th>
<th>Data Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Acting Director ICT &amp; Planning</td>
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<td>adequate</td>
<td>adequate</td>
</tr>
<tr>
<td>2 – ICT support office – CWM</td>
<td>adequate</td>
<td>adequate</td>
<td>adequate</td>
</tr>
<tr>
<td>3 – Medical Superintendent</td>
<td>adequate</td>
<td>adequate</td>
<td>adequate</td>
</tr>
<tr>
<td>4 – Principle HR Admin Officer – MOH HQ</td>
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<td>not adequate</td>
<td>not adequate</td>
</tr>
<tr>
<td>5 – Acting Administration Officer (Systems Administrator) – MOH HQ</td>
<td>not adequate</td>
<td>not adequate</td>
<td>not adequate</td>
</tr>
<tr>
<td>6 – HRIS Officer (Super User)</td>
<td>Inadequate</td>
<td>adequate</td>
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Annexure 3 - Questionnaires

User 1 & 2

1. Do you have a HRIS? Finance; HR and Client Data
   - Yes
   - System is called the SOPHOS.
   - We also have a PATIS, HRIS; FMIS; LMIS (Lab Information System); EPICOR (usage by the pharmacists); Email; Internet support.
     a. Is it an in – house system (built in house) or purchased off the shelf or is it open source (ie FOC);
     - Purchased.
   - b. What is your ICT’s dept’s annual budget? What plans do you have for ICT’s expansion plans?
     Does not know. The budget controlled by MOH.

2. What is the ICT infrastructure of the MOH (specifically for hospitals)? (we would be expecting answers such as a server room; structured cabling; wireless facilities). Medicine has moved to wireless technology in 1st world countries.
   - Server at MOH HQ
   - The back-up is at Vatuwaqa – Pharmacy.
   - The entire hospital at CWMH is wireless – HRIS can be accessed anywhere from the CWM premises;
   - Do the users in Lta have access to the same information or different information;
     Yes they do. They also have their own ICT support team. We all linked to MOH’s HQ system.
   - What about the users in other medical centres; divisional hospitals?
     Only Labasa; Lautoka & CWMH have in house ICT support system.
   - Is electricity available to all MOH’s hospitals; medical centres?
     Yes it is. Once electricity is down at CWMH, we have 3 generators. The main generator is 450kwhz which supports all our systems.
     • Electricity a challenge for rural medical centres (refer to MOH report)
- Does your ICT have its own fleet of vehicles? Do they share vehicles with other depts?
  (In Cambodia, the ICT staff could not execute their ICT services to the users b/c of logistics problems. This was a concern to the users b/c they could get their ICT problems sorted out in time)

*Given that we look after CWMH, there is no need to have a vehicle. There are 3 ICT people altogether that support CWMH. CWMH has an approx number of 700 employers – not all have access to computers. We have mobile phones which enables the users to calls us – the cell network is within a group and all calls are free. This is useful.*

3. Tell us or show to us your IT organizational structure? (can be part of the annexure)

- How many pple in your dept are directly supporting the MIS system?
  3 pple

- When new features added to the system, how does ICT convey to its users the usage of these new features (eg : upgrading of MIS)
  (need to ask HQ)

- How do you measure the value of the training (ie: desired answer is that ICT receives less support calls)

- What HRIS standards do you follow or benchmark against? (ascertain ISO standards for ICT) (* critical qstn).
  Ask HQ.
  We do not do any benchmarking. The system has to be tailor made to our local requirements.

- Does the ICT dept have an ICT committee?
  o Who sits on this committee (ie: what we need to ascertain is whether the users are part of this committee & whether the users needs & requests are then programmed into the system to enable them to have the required data). Eg: we will see in our literature review for 1st world countries that ICT personnel sit on strategic committees – the users see the importance of their input to assist them with their work?
  We have a qrtly meeting. All ICT staff are called to HQ.
o Does the ICT have a strategic plan? Does the plan go up to the Minister or policy/decision makers? (ie: again in 1st world countries, the strat plan for ICT is critical to user information). The CEO would expect a ICT strat plan from the ICT Head) – what is the case study for Fiji.
Ask HQ

o Are the ICT strat plan implemented (the strat plan would have for instance a plan that all hospitals; medical centres must have access to ICT infrastructure)

4. What do you use your HRIS for? What are the important features (we need to ascertain whether it is a simple HRIS only stores data or is it a system that is sophisticated that it analyses data for its users)
Currently the HRIS only stores data. Does not give any analysis
MIS are used for planning, monitoring & control. HRIS will provide a manager a daily report of the % of people who are on vacation or called in sick – from pg 45 of the textbook.

5. Apart from storing data (ie: annual leave), what else do you use it for? Eg: is it a flexible system to accommodate requests from the users? (eg: Dr wanting to know the number of patients that have HIV in Fiji and in what format can the date be displayed to the user (ie: date needs to be understood in the context of that person – pointless for a Dr that the data is in word format – they would prefer to have data in a numerical format).
Just stores data. There is room for improvement to upgrade the system to have a more sophisticated output. HRIS is adequate.

6. Can the doctors access the ICT infrastructure from anywhere within the Hospital premises? (Qstn to be posed to the Dr whether he can access data from anywhere in the Hospital)
Yes. System is web – based – users just need to enter their user name & password.

7. How often does the ICT back up its data?
Daily.

8. Do you have an off – site back up? (this is for back up disaster recovery but also ensures that there is business continuity)

- What redundancy solutions do you have? (business continuity). Eg: server goes down – is there another data base that users can access data from?
Yes – at Vatuwaqa.
- What power redundancies does MOH have? (ie: power generators?).

  We have 3 power generators.

9. How do you secure your data?

  Data secured.

  - Authority level (only Heads of Medical Depts. can view confidential data) can access the

    There are restrictions in place. For Doctors, they can Read only the HRIS but they cannot change the data. The data can only be changed by the HR dept.

  - How does ICT protect itself against virus and malware (ie; Trojans)

    Anti Virus system. Automatically up dated when you log on and when you log off.

  - Un-authorized access – what do you have in place to ensure that they do not have access to this system?

10. Data

  a) How do you ensure that the data is accurate? (ie: there is a data process called data scrubbing – users having access to the HRIS need assurance that the data is accurate). Eg 2: my title is CEO – whose job is it to change the title in the HRIS (change information);

    It is accurate – just need to ensure that the person entering data into the system is entering the correct data.

  b) Does the system monitor change (eg- I change a patient’s data, MOH should be able to know who changed it, time& what was changed)

    Yes – it can monitor change.

11. Availability

  - In a year (365 days), we would expect the system to be available 99.9%. Is there promise of availability?

    2 hours down time for internal.

    If external (ie: ICT), downtime can be for a 1 day.

  - How do you manage upgrades? (upgrades will result in shut down);

12. Accessibility

  12. Do all your users have access to HRIS? (ie: Doctors; nurses; support staff – all divisional hospitals; medical centres)
For CWMH – all users should be able to access the HRIS.

13. What are the department’s future plans or desired outcomes for HRIS in the MOH?
   - For CWM to have a centralized ICT server – can reduce downtime.
   - Currently, only 20% of CWM’s workforce is computer literate. Challenge is for all staff to be computer literate. It will make the processes of CWMH much easier.
User 3

1) What kind of information do you access?
   HRIS
   PATIS
   FMIS

2) Are there other access information that you would like to access to but cannot get? ( ie: access of medical results from private hospitals & clinics from Fiji, South pacific island countries).
   At the moment, my access to HRIS is only to CWM. I can access Lautoka’s HRIS – but never tried.
   The Medical centres do not have access to HRIS.

3) How helpful or useful is the current HRIS for you?
   Very useful.
   - Helps with succession planning
   - Managing HR – annual leave, etc
   - The current HRIS currently tells me how many doctors are based at CWM; how many females/male doctors/nurse & support staff.
   - MOH is moving towards a Microsoft based system – this is currently being re – vamped.
   - Adequate system

4) Does it help you in your work? Do you use it to make important decisions?
   Yes . For instance, nurses in charge will approve individuals annual leave. From an executive perspective, the HRIS will indicate to me how many nurses overall are applying for annual leave at CWM. We currently have 500 nurses. At any one time, we will have 125 nurses absent from work in a month (either through AL, maternity leave or sick leave or leave without pay). I have recommending in our 2012 budget that I need an additional 125 nurses. There are currently 500 beds at CWM. The ratio is currently 1:3 (1 nurse to 3 patients) due to the absence of the full 500 nurses at any one time. With my request for increase in budget allocation for more nurses, I will have 625 (the additional 125 will be on standby). These nurses will be employed permanently to ensure that patient care but also ensures a ratio of 1:1.

CWM &Lautoka Hospital & other divisional & medical centres in VitiLevu have to employ from the Suva based Nursing School. The ratio of nurses to patients at Labasa is 1:1. The reason being is that Labasa has the Sangam Nursing School. It is easy for Labasa Hospital to recruit
immediately from the Sangam Nursing School – issue of lack of nurses to patients is not a concern compared to CWMH.

5) What is the extent of the use of the HRIS do you understand?  
(if not accessing – then it shows that they have an ineffective HRIS)
- Gives me trends on staffing numbers.

6) Have you received any training on the HRIS itself or any additional features to the HRIS?  
No. Even though I can access the HRIS, I do not access it myself. Any information that I need from the HRIS, I simply call the HRIS officer who is based at CWM. She will tell me the information that I need.

7) How accurate is the data that you receive from the HRIS?  
90% for HRIS  
87% PATIS

8) How timely is the data?  
Quite timely.

9) Is the data ‘complete’?  
Adequate but can be better. Needs to give me an analysis of annual leave of staff. Right now, I receive the data from HRIS officer – I then make the analysis on my own.

10) In a year, what is the ratio of the number of doctors to the number of patients (ie: look at the Fiji’s report)
- If answer is in the negative – we can then ask whether it is important whether they should know that (Group – our literature review of 1st world countries show that doctors have access to this data as it helps them with the HR planning)

11) In your opinion, does the HRIS give you readily available access?  
Adequate – can be better
- If system is down – how long is it down for?  
  System is down so many times.
- If the system is down, how does it affect your work?
Does not affect my work given that I do not access it directly.

12) How responsive is your ICT team to HRIS queries that you raise?
   *Quite responsive.*

13) What would be a desired HRIS for you?
   - *Robust system*
   - *I would want my staff to be able to access the PATIS/HRIS (eg) of other hospitals.*

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Questionnaires for the Human Resource Officers MoH-Headquarters

Name:

Title:

Questionnaires:

1. Is there a HRIS in place?

2. When was it implemented?

3. Was there any previous HRIS system, prior to the current one that is now in use?

4. Who has overall responsibility of the HRIS?

5. Who has overall responsibility in the training of the users?

6. What is the level of qualification of the users?

7. Who has authority to access the HRIS?

8. Who has the authority to change information in the HRIS?
9. Was there any awareness or training done when the system was introduced?

10. What are some challenges faced with the system and how they are dealing with it?

11. Do they think is the system strategically supports the delivery of their core business?
Annexure 3 – Minutes of Meeting

- END OF REPORT -