



FSH ICT Status & Readiness Working Paper

FSH ICT Status & Readiness Working Paper

TRIM	Reference
The PMO will enter the TRIM number of the document below	

DATE OF ISSUE:
6 December 2012

Document History

Version #	Version Date	Author	Description
0.1			Draft Version
1.0			Final Version

Document Review

I, the undersigned confirm that this document content is true in nature and substance, and that its contents accurately reflect its purpose.

Name	Title	Signature	Date

Document Approval

I, the undersigned, have approved this document.

Position/Title	Name	Signature	Date
HIN ICT Lead	Jon Harrison		
Chief Executive FSH Commissioning	Dr David Russell-Weisz		
Director General Department of Health	Kim Snowball		

© DoH

The Copyright in this work is vested in Department of Health, Government of Western Australia and the document is issued in confidence for the purpose only, for which it is supplied. It must not be reproduced in whole or in part or used for tendering or manufacturing purposes except under an agreement or with the consent in writing of Department of Health, Government of Western Australia and then only on the condition that this notice is included in any such reproduction. No information as to the contents or subject matter of this document, or any part thereof arising directly or indirectly there from shall be given orally or in writing or communicated in any manner whatsoever to any third party being an individual firm or company or any employee thereof without the prior consent in writing of Department of Health, Government of Western Australia.

Table of Contents

1	Introduction	4
2	Executive Summary	5
3	Background	6
4	Current Status	7
5	Issues and Risks	9
	Impact on Facilities Manager (FM)	10
6	Revised Implementation Approach	13
7	Core Applications to be delivered	14
	Core Clinical Systems	15
	Core Administrative Systems	16
	Enabling Technologies	16
	Infrastructure	17
	Critical Timelines and Dependencies	17
8	Key Achievements to Date	19
	Patient Administration Program	19
	Corporate Program	19
	EMR Program	19
	Portal & Interoperability Programs	20
9	Conclusions	20
10	Key Recommendations	21
	Appendix 1: Solomon Review	22
	Appendix 2: PWC Report Executive Summary	23
	Appendix 3: HIN Project Delivery Review Report	24
	Appendix 4: HIN Organisational and FSH team structure	25
	Appendix 5: Financial Position	26
	Appendix 6: Applications and deployment methods for FSH	31

1 Introduction

The FSH will build upon the WA Health Strategic Vision through the practical delivery of a fully digitised hospital over time. It will not be achieved on day one of operations. To achieve a Digital Hospital, there are four essentials that need to guide the project from the start:

- To rationalise the hospital space by re-organising services more logically, thanks to the “virtualisation” of information and to the transfer or outsourcing of technical services
- To automate heavily the infrastructure to reduce menial tasks that add little value, and re-deploy staff towards patient care
- To communicate in full IP (Internet Protocol) to avoid redundancies of different information systems, and leverage the capabilities of a unified information system
- To make the building smart with sensors to recognise movements of people or changes in the environment

Whilst some aspects are well catered for (including smart building technologies and reorganizing services, WA Health has some way to go in realizing points 2 and 3 as this requires not just technical solutions but clinical and administrative redesign. The level of complexity of the legacy WA Health clinical ICT systems and the requirement of workflows across multiple systems (WA Health and FM related) demands appropriate and well defined controls to enforce standards around the information dataset including architecture, security and safety, processes and interoperability. There is critical clinical risk if the overall ICT program (HIN and FM) is not aligned and allocated sufficient time for clinical testing of processes, workflows, procedures, protocols and systems.

This report sets out how this program is being delivered, identifying the key streams of work, timescales and resources. The report includes key risks, their impact on the program and how these are being managed in order to deliver a safe, functioning hospital that minimises the impact on the Facilities Management (FM) provider. The report includes recommendations to ensure that key risks are clearly identified and appropriate treatments are in place and managed.

2 Executive Summary

The Fiona Stanley Hospital (FSH) was proposed to be a fully digitised hospital, a vision that has not been fully realised anywhere in Australia. The achievement of the ICT component of FSH was always dependent on:

- The hospital being able to operate safely;
- The capability and capacity of WA Health to apply new technologies within a complex patchwork of legacy systems;
- The capability and capacity of the Facilities Management (FM) to introduce and apply new technologies;
- The ability of both parties to integrate within a brand new, redefined tertiary hospital setting; as well as
- The readiness of the organisation to accept significant workflow change, inherent in delivering the FSH vision.

Over the past 12 months, a number of reviews of the "health" of the ICT components of FSH have been undertaken and these have raised varying but significant degrees of concern regarding capability and progress.

In November 2012, new governance and management arrangements for the total commissioning of FSH, under the leadership of a Commissioning Chief Executive (CCE), were introduced by the Director General of Health. Since then, the CCE, Dr Russell-Weisz, has led an intensive stocktake of the status of the ICT component of commissioning.

This report outlines the key issues arising from that review and recommendations on the strategy to commission the hospital safely and over the most appropriate commissioning timelines. Key findings include:

- a lack of coordination between the ICT projects within HIN, the FM and with the other commissioning streams;
- the need for a dedicated FSH ICT team;
- insufficient recognition of the unique needs of FSH and the requirement for some tailoring of ICT solutions;
- a number of the critical core applications are behind schedule and will not be able to be delivered within the current target date of April 2014;
- insufficient time has been built into programs for testing and commissioning of ICT components (both from the HIN and Facilities Management/Serco (FM) perspective); and
- the need to work more in partnership with the FM to achieve the planned benefits.

It is recommended that the Taskforce:

- Note the significant changes to the ICT program governance and management.
- Note that, even with a more pragmatic approach, it will not be possible to safely commission FSH by the planned date in April 2014, because key ICT applications will not have completed development, testing and implementation and that a subsequent delay of 9 to 12 months is expected in order to achieve a basic, safe, partial digital hospital.
- Note that alternative technical options in relation to delivering a more basic ICT solution by April 2014 – including replicating the same technical setup as for example

in Royal Perth Hospital - are currently being reviewed by HIN however it is important to note that once each option is defined it will require a subsequent detailed impact assessment on the envisaged hospital operations/workflows, physical facility design (workstation, storage requirements, etc.), FM contract and workforce attraction. Because of these flow on effects it may be that the delay is the same or longer and the ICT solution inferior. Furthermore time constraints mean that this analysis cannot be protracted since this cannot push out the already envisaged delay to opening.

- Endorse a changed overall strategy to achieve this revised timetable, based on:
 - Prioritisation of effort towards core critical systems;
 - Work closely with the FM to minimise the amount of integration;
 - Completing the development and implementation of those required applications that can realistically be achieved within the revised time frame;
 - Virtualisation of other critical applications that cannot stand alone on local equipment and cannot be replaced/developed within a reasonable timeframe;
 - Essential upgrade of existing applications to ensure stability; and
 - Transfer essential but less critical applications (in their existing form) to run on local equipment.
- Note that, to achieve a revised partial digital scope and timetable, an additional \$30.1M of funding will be required; cash flowed over the next three financial years.
- Endorse the commencement of commercial discussions with the FM in order to recognise that both parties (the State and the FM) are behind schedule and seek to minimise the State's exposure to penalty under the contract.

3 Background

- Prior to making a final decision on the funding for WA Health ICT, in December 2011 the Department of Finance (DoF) in conjunction with the Department of Health, commissioned an independent expert review of WA Health's planned investment in Information and Communications Technology (ICT). The recommendations of this review (Appendix 1: Solomon Review) and the final funding allocation by Economic and Expenditure Review Committee (EERC) did not necessarily align, however it did result in WA Health receiving some funding for specific programs including WebPAS, Health Identifiers, Identity and Access Management, Portals, Laboratory Information System and Clinical Workbench. Health was instructed to prioritise the reduced budget allocation (to what was requested from the original Solomon Review) to Albany Health Campus and FSH. This reduced budget allocation required WA Health's Health Information Network (HIN) to review the ICT Capital Works scope of activities.
- The impact of the reduced 2012/13 funded program has left some core systems at risk as they have not been funded. There is also a shortfall in funding to significantly renovate/remediate other systems needed to be integrated into a new FSH technical environment. This includes the Picture Archive and Communications System/Radiology Information System (PACS/RIS), the Laboratory Information System (LIS) and the Human Resources Information System (HRIS/Alesco).
- In May 2012, the South Metropolitan Health Service (SMHS) commissioned Price Waterhouse Coopers (PWC) to review the alignment of WA Health's ICT Services Plan for FSH with Serco's FM ICT solution (Appendix 2: PWC Report). The purpose was to identify a common roadmap for implementation of ICT as well as to identify any interfacing issues. The report identified significant schedule pressures for the design, procurement, development and implementation of the relevant ICT components by the FM with a high level of interrelationship between the South Metropolitan Health Service (SMHS), HIN and Serco. The report noted that in order to successfully open the FSH in April 2014, with integrated ICT and new models of

care supported by digital workflows, there was a critical and compelling need to mobilise a cross agency and functional team to:

- Design future state clinical and non-clinical processes aligned with the FSH Vision and ICT enablers;
 - Design and document key systems blueprints;
 - Integrate HIN, SMHS and the Serco ICT work plans;
 - Resource cross-functional business advisory working groups (BAWG); and
 - Enhance clinical engagement and begin the change management process.
- Up till now HIN's approach to delivering FSH has been in addition to dealing with other WA Health competing issues and risks.
 - There has been a focus on implementing new applications/technologies and developing additional functionality in existing systems prior to ensuring that all elements of the core existing applications function within the proposed new FSH ICT environment.
 - There have been delays in initiating projects required and unclear scope within initiated projects as to who manages the interdependencies and integration within HIN and between HIN and the FM.
 - Progression of the ICT program without a FSH clinical reference group has resulted in ICT leading change to existing work practices and processes. The recent appointment of clinicians to the FSH ICT program is already resulting in the need for some projects to be rescoped and redirected to ensure they deliver functionality that is clinically safe and acceptable.
 - There is still an ongoing lack of clarity around the large number of WA Health applications (core systems and those local hospital based applications that clinicians are using and will expect to be at FSH) and the technical solution to deploying these to FSH.

Given the points above there has been a need to regroup and ensure that ICT at FSH can be safely deployed initially as well as establish an ICT foundation that delivers benefits in both the medium and long term. This will result in a reduced scope of what can realistically be delivered by the opening of FSH, rather than what was originally envisaged. The priority across WA Health is to ensure an operational hospital day one and a clear roadmap for achieving an integrated information/digital landscape over time.

4 Current Status

- The Health Information Network (HIN) produced the initial FSH ICT Services Plan in November 2011, prior to the outcomes of the WA Health budget process being known. At this time, the commissioning team for FSH was minimalist, the FSH Clinical Services Plan (CSP) had not been released and there were significant difficulties in identifying business owners to guide the development of the FSH ICT Plan. As a result, the initial FSH ICT Services plan reflects the aspirations of the original FSH digital vision and not the current achievable deliverables.
- There is an urgent need to rationalize the current FSH ICT solution to ensure that it is realistic, safe for patients, operable by clinicians and other health service staff, affordable both from a capital, recurrent and operational perspective, can interface now and over time with the FM's contracted ICT solutions, and most importantly is achievable in terms of technical capacity, clinical engagement, process redesign and change management by the opening of FSH.
- The original FSH ICT Services Plan has been subject to an initial realignment by the newly appointed FSH ICT Commissioning Governance Group (CGG) (formed in November 2012 under the new FSH Governance structure and reporting to the FSH

Steering Committee) to define the final ICT landscape and architecture for FSH (see Core Applications to be delivered page 15). This includes:

- Core applications required to deliver a safe, opening hospital;
 - Existing clinical applications that need to be transferred from other sites (in excess of 200);
 - Any system wide remedial work that needs to be done to the above two areas;
 - Applications that are required as part of the Serco FM ICT interface; and
 - Requirements for virtualization and/or reassessment of ICT space on site.
- A dedicated team within HIN to deliver the FSH solution has been formed and internal processes are being rationalized to improve the focus on delivery. Dr Andrew Robertson has been recently appointed as the new Acting Chief Information Officer and has worked closely with Jon Harrison (FSH HIN ICT Lead) to develop an organisational and FSH team structure that will best support FSH ICT delivery (Draft at Appendix 4).
 - In depth questioning and analysis of the HIN FSH ICT team and current program status has been undertaken by the FSH CCG, led by the newly appointed Chief Executive FSH Commissioning, from early November 2012 to date.
 - As part of this, a clinical risk review of the FSH ICT plan has been undertaken which indicates an urgent need from a cost, design and governance perspective to re baseline what will be delivered into FSH and to create a 5 year road map to deliver the fully digital hospital.
 - A health check of all major projects that should, at this stage, be focused on delivery for FSH has been undertaken. The report indicates a current high level of risk in most projects and suggests that a balance be struck between delivering a functionally rich system that delivers the original vision for the hospital against the risk of introducing a change that has not been fully tested and stabilized, and may indeed not be implementable (see Appendix 3: HIN Project Delivery Review Report for Fiona Stanley Hospital).
 - It is clearly evident that there is a significant gap between what has been previously published in terms of the vision of the fully digital hospital and what can realistically be achieved in time for the April 2014 opening of FSH technically, financially and operationally. There is little time left to consider additional application functionality and expectations will need to be managed to ensure that clinicians understand what will be delivered day one and that they are engaged in the development of the roadmap to achieve the vision over time. In the work completed to date, there has been a failure to recognize the detail and sustained effort required to bring about small changes in workflow.
 - The FSH ICT CCG has reviewed the base position for FSH and has reached a position as to what can be delivered to safely open FSH. This includes the delivery of a foundational (but not fully fledged) electronic medical record, but does not include enterprise wide scheduling which will have a significant integration load between WA Health's and the FM's systems.
 - To deliver the proposed package of work would put HIN in a deficit position even after the 2012/13 and 2013/14 Capital Works allocation from DoT is taken into account. HIN budget for financial years 2012-13 is \$79.7M and estimated at \$79.8M for 2013/14.
Current estimates to deliver Albany Health Campus, State-wide WeBPAS, FSH and to commence planning for New Children's Hospital (NCH) for 2012/13 is \$100.8M. Post redirection of allocated resources and changes in project scope this leaves a deficit position of \$15.7M for 2012/13.
 - Estimates for 2013/14 financial year indicate a projected budget shortfall of \$14.4M. Table 1 provides an overview of HIN budget for 2012/13 and 2013/14 versus costs

for FSH and other ICT projects. Full budget is provided in Appendix 5. Whilst this is a two year problem, it is likely with payment cycles and potential delays, this would be cash flowed over three financial years.

- It is important to note that costs associated with alternative options have yet to be estimated at this point in time.

Table 1: HIN Budget Overview 2012/13-2013/14

Summary	FY 12/13		FY 13/14			
HIN Budget	79,680,653		79,800,000			
less: FSH costs	81,836,756		78,855,672			
less: Other Projects	18,927,110		15,380,250			
Shortfall	-21,083,213		-14,435,922			
Clinical Workbench	2,250,000	(De-scoped)				
Order Entry	250,000	(De-scoped)				
Patient Billing	2,664,770	(Cost included in PAS scope)				
WA Health Service Resources	250,000	(Estimated cost of WA Health resources if borne by SMHS)				
Additional funds redirected	5,414,770					
Shortfall less adjustments	-15,668,443		-14,435,922			

5 Issues and Risks

Whilst an effort has been made to lock down the ICT solution for FSH there are still some critical issues that require some resolution.

- **Electronic Medical Record (EMR)** – an EMR needs to be available at the point of care regardless of where the record was generated. The current FSH solution cannot be reused across other sites and therefore will create a significant amount of rework for both WA Health staff and the FM. A more efficient design solution for EMR that makes records available across sites, but makes best use of our current systems is being developed. The estimate in the budget (in previous section) is provisional but includes a statewide procurement for document scanning and eForms that will prioritize scanning and eForms at Albany and the viewing of electronic records at other sites initially. As the FM will address the scanning and eForms requirements for FSH, this will be taken into consideration during the alternative technical options analysis.
- **PACS/RIS** - The current PACS-RIS environment is subject to performance and stability issues that are necessitating 'Code Yellow' alerts to be in place for up to 36 hours, at a rate of about 1 per month. This is compromising patient safety and is unacceptable. There is currently no project underway to deliver a PACS-RIS solution for FSH, nor to stabilize the current system for the rest of WA Health. It will not be possible to complete the commissioning of FSH without a viable PACS-RIS solution being in-place. Work must be commenced immediately on stabilizing the current platform and designing the PACS-RIS solution for FSH. This is estimated at \$2.5M for 2012-23 and an additional \$3.5M in 2013-14.
- **Emergency Department Information System (EDIS)** - an assumption was made that EDIS would be replaced over time by WebPAS ED module however it is unlikely that webPAS ED module will replace full functionality of EDIS in the timeframe for FSH. As such, the WA Health existing EDIS application needs to be upgraded as per current support agreements with the vendor. This upgrade is expected to cost \$900,000 and will need to commence quickly in order to be

complete for the FSH integration and testing phases. This upgrade is vendor dependent and thus places the timeline for testing at significant risk. If the hospital is to commence ED services in April 2014, it is possible that the current version of EDIS could be stood up in a Citrix environment that would allow for initial testing and workflow management (this is currently being assessed). This would result in an unsupported product supporting WA Health's largest ED, a situation that could not be sustained for more than 6 months as the projected number of presentations at FSH ED increases, thus remediation as outlined above is considered essential.

- **Laboratory Information System (LIS)** - Whilst some funds have been identified to address urgent remediation work required on the current LIS, a decision is yet to be reached on either full renovation of GE Ultra (which will need a minimum of \$3.5M over both 12/13 and 13/14) and other related Pathology Information Systems, or the full replacement of the all LIS applications (estimated at approximately \$20M). This is currently being considered through the mid-year review budget process and will materially impact on the solution design for FSH.
- **Subspecialty and local applications:** It is unachievable to remediate and integrate all subspecialty and locally supported applications for both Windows 7 compliance and for use with the enterprise services bus (ESB). Full integration is estimated at over \$16M. An options analysis is currently underway to identify alternative ways of delivering these applications. This includes virtualization and standalone departmental desktops. Virtualization through VMware and Citrix is estimated at \$1.5M. Alternative options and associated cost will also be explored during the technical options analysis.
- **Training:** - the over-arching assumption is that HIN will organise ICT related training within the FSH training framework. The timing and methodology for delivery of training and initial planning is now occurring with FSH. It is estimated at \$1.2M.
- **Testing and integration activities** for existing applications are unfunded and currently undocumented. The effort and resources required to ensure all applications are fully tested within the FSH environment and with the FM solutions are currently not detailed. Discussions have commenced with the FM to better understand their proposed approach so that detailed timelines and resources can be estimated and costed. However, given the current budget position in HIN, there is no contingency to deal with this aspect of service. Depending on the FM requirements, testing and integration activities could amount to as much as \$2-3M. It is important to note that even if the FM was to provide their interface requirements soon, it is likely to take up to 6 to 9 months of development and testing prior to implementation as some of the applications proposed for FSH are external software vendor owned and delivery will be dependent on the vendor's development pipeline. The approach and costs associated with interfacing and testing will be presented with each alternate technical options analysis.

5.1 Impact on Facilities Manager (FM)

The revised scope of ICT for FSH will impact on the FM. It was assumed that most of WA Health's applications would be integrated via the Enterprise Service Bus (ESB), making it possible to integrate a significant number of workflows across both the FM and WA Health's systems. How this would be achieved and the effort required to make this possible was not fully analyzed, detailed or costed. The most obvious impacts are detailed below; however it is possible that this list will continue to grow as more is known about the integrated workflows.

- **Integration and Testing Schedule** – In order to configure the ICT applications systems prior to releasing them to the FM, the relevant administrative and clinical business rules, processes and operational workflows need to be fully developed and documented. For WebPAS alone this will require 5 to 6 months work. This configuration work is dependent on very granular clinical services specifications which are yet to be completed by FSH/SMHS. Any slippage in the timelines for service specifications will create a flow on effect for the delivery of core clinical and administrative applications. Given the FM's testing regime, there is little contingency in the timeline. HIN also requires the FM to define its information and interface requirements in order to make changes to its ICT applications, to enable a seamless flow of information between HIN's and the FM's systems. To date HIN is yet to receive the FM requirements due to delays in the FM's ICT program. The approach and costs associated with interfacing and testing will be presented with each technical options analysis.
- **Enterprise Scheduling (ES)** - ES when fully deployed will require significant interfaces between FM and WA Health ICT systems. This integration effort has not been estimated and is unlikely to be achieved for Day 1. Booking can still happen across the hospital through the use of existing systems including Outlook (for spaces), webPAS (clinics and beds) and TMS (Theatres). This would allow time for greater workflow redesign, and solve the technical difficulties with integrating more of WA Health core clinical applications with the ESB. It is clear that the ES solution for FSH will not be as envisioned on day one. It will and should be developed over time as it is key to delivering many of the expected benefits of using a FM. Failure to deliver this day one may entitle the FM to seek some relief from its key performance indicators if it is driven by the State's inability to deliver the interfaces and business rules required to enable full enterprise wide scheduling.
- **Health Records Management** consists of a number of components including clinical coding and:
 - Electronic Records Management- this includes all records across the hospital and is proposed to be provided by a third party provider (Recall) who would use a document scanning and eForms solution called Onbase. This requires the State to be able to pass documents to the FM to ensure an entire record is held for each episode of patient care.
 - Electronic Medical Record (HIN) - in order for the FM to collate a complete record of care, WA Health will require a document scanning solution, an eForms solution and an electronic document storage and viewing capacity. As with ES, it was assumed that WA Health would be able to reuse the Onbase solution across the state. As this is not the case, FSH electronic medical records will have no mobility and thus no visibility in any facility other than FSH. A statewide procurement is needed to ensure that an enterprise wide platform is adopted across the state over time. This is achievable within the timeframe and is estimated at \$1.4M. This deployment will target Albany and viewing capacity at other facilities. As the FM will address the scanning and eForms requirements for FSH, this will be taken into consideration during the technical options analysis.
- **FM required application changes-** as HIN has not received a complete list of FM requirements, the extent of the required modifications or changes to WA Health systems is currently unknown (this could be due to technical or workflow reasons). As such this has not been estimated and is a significant risk due to no allocation of contingency. If full ES is included this could be in the order of more than \$10M. Minor changes could take weeks to months to resolve. Some vendor owned/supported applications require the national/international user groups to agree to the changes which could take years to resolve. A contingency of \$5M per annum for the next 2

years has been included in the revised budget but does not include changes required for ES. The approach and costs associated with interfacing and testing will be presented with each technical options analysis.

Confidential Draft Not for Circulation

6 Revised Implementation Approach

The re-base lined ICT implementation approach for FSH has been underway over the last 2 months and some significant progress made. However, the massive scope of the task ahead cannot be underestimated.

This section describes the governance to support and oversee this re-base lined programme, progress to date, key risk and mitigations and resource requirements. The application suite presented is reflective of a new approach to delivery of ICT to FSH. It recognises the fundamental shift in workflows that are required to realise a digital hospital and balances this with pragmatism and affordability. The new approach includes:

- Prioritising core systems that are required to safely operate a hospital on a day to day basis;
- Providing some key changes to functionality that will improve the performance of our current systems and provide a platform for change in the future;
- Deploying the many singular clinical applications in the most cost effective and efficient way possible (for some applications, this may mean deployment on a lap top or provision of a web based service);
- Ensuring that the functionality that is required for core Serco functions is provided;
- Limiting the amount of technical interfaces between HIN and Serco systems in order to reduce technical complexity, cost and time; and
- Providing virtual and local environments for applications that cannot be remediated renovated or retired.

Governance Changes

Going forward it is important that WA Health and the Taskforce have confidence in the delivery of the ICT plan and the clinical support and engagement. To enable this, the program is now directed by an FSH ICT CCG reporting to the FSH Steering Committee. Assurance that the program is delivering is provided by the HIN PMO, as well as a newly dedicated FSH PMO. However it should be noted that ICT delivery for FSH is primarily a HIN deliverable since HIN does not come under the jurisdiction of FSH and did not previously come under the jurisdiction of SMHS.

A formal program management approach is now in place, utilising the FSH ICT CCG to oversee the ICT program. With a program of this scale and complexity it is anticipated that the programme plan will need to be reviewed and adapted to respond to changing needs and priorities particularly as it impacts on commercial aspects of arrangements with the FM. The FSH Taskforce will control the plan with a clear responsibility to remain focused on the achievement of a functional hospital day one.

The delivery of the Program and the related projects is supported by a professional project management team embedded within HIN. This is being led by Jon Harrison (FSH HIN ICT Lead) and supported by Dr Andrew Robertson as the newly appointed A/CIO.

In order to bring about better business engagement and ensure solutions are fit for purpose, each element of the program will have a project control group which will be led by a Senior Responsible Officer (SRO) in line with best practice. The SROs will be senior clinicians wherever possible and will be responsible for driving the projects with a focus on the realisation of the benefits. Professor Peter Sprivulis has recently been appointed as the Senior Clinical Advisor for HIN FSH ICT and will be supported by clinical leads representing specific clinical roles including junior medical staff, nursing and allied health.

7 Core Applications to be delivered

The key requirements of the revised ICT Plan are to deliver a safe and functional hospital for patients with a view to minimising the State's commercial exposure with the FM. Building on the current systems base deployed across WA Health, existing systems are being reviewed to ensure that they meet current needs and can be safely deployed within the new FSH operating environment.

The following principles have been applied to ensure appropriate focus and effort is given to specific activities. They include:

1. **Is it a core application?** Core applications are those that underpin everyday operations within a hospital. Failure to deliver these applications with the required functionality will result in a delay in the commencement of all clinical services.
2. **Is it one of the required local clinical applications?** These applications are those that are currently used by clinicians and administrators to conduct their daily work but are not necessarily required by all areas across the hospital. Failure to deliver these applications will delay the commencement of some clinical services and may have some impact on the FM.
3. **Is the application required to integrate or interact with the FM solution?** This gives an indication of the level of complexity as well as the time in which the application needs to be made available to the FM. If integration is required, the application is required to be placed within a non-production ICT environment, tested to ensure it can operate in a virtual network and in concert with the rest of WA Health systems and then be made available to the FM by an agreed date. Whilst the FM is yet to formally notify WA Health of the date, early indications are it will be sometime between (and no later than) March and April 2013. HIN had previously been working on a number of iterative releases starting in March and concluding in November 2013 and it is unlikely with the work to be done, that these dates can be moved forward.
4. **Is the delivery of the application dependent on a vendor?** Most Health departments across Australia are currently investing in ICT placing significant pressure on large vendors to deliver products and required changes to individual jurisdictions. If a project required for FSH has not been initiated and is vendor dependent, it is unlikely to meet a March 2013 FM delivery date.
5. **Will the non-delivery of the application have a significant operational impact?** These include applications that are required by clinicians to safely deliver care and those that will have significant workflow issues if not available. Failure to deliver these applications will require consideration of delayed clinical commissioning.
6. **Can they be safely delivered into the Non Production Environment (NPE) in adequate time for testing?** If an application cannot be remediated and configured in time for testing, alternative treatments should be found such as virtualisation and thick client solutions. As this will require additional effort, these applications need to be identified early. If the application requires integration, failure to deliver into the NPE in time for integration and full regression testing with the FM will be unrecoverable within the timeframe for the original April 2014 opening.

Each of the core applications has been assessed using the above principles and assigned a score of between 1 and 5, with score of 4 and above presenting a real and imminent risk of time, quality and/or cost slippage. The current position is highlighted below.

7.1 Core Clinical Systems

Project/Program Name	Project Name	Project Description	Rating	Is FM Integration required?	Vendor /3rd Party Dependent?	Core Application	Required Local app	Significant operational impact	Not fully configured March 13?	Comments
WebPAS	WebPAS	Patient Administration System FSH only	5	✓	✓	✓	✗	✓	✓	6-8 months to technical "go-live" of a state footprint WebPAS & ED (Est. delivery date Oct 2013). Project resources will need to stay in place until Jun 2014 to support project. Ultragenda decision will impact project scope and enhancement requirements - which will impact funding. FSH planning slated for Feb 2013, including resource allocation requirements.
Diet Management			5	✓	✓	✓	✗	✓	✓	
Notifications and Clinical Summaries (NaCS)	NaCS		4	✓	✗	✓	✗	✓	✓	- NaCS will meet FSH June 13 timeline , not April - RPH version will be applicable for FSH. - Configuration requirements was noted as minimal - SoW not finalised - NaCS is assumed to be dependent on AMT codes in iPharmacy application, which can only be delivered in Jun 13.
	Allergies		4	✓	✗	✓	✗	✓	✓	Manual workaround will offer significant clinical risk
Enterprise bed Management	Enterprise Bed Management (Patient Flow)	Bed management and integration with PAS.	4	✓	✗	✓	✗	✓	✓	Budget does not include any scope for FSH roll-out as it was not planned as one of the hospitals to receive EBM.
CIS R3A Internal Referrals	eReferrals	Roll out of eReferrals to FSH using current eReferrals footprint	4	✓	✗	✓	✗	✓	✓	No additional costs if FSH adopts current statewide build. If FSH identify enhancements to eReferrals to support new models of care this will impact ability to meet time line.
CIS R3D Cardiology (incl. Cardibase)	Cardibase		4	✗	✓	✓	✗	✓	✓	Major datamigration issues. Cardiology service depends on system
iCM	Version Upgrade	Version Upgrade from 1.4- 1.6	5	✓	✓	✓	✗	✓	✓	Upgrade on track to complete by Jan 13 to support AHC and FSH remediation requirements
	Progress Notes	iCM based progress notes	2	✓	✓	✗	✗	✗	✗	Can stay with paper and on discharge scanning
GE Ultra (LIS Remediation)	LIS Remediation	Hardware refresh and FSH LIS configuration.	5	✓	✓	✓	✗	✓	✓	Additional 1.273m for (approved but not yet received)
CIS R3F CPOE Pathology Rollout	FSH Configuration	Configure for operating environment, wards and clinics	3	✓	✗	✓	✗	✗	✓	Current iCM configuration including CPOE for Pathology is achievable within time frame however project needs to be planned and scoped.
	CPOE Pathology	Continued roll out of CPOE Pathology	3	✓	✗	✓	✗	✗	✓	
Agfa PACS/RIS	FSH RIS / PACS	Implementation or extension of Radiology information system to FSH	5	✓	✓	✓	✗	✓	✓	Cannot open clinicalservice without PACS/RIS
iPharmacy	FSH Pharmacy Management System	Extension of Pharmacy information system to FSH including upgrade from 5.6 -5.6	4	✗	✓	✓	✗	✓	✓	Automated Medication Units (AMU) were assumed to be in scope for FSH, however v5.7 will only support 1x AMU per database. - The ability to support >1 AMU per database is only available in v8.0, slated for earliest Q4 13 release and would be a major upgrade from the current version (est. 8 mth)
EDIS	FSH EDIS	Upgrade of EDIS (state wide) including FSH implementation	5	✓	✓	✓	✗	✓	✓	Assumed v946 is upgraded to APAC 11. v946 is unsupported currently.
Theatre Management System	Theatre Management System	Renovate and Remediate TMS for FSH	4	✓	✗	✓	✗	✓	✓	A significant specification and scoping effort is required to detail the cost and extent of the renovation project. Decision on Enterprise Scheduling will significantly impact software development costs with a flow on effect to a multi instance state system.
WAND	WA Nephrology Database	Renovate and remedite for FSH	3	✗	✗	✓	✗	✓	✓	Currently unstable- needs significant renovation. Nocurrent project

5- HIGH PRIORITY- high level of integration and dependency for both Health and FM. Reliant on

4- 2nd Priority- Health or FM dependencies to operate hospital safely

3- 3rd Priority- some clinical services unable to operate without the system

2- Workflow or functional priority but manual work around

7.2 Core Administrative Systems

Project/Program Name	Project Name	Project Description	Rating	Is FM Integration required?	Vendor /3rd Party Dependence	Core Application	Required Local app	Significant operational impact	Not fully configured March 13?	Comments
Core Corporate										
Billing (PBRC)	Patient Billing FSH	Patient Billing	5	✓	✓	✓	✗	✓	✓	FSH is not in scope for the FY13 Budget and due to other sites ahead not achievable within current timeframe and schedule. Implementation for FSH is only due to commence in Aug 2013
EMR (Scanning & eForms)	EMR	Scanned medical records & eForms	3	✓	✓	✗	✗	✗	✓	Solution not purchased (Procurement time lines will impact ability to implement). Requires definition of workflows
WA Health Online Portal	WA Health Online Portal	Corporate and consumer websites	3	✓	✓	✗	✗	✗	✓	Required for all FSH public information
Lattice	HR Implementation	Configuration of HR systems for FSH	5	✓	✓	✓	✗	✓	✓	Requires project scoping however is safer from an IT perspective and is a known product across WA Health.
ABM	Activity Based managemet	Development and deployment of ABM DSS to	2	✗	✗	✗	✗	✓	✓	Will impact on funding
AIMS (CIMS)	Clinical Incident Management System	CIMS - Single state wide system with demographic interface only from PAS	4	✓	✓	✓	✗	✗	✓	The project timeline does not align with the FSH timeline of Jun 13. Licencing costs of \$70k for AIMS. CIMS licencing cost unknown at this stage.
Credentialing	Credentialing FSH	Implementation of software to manage clinical credentialing information	3	✓	✓	✗	✗	✗	✓	SMHS project- if not implemented, can be managed manually

7.3 Enabling Technologies

Project/Program Name	Project Name	Project Description	Rating	Is FM Integration required?	Vendor /3rd Party Dependence	Core Application	Required Local app	Significant operational impact	Not fully configured March 13?	Comments
Enabling Technologies										
Context Sharing	Enabling context sharing	Applications to support information sharing with 3rd parties	3	✓	✓	✗	✗	✗	✓	Can manage with manual processes but will impact on continuity of care
Health Identifiers	Health Identifiers	Patient and provider identification	4	✓	✓	✓	✗	✓	✗	Has no FSH specific costs. "Patients" to be rolled out in Jan 13, "Providers" to be rolled out by 31 March 13.
Health Integration Hub (ESB) (Ensemble & Cloverleaf)	ESB	Integration hub between HIN & HIN systems and FM & HIN / HCN systems	4	✓	✓	✓	✗	✓	✗	Finalisation of scope is only possible after Serco documentation received in late Nov 29th though some scope of services are currently understood
Applications Remediation	Existing Systems Remediation	Remediation of legacy systems.	4	✗	✓	✓	✗	✓	✓	SoW not finalised Hardware requirements not identified Project team feel remediation is achievable however until all SoW completed and signed off full scope and timelines not defined.
	Virtualisation	Virtualisation of local apps	4	✗	✓	✓	✓	✓	✗	
Release Management Office (NPE)	Release management	Management of applications for testing and inetgration in the non production environment	4	✓	✓	✓	✗	✓	✗	Detailed resource estimates have been modelled however the project is not initiated and resourced presently other than the PM.
Training		Development and implementation of scenario based training methods	5	✓	✓	✓	✗	✓	✓	Currently scoping training approach for FSH at a facility level rather than project level. Detailed costing is not currently available.

7.4 Infrastructure

Project/Program Name	Project Name	Project Description	Rating	Is FM Integration required?	Vendor /3rd Party Dependent	Core Application	Required Local app	Significant operational impact	Not fully configured March 13?	Comments
Infrastructure										
FSH - Infrastructure			3	✓	✗	✓	✗	✓	✗	
Data Centre			3	✗	✓	✓	✗	✓	✗	
End User Computer			4	✓	✓	✓	✗	✓	✗	
Virtualisation			3	✗	✓	✓	✗	✓	✗	
Identity and Access Management	Active Directory		3	✓	✓	✓	✗	✗	✗	Not ideal but can be managed manually
	Site Minder		3	✓	✓	✓	✗	✗	✗	

7.5 Critical Timelines and Dependencies

As stated above, the FM requirements for testing and integration have not been fully documented or analysed. However, as the analysis of existing WA Health applications has progressed it has become apparent that the effort required to meet a March 2013 timeframe (in order to meet the original April 2014 opening timeframe) is far in excess of what was estimated. Several core applications will require version upgrades to either ensure that they can operate in the Windows 7 environment or to enable key FSH functionality. This is placing significant pressure on the timelines and will result in several core applications (see Table 1) not being available for testing in time to ensure an April 1 2014 opening. All applications listed above that scored 4 and above are not optional. If the timeline or the quality slips, further delays would occur. In the current environment and being realistic, clinical service commencement will have to be delayed. The delay is currently estimated at 9-12 months. This does not include any integration or change effort by the FM to deploy the application to the end user or integrate with the ES.

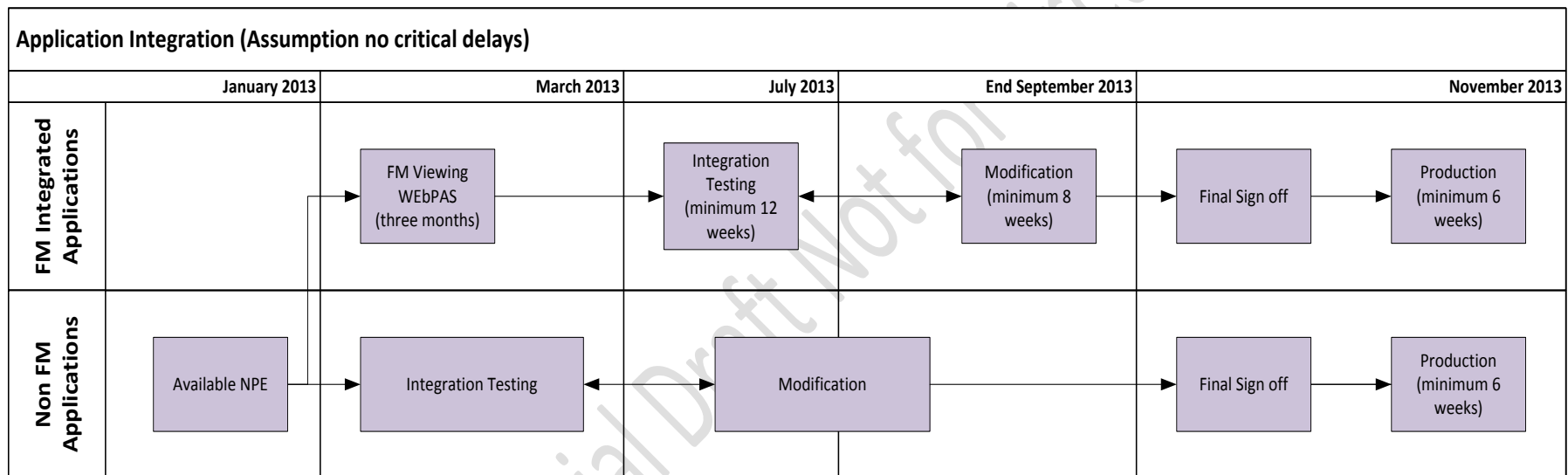


Table 2: FSH Applications of High likelihood of time delay.

Application/Area	Risk	Implication	Potential Time Delay	Revised "Go Live" Date	Revised Day 1 operations
*Web PAS functionality	Increased SMHS functionality requirements	Increased development time, failure to meet FM delivery requirement	2-3 months	April 2014	August 2014
	FM Requested changes	Will increase development time	2-9 months depending on change requested	August 2014	December 2014
	Delay in detailed clinical service specifications and clinical appointments	Will be unable to configure wards and outpatients clinics without details of clinics and doctors names	4-6 months	March 2014	July 2014
iCM	Dependencies on other applications	Delayed configuration	2-3 months	April 2014	April 2014
*FM interface requirements	Additional Integration testing required	Increased development time	2 -6 months	October 2014	February 2015
PACs	Current environment subject to performance issues	No solution currently identified, No project to stabilise current system	6-9 months	August 2014	August 2014
LIS	Issues Assessment being completed. Will not be available for NPE till August 2013.	Requires application and platform changes Solution design	8 months	July 2014	July 2014
*EBM	Requires significant functional upgrade	Increased development time. Delays for functional implementation. Delays due to FMN testing	6-7 months	June 2014	October 2014
iPharmacy	Vendor managed upgrade commencing in January	Delays to completion of version upgrade. Failure to strike project in January 2013	3 – 6 months	July 2014	July 2014

*These systems are required up to 6 months prior to hospital opening due to the high level of integration and dependencies with FM technology and workflows

All core WA Health systems rely on data from WeBPAS.

If there are any delays or major changes required to WeBPAS it will impact on the availability of the above “downstream” applications, delaying the opening of the hospital by a further 6 months beyond the forecasted “Go Live” dates.

WeBPAS as such sets the critical path for all applications.

8 Key Achievements to Date

8.1 Patient Administration Program

- WeBPAS has been successfully implemented at Albany Regional Hospital and all of the associated Great Southern sites, on schedule. This implementation included the first implementation of the WeBPAS Emergency Department module. The Project Team is on schedule to complete the Royal Perth Group’s WeBPAS configuration before the Christmas break, which will facilitate data migration testing in the New Year. Detailed activities are now underway and on schedule to implement WeBPAS at Bunbury Regional Hospital and Southwest Regional sites commencing late February 2013, and completing the remainder of the Region before the Easter break. Training for the Southwest Region will commence in late January 2013. WeBPAS continues to be stable with two system outages occurring post go live. One outage of seven minutes and the second for sixteen minutes. Support calls are still averaging 1 – 2 per day.
- The Go Live for Patient Billing at Fremantle commenced on the 29th October 2012 as per schedule. A daily report on the progress of Patient Billing is issued to key stakeholders. The initial ‘run’ of Billing was successful and the Patient Billing Project Control Group has authorized the Billing Team to proceed with processing the Fremantle activity backlog. This is planned to be completed by mid-February 2013. Investigations are underway to determine if Fremantle can process current activity concurrently with HCN and the Billing Team processing the backlog.

8.2 Corporate Program

- Activity Based Management Decision Support System project has continued to progress well, work on the training materials and business process guides is nearing completion. The system is now in User Acceptance Testing (UAT) and the initial pass completed successfully.

8.3 EMR Program

- Health Identifiers –Health Identifiers production hardware has now been delivered by the supplier and is in the process of being installed at both DC1 and DCM. The production environments have been set up as virtual machines on temporary hardware and the product is being installed by the vendor. UAT and performance / load testing is under way.
- Notifications and Clinical Summaries (NaCS) – Confirmation received from NeHTA that they will fund the implementation of NaCS at Royal Perth Hospital prior to the end of this financial year. Early discussions have been held with the Royal Perth Hospital executive, along with the GP liaison. NaCS application itself has reached the code freeze stage and is undergoing final remediation prior to formal commencement of UAT.

- EMR, eForms and Scanning - Work continuing on the approach for electronic order of filing. An ICT procurement form has been completed for a State-wide Scanning and eForms solution.

8.4 Portal & Interoperability Programs

- Identity and Access management (IAM): The IAM Team have engaged with key integration partners (Serco, HCN, Apps Remediation) and are clearing up and documenting the requirements to hit the key delivery schedules of HIN. (Albany, FSH, etc).
- HealthPoint has been implemented across all WA Health sites except Dental, DAO and HaDSCO. Internet Explorer 8 Browser Rollout completed for all sites.
- Enterprise Services Bus (ESB): HI (Health Identifiers) Release which included the Health Integration Hub infrastructure and Enterprise Master Patient Index (EMPI) Service will go live on 11 December 2012. Release 1 (NaCS) is in testing with transition into UAT by the end of December 2012.

9 Conclusions

As a result of failing to understand the complexity of the FSH Digital Hospital, an underestimation of the technical effort required to bring about the level of ICT integration between two parties (HIN and the FM), the commercial implications and significant delays in engaging the business in the design of workflows and systems, the opening of FSH will need to be delayed in order to have all core systems functioning (completed development, testing and implementation) and to reduce risk to patients.

WA Health has responded to this by putting in place a new leadership and governance structure as well as significantly changing the HIN ICT program in order to guarantee a safe and functional hospital.

Critical system risks including the delivery of safe and stable PACS/RIS, HRIS, and LIS are not achievable within the current funding envelope and will mean that clinical services cannot open as envisaged in April 2014.

The projected funding deficit for the ICT program budget of \$30.1M over 3 financial years commencing 2012-13 will need to be reallocated within Health or urgently sought from Government.

The political and contractual ramifications from a delayed opening date will need to be managed carefully. Communication and expectations (including clinical) will need to be closely managed to ensure that the focus remains on the efficient delivery of safe and affordable hospital care at FSH.

10 Key Recommendations

It is the opinion of the FSH ICT Commissioning Control Group, endorsed by the new FSH Executive and Chief Executive FSH Commissioning (having spent the majority of their focus over the last 4 weeks analysing the ICT readiness for FSH) that the risk of slippage is inevitable, the progress to date not nearly advanced enough (from a program baseline that is already well behind timelines), with little contingency in time or resources available to make this up.

It is recommended that the Taskforce:

- Note the significant changes to the ICT program governance and management.
- Note that, even with a more pragmatic approach, it will not be possible to safely commission FSH by the planned date in April 2014, because key ICT applications will not have completed development, testing and implementation – and that a subsequent delay of 9 to 12 months is expected.
- Note that alternative technical options in relation to delivering a more basic ICT solution by April 2014 – including replicating the same technical setup as for example in Royal Perth Hospital - are currently being reviewed by HIN however it is important to note that once each option is defined it will require a subsequent detailed impact assessment on the envisaged hospital operations/workflows, physical facility design (workstation, storage requirements, etc.), FM contract and workforce attraction. Because of these flow on effects it may be that the delay is the same or longer and the ICT solution inferior. Furthermore time constraints mean that this analysis cannot be protracted since this cannot push out the already envisaged delay to opening.
- Endorse a changed overall strategy to achieve this revised timetable, based on:
 - Prioritisation of effort towards core critical systems;
 - Minimising the impact on the FM contract, and working closely with the FM to optimise what integration can be delivered on opening of FSH;
 - Completing the development and implementation of those required applications that can realistically be achieved within the revised time frame;
 - Virtualisation of other critical applications that cannot stand alone on local equipment and cannot be replaced/developed within a reasonable timeframe;
 - Essential upgrade of existing applications to ensure integration and stability;
 - Transfer essential but less critical applications (in their existing form) that can run on local equipment; and
 - Ensuring an ICT platform that can be built on towards the original planned vision.
- Note that, to achieve this revised scope and timetable an additional \$30.1M of funding will be required; cash flowed over the next 3 financial years.
- Endorse the commencement of commercial discussions with the FM in order to recognise that both parties (the State and the FM) are behind schedule and seek to minimise the State's exposure to penalty under the contract.

Appendix 1: Solomon Review

Confidential Draft Not for Circulation

Appendix 2: PWC Report Executive Summary

Confidential Draft Not for Circulation

Appendix 3: HIN Project Delivery Review Report for Fiona Stanley Hospital

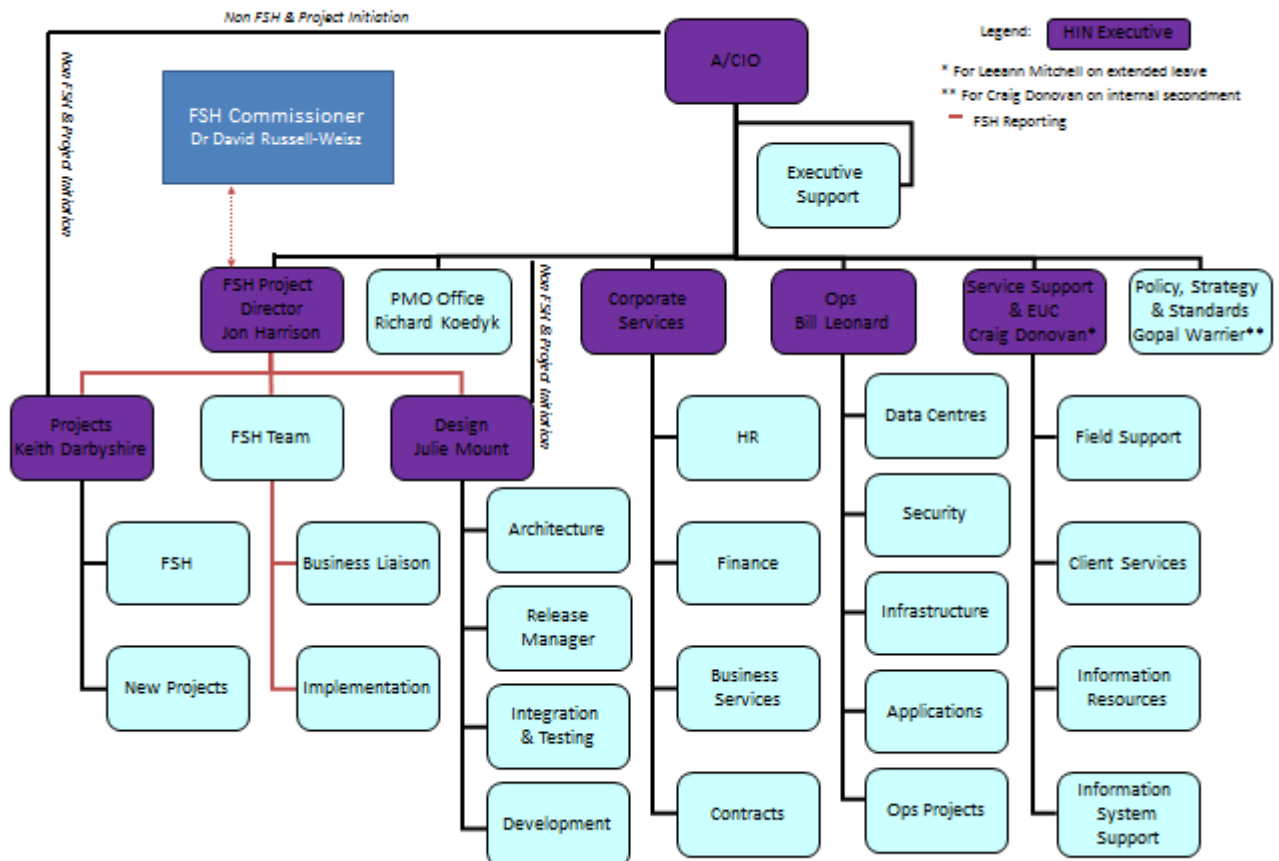
Confidential Draft Not for Circulation

Appendix 4: HIN Organisational and FSH team structure

To reflect a new focus and demonstrate a commitment to delivering the required outcomes from an ICT perspective to FSH, it is necessary to realign the HIN organisational structure, and to acknowledge some key positions and reporting relationships that reflect the new focus. A revised structure is below.

Jon Harrison’s role as the key FSH ICT Project Director has been given greater recognition and prominence as the lead position within HIN for the delivery of the ICT capabilities for FSH. The teams in Projects and Design play a significant role in relation to the delivery of the overall FSH outcomes. The realignment recognises this and gives Keith Darbyshire (Projects) and Julie Mount (Design) a direct working relationship with the FSH Project Director, while they continue their senior management roles on HIN executive and maintain direct reporting to the Acting Chief Information Officer on non FSH and new project initiatives.

Health Information Network –Realignment



Appendix 5: Financial Position

HIN Budget	FY 12/13	FY 13/14
CAPEX		
Patient Administration (webPAS and Billing)	23,000,000	23,000,000
Clinical Workbench (including EMR)	6,400,000	4,500,000
Portal and Interoperability (PI)	6,600,000	6,000,000
Health Identifiers (HI)	3,500,000	0
Facilities	15,000,000	20,200,000
PMO	5,500,000	6,300,000
	<u>60,000,000</u>	<u>60,000,000</u>
OPEX		
Refresh	3,000,000	3,000,000
End User Computing	4,000,000	4,000,000
Data Centres	4,800,000	4,800,000
Remediation	4,500,000	4,500,000
	<u>16,300,000</u>	<u>16,300,000</u>
Own Source Funds		
External Projects*	2,980,653	
LIS (PathWest)	400,000	
	<u>3,380,653</u>	<u>3,500,000</u>
Total HIN Budget	<u><u>79,680,653</u></u>	<u><u>79,800,000</u></u>

FSH Costs		FY 12/13	FY 13/14
Core Clinical			
	Patient Administration System	19,000,000	23,500,000
	Notifications and Clinical Summaries (NaCS)	1,300,000	250,000
	Clinical Workbench	3,100,000	-
	Order Entry	500,000	250,000
	EBM (Patient Flow)	433,500	165,000
	CIS R3A Internal Referrals	988,820	500,000
	CIS R3D Cardiology (incl. Cardiobase)	585,500	132,000
	iCM Upgrade (v1.6)	594,300	0
	LIS Remediation	1,423,000	2,077,000
	CIS R3F CPOE Pathology Rollout	686,000	0
	Diet Management	45,000	0
	Agfa PACS/RIS	2,493,102	3,475,000
	iPharmacy	741,472	741,472
	EDIS	450,000	450,000
	TMS	661,000	300,000
	*SARC migration to PSOLIS	69,450	
	WAND	250,000	500,000
		33,321,144	32,340,472
Core Corporate			
	Patient Billing System	4,000,000	3,600,000
	Scanning and eForms	1,631,225	1,600,000
	WA Health Online	3,258,402	8,300,000
	HR Info System & Payroll (Alesco/Lattice)	1,825,826	0
	OSH	-	0
	*ABM	1,667,000	
	*AIMS (CIMS)	477,588	0
	*Credentialing	-	
		12,860,041	13,500,000
Enabling Technologies			
	Patient Context Sharing Platform (PCSP)	500,000	1,500,000
	*MMex Transition Project	556,250	0
	Health Identifiers (Patient/Providers)	3,500,000	1,100,000
	Enterprise Service Bus (BUS) Enhancement	3,300,000	3,000,000
	Existing Systems Remediation	2,643,321	1,300,000
	Release Management Office	7,140,000	8,455,200
	Training	900,000	1,500,000
	Vendor Requested Changes (Contingency)	5,000,000	5,000,000
		23,539,571	21,855,200
Infrastructure			
	FSH - Infrastructure	1,256,000	0
	Data Centre	4,800,000	4,800,000
	End User Computing(MOE/SOE)	3,960,000	3,960,000
	Identity and Access Management (AD & SM)	2,100,000	2,400,000
		12,116,000	11,160,000
	FSH Total	81,836,756	78,855,672

Other Projects	FY 12/13	FY 13/14
Program Management		
PMO & Scheduling Services	5,500,000	6,300,000
FSH Program (Prog Mgmt & Biz Engagemt)	3,635,533	-
	9,135,533	6,300,000
Core Systems - Non FSH		
Albany Health Campus	7,800,000	0
Albany Health Campus PES	1,000,000	0
New Children's Hospital	200,000	9,080,250
	9,000,000	9,080,250
Other Projects		
*Enterprise Bed Management	210,365	0
CIS R3B Results Acknowledgement	2,772	0
Quality of Care Registry	6,195	0
Broome Hospital Paediatrics & Mental Health	5,780	0
Laboratory Information System	25,236	0
Active Directory Redesign	27,152	0
SCGH Wireless LAN Implementation	103,672	0
Collaboration Platform	105,031	0
ICT Alliance Contract 'Dakota'	184,038	0
Facilities Development	11,972	0
Desktop Replacement Rollout	22,887	0
Contemporary Work Environment	49,859	0
Infrastructure Planning and Design	18,101	0
SCGH Radiation Oncology Citrix	9,847	0
Oracle eBusiness Suite Upgrade	8,669	0
	791,577	-
Other Projects Total	18,927,110	15,380,250

Summary	FY 12/13	FY 13/14
HIN Budget	79,680,653	79,800,000
less: FSH costs	81,836,756	78,855,672
less: Other Projects	18,927,110	15,380,250
Shortfall	-21,083,213	-14,435,922
Clinical Workbench	2,250,000 (De-scoped)	
Order Entry	250,000 (De-scoped)	
Patient Billing	2,664,770 (Cost included in PAS scope)	
WA Health Service Resources	250,000 (Estimated cost of WA Health resources if borne by SMHS)	
Additional funds redirected	5,414,770	
Shortfall less adjustments	-15,668,443	-14,435,922

Cash Flow View

	A	B	A-B
Project Name	Budget FY12/13	Total Cost FY12/13	Shortfall
Core Clinical			
Patient Administration System	19,000,000	19,000,000	0
Notifications and Clinical Summaries (NaCS)	1,200,000	1,300,000	-100,000
Clinical Workbench	3,100,000	3,100,000	0
Order Entry	500,000	500,000	0
EBM (Patient Flow)	-	433,500	-433,500
CIS R3A Internal Referrals	778,820	988,820	-210,000
CIS R3D Cardiology (incl. Cardiobase)	635,500	585,500	50,000
iCM Upgrade (v1.6)	594,300	594,300	0
LIS Remediation	550,000	1,423,000	-873,000
CIS R3F CPOE Pathology Rollout	25,641	686,000	-660,359
Diet Management	0	45,000	-45,000
Agfa PACS/RIS	0	2,493,102	-2,493,102
iPharmacy	0	741,472	-741,472
EDIS	0	450,000	-450,000
TMS	0	661,000	-661,000
SARC migration to PSOLIS	69,450	69,450	0
WAND	0	250,000	-250,000

	A	B	A-B
Project Name	Budget FY12/13	Total Cost FY12/13	Shortfall
Core Corporate			
Patient Billing System	4,000,000	4,000,000	0
Scanning and eForms	1,600,000	1,631,225	-31,225
WA Health Online	1,500,000	3,258,402	-1,758,402
HR Info System & Payroll (Alesco/Lattice)	1,200,000	1,825,826	-625,826
OSH	0	0	0
*ABM	1,667,000	1,667,000	0
*AIMS (CIMS)	477,588	477,588	0
*Credentialing	0	0	0
Enabling Technologies			
Patient Context Sharing Platform (PCSP)	0	500,000	-500,000
*MMex Transition Project	556,250	556,250	0
Health Identifiers (Patient/Providers)	3,500,000	3,500,000	0
Enterprise Service Bus (BUS) Enhancement	3,000,000	3,300,000	-300,000
Existing Systems Remediation	1,923,321	2,643,321	-720,000
Release Management Office	1,108,467	7,140,000	-6,031,533
Training	0	900,000	-900,000
Vendor Requested Changes (Contingency)	0	5,000,000	-5,000,000
Infrastructure			
FSH - Infrastructure	1,256,000	1,256,000	0
Data Centre	4,800,000	4,800,000	0
End User Computing(MOE/SOE)	3,960,000	3,960,000	0
Identity and Access Management (AD & SM)	2,100,000	2,100,000	0
Subtotal	59,102,337	81,836,756	-\$22,734,419

	A	B	A-B
Project Name	Budget FY12/13	Total Cost FY12/13	Shortfall
Program Management			
PMO & Scheduling Services	5,500,000	5,500,000	0
FSH Program (Prog Mgmt & Biz Engagement)	3,635,533	3,635,533	0
Core Systems - Non FSH			
Albany Health Campus	7,800,000	7,800,000	0
Albany Health Campus PES	1,000,000	1,000,000	0
New Children's Hospital	200,000	200,000	0
Other Projects			
Balance of OPEX budget	2,226,223	-	2,226,223
*Enterprise Bed Management (Tactical)	210,365	210,365	0
CIS R3B Results Acknowledgement	0	2,772	-2,772
Quality of Care Registry	6,195	6,195	0
Broome Hospital Paediatrics & Mental Health	0	5,780	-5,780
Laboratory Information System	0	25,236	-25,236
Active Directory Redesign	0	27,152	-27,152
SCGH Wireless LAN Implementation	0	103,672	-103,672
Collaboration Platform	0	105,031	-105,031
ICT Alliance Contract 'Dakota'	0	184,038	-184,038
Facilities Development	0	11,972	-11,972
Desktop Replacement Rollout	0	22,887	-22,887
Contemporary Work Environment	0	49,859	-49,859
Infrastructure Planning and Design	0	18,101	-18,101
SCGH Radiation Oncology Citrix	0	9,847	-9,847
Oracle eBusiness Suite Upgrade	0	8,669	-8,669
Total	79,680,653	100,763,866	-\$21,083,213

Total HIN Budget	79,680,653	
Total cost	100,763,866	
Shortfall	-21,083,213	
Other considerations		
Clinical Workbench	2,250,000	(De-scoped)
Order Entry	250,000	(De-scoped)
Patient Billing	2,664,770	(Cost included in PAS scope)
WA Health Service Resources	250,000	(Borne by SMHS)
Revised Shortfall	-15,668,443	

Appendix 6: WA Health provided applications and deployment methods for FSH

Fiona Stanley Hospital Application Delivery Method

 Government of Western Australia
Department of Health

Application sources: FSH ICT Plan (v2.0.0) (Word) / Taskforce Inserts (v4) (Excel) / FSH ICT Target Landscape Discussion (PPT)	STATUS: Work in Progress - Draft	CREATED: 4/12/2012 by Popple, Anthony	
Application assessment: EUC Application Register (http://intranet.health.wa.gov.au/in/service/computing_apps_register.cfm)	VERSION:	MODIFIED: 5/12/2012 by Popple, Anthony	

Core Clinical Applications

Agfa IMPAX Enterprise	Cardiobase	Diet Management System	Emergency Department Information System	Enterprise Bed Management	eReferral	iSoft Clinical Manager	iSoft Clinical Manager (Pathology Order Entry)
	iPharmacy	Laboratory Information System	Notifications and Clinical Summaries	Theatre Management System	WA Nephrology Database	WebPAS	

Clinical Support Applications

Allied Health System	Anaesthetic Reporting	Body Works	Burns Information Management System	Cancer Registry	Cancer Registry Information System	Care Awaiting Placement	Care Management Plan
Cataract Tracking Database	Clinical Trials		Community Physiotherapy Service System	Diabetic Clinic System	Ear, Nose and Throat Database	Electronic Medicine Information Management System	Endrep
Finesse Pro	Functional Impairment Measure	Haematology Biostate Register	Haematology Nursing Application Database	Hearm-Clm	Hospital Based Cancer Registry	Hospital In The Home	Initiate
MediPal	MicroTrack	MOBS	NCCH	Neobase	Neonatal Followup System	Neurology Filemaker	Orthopaedic Plaster Database (OPD)
Perinatal Loss	Pharmaceutical Benefits Schedule	Procedure Reports	PROES	Prosofv Cardiovascular	Psychiatric Services Online Information System	Quadrat	Quality of Care
RENINS	Sexual Health Information Program	Socket Listener	Stork		Unstructured Clinical Data Store	VHi PC-Kits	

Hospital Operation Applications

Accident Incident Management System	Credential Management System	Alfresco	CapPlan Enterprise	Clinical Audit System	Clinical Audit Tool	Clinical Costing Interface System	Clinical Emergency Response Team
Clinical Information Coding Unit Database	Codefinder	CPI Downtime	Doctors On-Call Roster	Eicat	Emergency and Bed Management Portal	Ethics Database	ExTrack
FOI Track	Holli - Phone Directory	Hospital Morbidity Data System	Language Services System	Midwives Credentialing	Nurse Practice Standards	Nursing Hours per Patient Day	Outpatient Referral Appointment Letters
Patient Appliance Loans	Patient Billing Revenue Collection	Patient Blood Reporting	Post Code Group Report	Query Builder	Rostar - FSH	Roster Viewer	Script Tracker
SMAHS Library and Web Services	Staff Development	Theatre Doctors List	Transition Care	Trauma Registry	Trendstar	User Activity and Reporting	WebPAS Bed Management

Corporate Applications

Activity Based Funding System		Full Time Equivalents	HealthPoint	Lattice	Oracle eBusiness Suite	OSH at Work Database	TRIM
-------------------------------	--	-----------------------	-------------	---------	------------------------	----------------------	------

ICT Applications

Access Request System	Active Directory	Cloverleaf	Health Provider Web Service	HealthApps	HP OpenView	Identity Manager	InterSystems Ensemble
Lexmark Document Solutions Suite	Microsoft Sharepoint	NAGIOS	Role and Compliance Manager	SiteMinder	SOA Governance Suite	SOA Security Manager	

FM (External) Applications - Integration

Apelon DTS	Delegate	Hyland Onbase	MES Equipment	PTMS	Siemens HiMed Server 33
------------	----------	---------------	---------------	------	-------------------------

KEY:

<div style="border: 1px solid black; border-radius: 10px; background-color: #4a7ebb; color: white; padding: 5px; width: fit-content; margin: 0 auto;">Windows 7 Compatible</div>	Application will be delivered directly to users' desktops.	<div style="border: 1px solid black; border-radius: 10px; background-color: #00b0f0; color: white; padding: 5px; width: fit-content; margin: 0 auto;">Non-Desktop Application</div>	These applications are not delivered to user desktops.
<div style="border: 1px solid black; border-radius: 10px; background-color: #f08080; color: white; padding: 5px; width: fit-content; margin: 0 auto;">Windows XP Virtualised</div>	Most of these applications will be delivered via Citrix. The rest via an XP emulator or possibly installed on a stand alone XP PC.	<div style="border: 1px solid black; border-radius: 10px; background-color: #fff; color: #ccc; padding: 5px; width: fit-content; margin: 0 auto;">Application Not Procured</div>	These are types of applications, not actual products.
		<div style="border: 1px solid black; border-radius: 10px; background-color: #f08080; color: white; padding: 5px; width: fit-content; margin: 0 auto;">To Be Confirmed</div>	

