



**Proposal to
California Department of Mental Health**

For Orion Health Behavioral Health

Electronic Health Record



Prepared by Orion Health Inc.

December 5, 2008

Commercial in Confidence

For more information regarding this proposal, please contact:

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A. Executive Summary

- A. Firstly, Orion Health Inc would like to thank the California Department of Mental Health for inviting us to participate in the RFI and the recognition that the Orion products and services could be applied successfully as part of the many county solutions. Orion's achievements to date with a diverse range of Healthcare providers across four continents are testament to the flexibility of the products and solution deployed. As a consequence Orion believes our products could be a key ingredient in many, if not all of the county deployments across California.
- B. The enclosed response does not try to address all of the aspects of functionality required. Orion believes the technology works very effectively as a component part of a regional solution. This is the model that has been so effectively deployed elsewhere across North America. The Orion Health philosophy has always been based on the belief that no single Vendor has the breadth of understanding or resources to do all aspects of healthcare well enough. Therefore Orion has aimed to bring the best of breed technology components from each area to produce an outstanding solution. Orion Health regularly partners with numerous Vendors and System Integrators depending on the functionality required, the location globally and the preferences of the customer. A review of the references will demonstrate that versatility and ability to partner effectively.
- C. Part of the reason for the success in healthcare is the foundation products on which many solutions are built. The Rhapsody messaging engine, which creates a messaging backbone for numerous regional solutions, and the Concerto Portal, a presentation layer that aggregates data and provides workflow capability, are key components to any regional solution. Combining these products with other industry leading vendors for Database and EMPI provides an extensible and flexible solution architecture from which a great deal of functionality can be deployed. An example of this would be Clinical Documentation and Disease Management - both of which are simply add-on modules to this framework from Orion and both of which will be used for the California Prison Receivership project.
- D. It is believed that Orion Health's successful bid for the California Prison Receivership Project could have considerable synergies with what CADMH want to achieve. The CPR project will impact the way in which many physicians provide care for patients within the California prison population. A considerable proportion of this population contains patients with mental health issues and so the CPR solution is being configured to accommodate these needs.
- E. Orion Health appreciate the opportunity to work as part of the CADMH project and believe we have the right mix of flexible and scalable products, and the experience to partner and deploy solutions successfully. Our track record of successful implementations from small groups of Critical Access Providers across a region, to large regional Care solutions covering up to 20,000 physicians or 7 million people gives Orion the confidence to bid for your business.

D. Company Background

RR-D-01

Please provide the following information regarding the makeup of your company.

CORPORATE INFORMATION	
Company Name	Orion Health Inc.
Company Type (C-Corp, S-Corp, LLC, LLP, Sole Proprietorship, Etc.)	C-Corp
Location Of Corporate Headquarters	Auckland, New Zealand
Location Of Field Support Offices	Implementation Support: Santa Monica, California, Boston, Massachusetts, Edmonton, Alberta, Reading, England, Sydney, Australia, Palma, Spain, Auckland & Wellington, New Zealand
Location Of Programming/Technical Support Personnel	See above.
PRIMARY CONTACT INFORMATION FOR THIS RFI	
Name	James Date
Title	Sales Director – US West
Office/Location Address	225 Santa Monica Blvd, 10th Floor, Santa Monica, CA 90401
Phone Number	310-490-2971
E-Mail Address	James.date@orionhealth.com
Internet Home Page	www.orionhealth.com

RR-D-02

Provide an overview of your firm and its history. Describe the strength of your firm and its ability to meet the needs of California's behavioral health recipients and providers.

(2 pages maximum)

Orion Health was founded in Auckland, New Zealand, in 1993 with five employees. Since its inception, Orion Health has experienced rapid growth, now employing over 260 staff and supplying software to more than 1,000 clients in 22 countries. The company has offices in United States, Canada, the United Kingdom, Spain, Australia and New Zealand.

Orion Health is a global leader in information access and interfacing technologies. Specializing in health IT, Orion Health provides innovative software that integrates and enhances healthcare systems, improving efficiency, accuracy and patient outcomes.

Orion Health rapidly and seamlessly connects databases and information systems, improving the communications and connectivity of the health sector. The company's tools and real-time applications facilitate secure access to and exchange of vital clinical information between hospitals, doctors and clinicians. Tested and proven in heavy traffic hospitals, Orion Health's products are engineered to the highest international standards and have succeeded in delivering several technical firsts.

With its state-of-the-art technologies and skilled management team, Orion Health has experienced unprecedented success, with a historical growth rate in excess of 30% pa. For several years the company has achieved a steadily increasing listing in the Health Informatics Top 100, an elite group of US companies according to healthcare IT revenue. Orion Health's award-winning technologies are used and trusted around the world by high-profile clients, such as Oracle Corporation, First Consulting Group, Hewlett-Packard, Philips Medical Systems, LogicaCMG, Sierra Systems, Sun Microsystems, McKesson, Navimedix, CDC, Abbott Laboratories and many others.

In recent years Orion Health has designed and developed a system intended to improve the care of consumers with Mental Health illness. It supports recovery for consumers by promoting and facilitating the development of an outcomes-focused culture in the mental health sector.

RR-D-03

List the number of employees (Full-time equivalents) in your organization by category for the last 3 years:

Numbers are as at November each year. Note that those with Clinical Backgrounds are already counted in the numbers above.

Category	2006	2007	2008
Total Employees	203	238	281
Installation/Setup	65	78	77
Research and Development	66	68	81
Application / Technology Support	16	17	21
Customer Service / Helpdesk Support	7	8	15
Other	49	67	87
Those with Clinical Backgrounds:			
– Physicians	3	3	3
– Psychologists	0	0	0
– Psychiatrists	0	0	0
– Registered Nurses	3	2	2
– Other Clinicians	3	3	3

RR-D-04

Has your company acquired or merged with any other organizations in the past three years? If so, please list each organization and the purpose behind such activity.

No

RR-D-05

How long has your company been in the business of developing and implementing your Electronic Health Record related products?

Fifteen years

RR-D-06

What were your firm's annual revenues for the last 3 fiscal years?

The annual revenue range is indicated below (for Financial Years ended 31 March):

Range	2006	2007	2008
\$1,000,000 to \$5,000,000			
\$5,000,000 to \$25,000,000			
\$25,000,000 to \$100,000,000	✓	✓	✓
Greater than \$100,000,000			

RR-D-07

What percentage of your firm's annual revenue directly resulted from behavioral health care solutions during the past 3 fiscal years?

The table below shows revenue in the total area of Chronic Condition Management for Financial Years ending 31 March. Within the Chronic Condition Management deployments we do not track exact pathways that are strictly aligned with behavioral health

Category	2006	2007	2008
Percentage of Annual Revenue Resulting from BH Solutions	3.2%	9.6%	5.5%

RR-D-08

What percentage of annual revenue did your company expend for research and development (R&D) on your proposed products during the last 3 fiscal years?

Category	2006	2007	2008
Percentage of Annual Revenue Expended on R&D	20.4	21.6	22.6

RR-D-09

What percentage is budgeted for R&D in the current and next fiscal year?

Category	2009	2010
Percentage of Annual Revenue Budgeted for R&D	Approx 24.5%	Approx 26%

E. Partners and/or Reseller References

RR-E-01

Please list any partners and/or resellers in the areas of behavioral health: Strategic or tactical development, sales, support, delivery, consulting, or training.

Orion Health has system integration partners, technology partners, and a number of resellers.

System Integration partners

- Global: IBM, GE
- North America region: EMC, XWare, forward advantage, First FCG, Sierra, SAIC, Intuitive, Accenture
- Europe, Middle East, Africa region: Fujitsu, SCC, System C, C2c
- Asia Pacific region: Logica CMG

Technology partners

- Global: Hewlett Packard (HP Invent), Oracle, Stratus Technologies, Philips, Initiate
- North America region: Identity Systems, RxHub, emdeon business services,
- Europe, Middle East, Africa region: Intel, ISL
- Asia Pacific region: IBM, HP, HealthLink, LogicaCMG and Ocean Informatics

Resellers

- Global: Philips
- North America region: AMICAS, DST Systems, IntraNexus, NextGen, Provation Medical, SAIC, E-Novation, Health.com, Hill-Rom, Impac, SpaceLabs Healthcare, Streamline Health, Boston Software Systems, Baxter, forward advantage, MISYS, Omnilab, Starlims, Carestream Health, emdeon business services, Healthcare Automation, Keane, Fujifilm, Chart One,
- Europe: Apollo Information Technologies, Deio, imtac, Fujitsu, Omnilab, Carestream Health, emdeon business services, Health.com, Hill-Rom, Keane, Tesis, forward advantage, GE, HealthBlocks, IntraNexus, NextGen, system C, E-Novation, Fujifilm, Healthcare Automation, Impac, McKesson, Waymark Infotech
- Asia Pacific region: Philips Medical Systems Australasia Pty Ltd

RR-E-02

For each partner or reseller listed above, please identify the following:

1. Functional areas.
2. Nature of partnership/relationship.
3. Length of the relationship.
4. Reference -able customers for whom you have jointly provided services.

(3 pages maximum)

The list of partners in the previous section is extensive. In the interest of providing a more relevant response to this question, the most relevant partner and customer are described below:

Partner – Oracle

Nature of partnership: Technical Partner

Reference-able customer(s): California Prisons (Orion: Concerto Portal, cForms, Rhapsody Integration Engine, Clinical Data Repository, EMPI. Oracle: Healthcare Transaction Base and other technology)

Shared Health Chattanooga, TN (Orion: Concerto Portal, cForms, and Soprano Disease Management. Oracle: Healthcare Transaction Base)

Partner – IBM

Nature of partnership: Systems Integration

Reference-able customer(s): California Prisons (Concerto Portal, cForms, Rhapsody Integration Engine, Clinical Data Repository, EMPI)

Kings County NY State (Concerto, cWhiteBoard, Rhapsody, and the CDR)

UCLA (Concerto, Clinical Data Repository, Rhapsody)

Potential Partner – EMC

Nature of partnership: Technical. EMC's Documentum product would be considered appropriate to meet the document scanning and indexing needs of the solution.

Reference-able customer: Orion Health has implemented solutions for several New Zealand District Health Boards to collect mental health data and support recovery for consumers by

promoting and facilitating the development of an outcomes-focused culture in the mental health sector. However, Orion Health has not yet established sites as references for behavioral health.

F. Behavioral Health Solutions Experience

Descriptions of the Functional Requirement Categories referenced in questions RR-F-01 through RR-F-05 of this section are in The Preface (Section A). In your responses to the questions in this section, emphasize your experience in the State of California.

RR-F-01

Describe your firm's experience and qualifications in design, development, and implementation of Behavioral Health Practice Management systems.

(5 pages maximum)

This capability would be provided by a third party that offers a behavioral health Practice Management System. Orion Health's Integration Engine, Rhapsody provides effortless integration between healthcare systems, such as (Practice Management Systems). It supports numerous communication protocols and message formats, ensuring messages are reliably and accurately delivered regardless of the format or transportation type required.

RR-F-02

Describe your firm's experience and qualifications in design, development, and implementation of Behavioral Health Clinical Data Management systems.

(5 pages maximum)

Orion Health's MH-SMART system provides a solution for collecting MH-SMART (Mental Health Standard Measures of Assessment and Recovery) data, and has been provided to two New Zealand District Health Boards (DHBs). MH-SMART is a New Zealand Ministry of Health initiative that all DHBs within NZ are required to comply with. The key objective of the MH-SMART initiative is to support recovery for consumers by promoting and facilitating the development of an outcomes-focused culture in the mental health sector. The initiative is under way to improve the care of consumers with mental health illness.

The principal means of achieving this is through the implementation of standard measures to measure changes (outcomes) in the health status of mental health service consumers along with additional information to make sense of these outcomes. The standard measures to be used belong to the Health of the Nation Outcome Scale (HoNOS) suite

The Orion Health MH-SMART solution was designed in collaboration with clinicians and community care experts. The solution is based on the Orion Health Portal (Concerto) and flexible workflow architecture. The outcome is a system with a flexible and usable interface that supports practitioners throughout the care process. Automatic task generation and tracking

based on business requirements ensure the necessary workflows are followed. User and administrative reports allow visibility of consumer status within the system across a range of behavioral, social and clinical areas.

The system provides tools and technology that allows the DHBs to:

- measure changes in a consumer's mental health status, and
- understand the contribution of their services to a consumer's recovery.

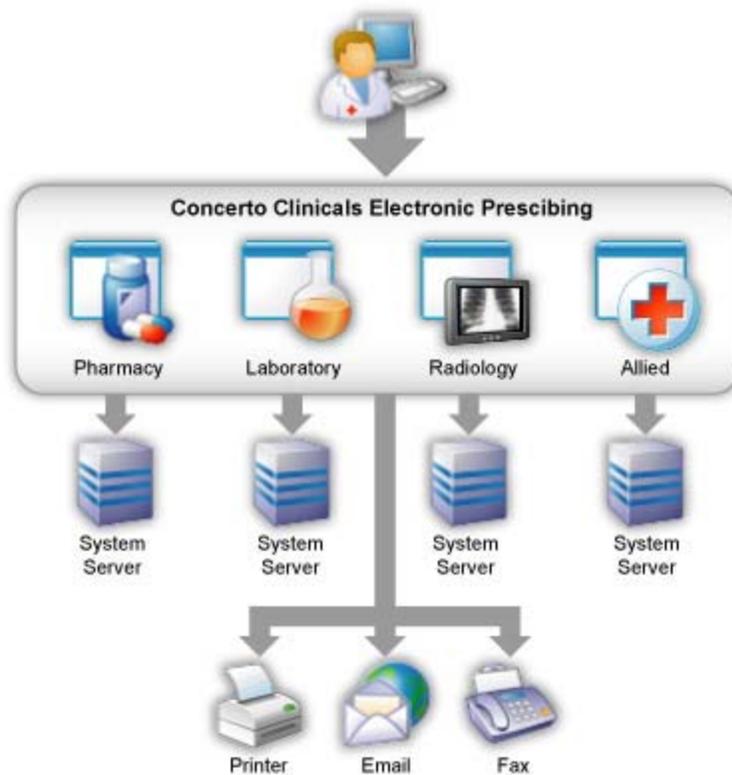
RR-F-03

Describe your firm's experience and qualifications in design, development, and implementation of Computerized Provider Order Entry (CPOE) systems.

(5 pages maximum)

Orion Health has been providing orders solutions to clients for many years and has successfully implemented Orders projects in New Zealand, Australia and the United States. Peninsula Health in Australia is a reference site that demonstrates the implementation of an orders solution.

Orion Health's cOrders was developed in-house by developers and clinical consultants working together to create a web-based application that enables clinicians to rapidly create and send electronic orders for radiology, laboratory, pharmacy, and allied hospital services. Clinical decision support features such as drug/drug and drug/allergy interaction checking reduce medication errors. Orders are streamlined with order sets, including repeat and delayed orders. Alerts warn users when orders have been duplicated within a particular time period.



cOrders is a "one-stop-shop" for all electronic service requests. It is designed to interface electronically with any of the organization's existing service order filling systems using message formats including HL7 and XML. If a particular hospital service does not run a computerized service order filling system, cOrders can send orders by email or to a dedicated printer for manual processing.

When all four modules are licensed, cOrders provides the following functionality to organizations:

- Easy-to-use web-based tools for clinical ordering
- Decision support for ePrescribing
- Drug interaction checking
- Drug - Allergy checking
- On-line drug monographs
- Rule creation to meet region and facility-specific regulations
- Searchable order history
- Audit trail
- Virtual medication charts that are quick and easy to use

RR-F-04

Describe your firm's experience and qualifications in design, development, and implementation of interoperable Electronic Health Record (EHR) systems. (5 pages maximum)

Orion Health has a long history of managing interoperable Electronic Health Record (iEHR) projects and has previously implemented successful clinical communications systems in Canada, Australia, New Zealand and the United Kingdom. Orion Health is currently implementing further systems in Canada and in the United States.

The Alberta Provincial Portal project was recently extended after a successful region-wide implementation with Capital Health in Edmonton Alberta. The Capital Health project, which has been underway since 2004, serves over 1.6 million people across central and northern Alberta. The Alberta Provincial Portal now has around 22,000 clinical users and serves a province of 3.2 million people. Orion Health is now implementing disease management solutions in Alberta.

The Vermont-New Hampshire project has joined three rural healthcare providers, including Mt. Ascutney Hospital & Health Center, Dartmouth-Hitchcock Medical Center and Valley Radiologists P.A., to provide a crucial example of how a Health Information Exchange will improve patient safety and care in more remote healthcare settings. In 2003, the three institutions created the Mt. Ascutney Healthcare Consortium, to design, install and operate an Orion Health Concerto™ Portal and overall system between and among themselves.

In Australia Orion Health has implemented a successful pilot with the statewide electronic health record (EHR) system in New South Wales, which covers 11 hospitals and an estimated 9,000 clinical users. The pilot period was completed in March 2006, and at the end of the rollout phase will service an area covering 497,000 sq miles and a population of 6.5 million people.

In the UK, Orion Health implemented an award-winning community-wide EHR with the Walsall Health Partnership, part of the UK National Health Service (NHS) investigations into developing electronic records systems throughout the United Kingdom.

As the U.S. moves towards an integrated healthcare information system, Orion Health is poised to utilize global best practice with North American experience, gained from its over 250 current customers.

RR-F-05

Describe your firm's experience and qualifications in design, development, and implementation of Personal Health Record (PHR) systems.

(5 pages maximum)

Existing PHR tool in full production and use

Orion's Concerto™ is a browser-based, single sign-on web portal that Orion Health has designed and developed. It provides secure access to multiple healthcare information sources and systems, connecting them to provide a "single patient view" of data across all claims data. Concerto™ uses powerful web software to collate and display medical data from contemporary, legacy and "best of breed" systems.

Each Concerto™ user has a unique user name and is associated with a security profile. This profile enforces password and account restrictions on the user. Authentication information for each user is encrypted and stored securely.

User authentication information is sent to the centralized Concerto™ Server. The Concerto™ Server then authenticates the user using authentication information stored in a centralized location or services provided by other parties. If authentication is successful they are logged into the portal and given access to the health applications for which they have permissions.

Concerto™ users are only granted access to applications if they have appropriate security clearance. In addition to password sign-on, Concerto™ can also be integrated with peripheral secure access devices, such as smart cards, bar code readers, proximity cards and biometric devices (including fingerprint readers).

cForms allows users to enter and update data. The System Administrator can create customized data entry forms, including any combination of radio buttons, check boxes, combo boxes, and free text areas. Rules can be defined for each field on the form, making entry mandatory or optional. Areas can also be defined so that they can't be changed, e.g. users may not be able to change their medical history, but may be allowed to update their family history.

Concerto 6.1 [657529907] - Microsoft Internet Explorer

File Edit View Favorites Tools Help

417372717 SMITH Linda Jane (F/ 38 years) (M)

Blue Book

657529907

Showing all documents

View By Category Look For Clear

Logout

Homepage

Help Home

Child 0-5

Add New Document

Useful Information (3)

Allergies & Alerts (1)

Health History (9)

Health Diary (3)

Child Health Checks (31)

Growth Charts (5)

Observations (3)

Medications (1)

Immunizations (3)

Homepage

My Details

Resources

Add Medication

Medication

Medication Taken/Brand name: *

Dosage (Amount & units):

Frequency/ when are you taking this medication:

How taken?

Strength:

Date Started taking:

Date Finished:

Who prescribed the medication?

Instructions:

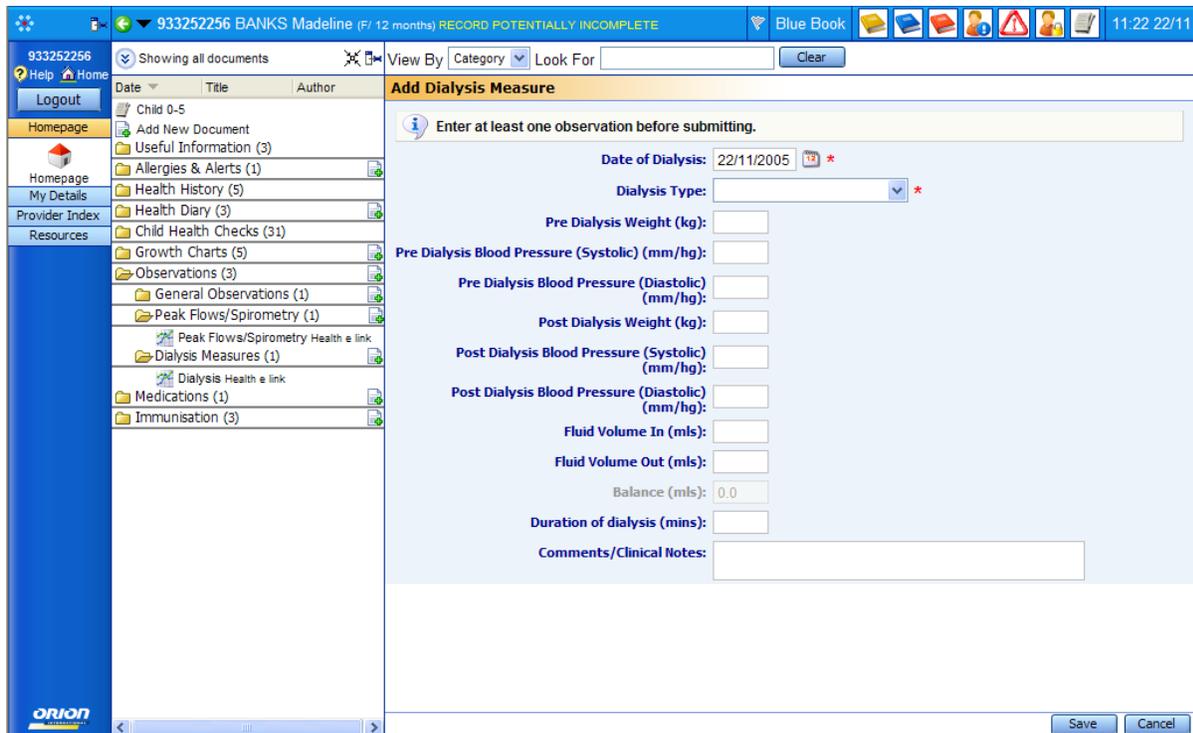
If you have stopped taking this medication specify why:

+ Add another medication

Completed By: Linda Jane Brian

Save Cancel

Figure 1: The **Add Medication** Form for patients to complete online



933252256 BANKS Madeline (F, 12 months) RECORD POTENTIALLY INCOMPLETE

Showing all documents View By Category Look For Clear

Add Dialysis Measure

Enter at least one observation before submitting.

Date of Dialysis: 22/11/2005 *

Dialysis Type: *

Pre Dialysis Weight (kg):

Pre Dialysis Blood Pressure (Systolic) (mm/hg):

Pre Dialysis Blood Pressure (Diastolic) (mm/hg):

Post Dialysis Weight (kg):

Post Dialysis Blood Pressure (Systolic) (mm/hg):

Post Dialysis Blood Pressure (Diastolic) (mm/hg):

Fluid Volume In (mls):

Fluid Volume Out (mls):

Balance (mls): 0.0

Duration of dialysis (mins):

Comments/Clinical Notes:

Save Cancel

Figure 2: Sample **Add Dialysis Measure** for patients to complete online

Providers and beneficiaries that have access to Concerto™ are assigned to user groups that determine their level of access to different information systems. For example, different providers would require different levels of access to beneficiary information, and beneficiaries should only have access to their own data (unless otherwise specified). The membership, user privileges and restrictions of these access groups can be fully configured to suit the unique needs of each site. Beneficiaries and providers will only see the menus and menu items to which they have access.

Beneficiaries can specify several different levels of access that a provider may have:

- ◆ No Access. The beneficiary cannot be viewed at all by the provider. This means the user's name does not even appear in search lists.
- ◆ Locked. The beneficiary's basic demographics can be displayed, but the beneficiary's PHR cannot be viewed.
- ◆ View with Reason. Allows the provider to gain access by providing a reason for accessing the beneficiary's record. This is often a requirement when gaining beneficiary consent through normal channels is not a viable option.
- ◆ Full Access. Allows the provider access to the beneficiary's record.

Concerto™ allows the beneficiary to nominate individual users who may view their record. The level of access given is governed by the user groups, type of information, location and role of

the user logged in.

Below is a sample screen shot which gives parents the ability to compare their child's growth to national averages (shown by the colored percentile lines). Parents enter the weight of their child, and these points are then plotted by Concerto™ on the graph (shown as red triangles). Hovering over a triangle produces a tool tip with the detail of the data entered. Similar growth charts are provided for height and head circumference.

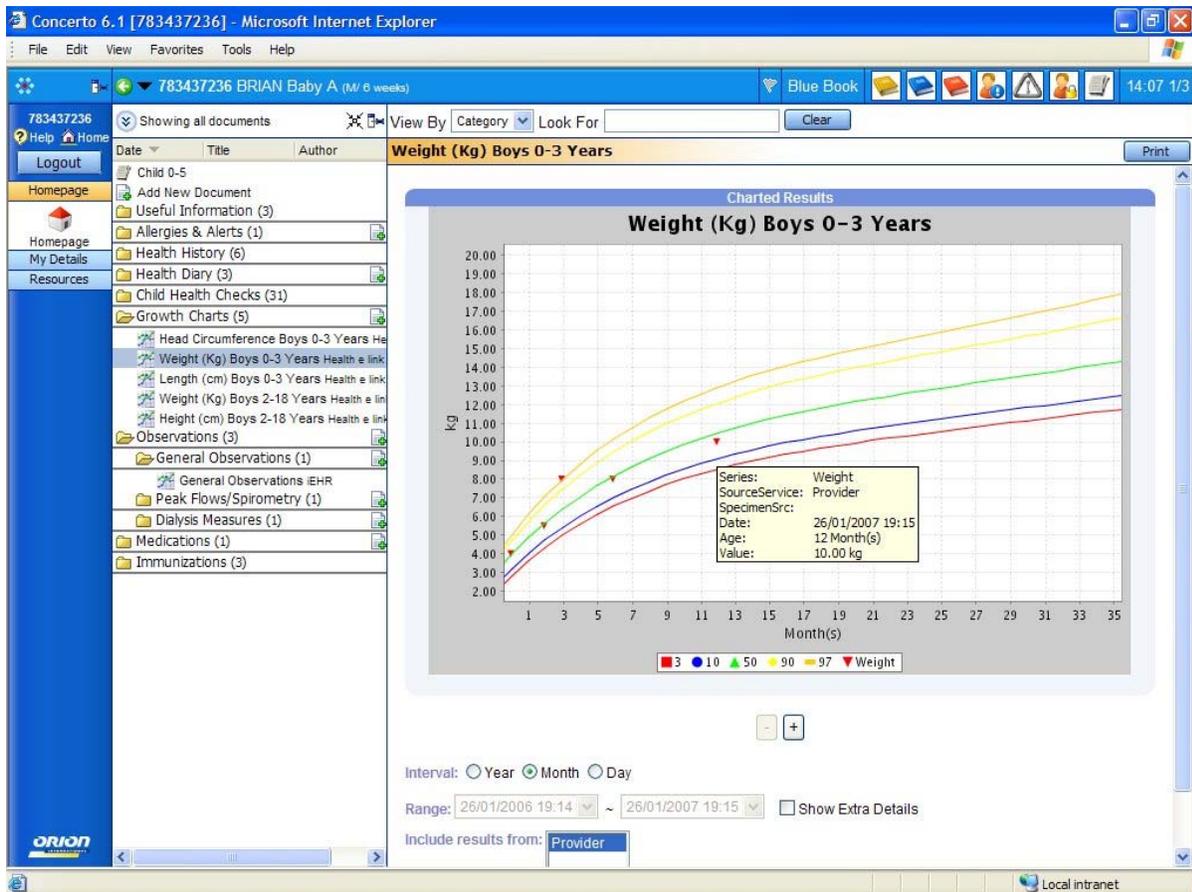


Figure 3: Comparing child's weight against national averages

Orion has implemented a combined RHIO and PHR system for New South Wales (NSW) State Department of Health, Australia. The solution involves patients' access to their records via a secure Internet connection to the Concerto™ portal. All patients are automatically registered in the system, but they need to actively apply for user accounts and passwords in order to access their PHR online. Parents/guardians are linked to their children and can view their records and enter certain data. The Department of Health is running a media campaign prior to go-live to inform patients of the system and how they can apply for a user account. The number of

patients with user accounts is being tracked as one of the critical success factors by which the project is being measured. NSW is expecting that there will be considerable benefits when patients become actively involved in the management of their own healthcare.

In a white paper written by the Mt. Ascutney Healthcare Consortium after completing an EHR system funded under a grant from the Agency for Healthcare Research and Quality (AHRQ), it was noted that the Orion EHR project for the Capital Health Region in Alberta, Canada, constructed a network that closely resembles the RHIO currently proposed by Dr. David Brailer and ONCHIT. That pilot project involved 11 hospitals and 8,500 users and will be extended to the whole Province of Alberta. Both of these EHR projects are in production use and have integrated the capabilities of Orion's Concerto™ and Rhapsody™ solutions.

RR-F-06

Describe your firm's experience and qualifications for Systems Integration. (3 pages maximum)

Orion Health would partner with a large experienced Systems Integration services company with a strong local presence such as EMC or IBM. These partners would provide a successful and smooth implementation of the solution.

RR-F-07

Describe your firm's experience and approach to the conversion of electronic behavioral health data.

(1 page maximum)

Orion has significant experience with the conversion of healthcare data, and has a dedicated Data Integration and Conversion Team. As an integration company first and foremost the majority of the projects implemented globally require taking existing healthcare data and restructuring it. It is a core part of every solution we provide, including behavioral health.

Measures of Behavioral data can be subjective and are often left to the interpretation of the person recording the information. A way to avoid subjectivity is to categorize data where possible, to allow consistent comparison and analysis. Across solutions that encompass subjective data, Orion has worked with the area experts to devise unambiguous, easy to interpret and determine, but still meaningful methods of data conversion.

In addition, there are several aspects to data conversion in general; message format mapping, data translation, aggregation and reporting.

Conversion for Mapping & Translation

This involves extracting data (possibly from multiple locations), converting it into different formats and then placing it in a different location. Whether that location be a CDR or a Physicians EMR makes no difference to the technology used. The Rhapsody Interface engine provides this functionality to thousands of organizations globally.

Conversion for Reporting and Data aggregation

Orion regularly deals with accessing data from multiple locations and presenting it in a way which changes and enhances the value of the data to an organization. This commonly involves data aggregation and transformation for reporting and analysis. This form of conversion is a core part of what the Concerto portal was designed for.

Whether the solution requires a Federated or Centralized data model the need to convert and move data is essential to some level. Obviously with the Centralized approach all the data is moved and converted into a format required by the Central Data repository. Once inside a CDR the data can then be normalized and data-mined effectively to meet the needs of the clients. With a Federated model across a region the need to convert data often comes from the performance or lack thereof from the Legacy systems. It is often the case that data conversion and transportation needs to occur to enable data to be readily available in a practical timeframe for the end users. In these instances Orion normally transport the data to a staging area for more timely access.

RR-F-08

Describe your firm's experience and approach to the conversion of paper-based behavioral health data.

(1 page maximum)

G. Orion does have experience with paper-based data conversion, and is very capable of providing a solution for smaller more budget-constrained customers. However as this can be a specialty topic we often recommend Solution partners like EMC, and would refer you to their RFI response. Solution Product History

RR-G-01

Please provide the following information about the solution product(s) that you propose.

#	Product Name And Primary Function	When First Developed	When / Where First Deployed	Number Of Installations To Date
1	Orion Health Portal (Concerto)	V1.0 June 1998	May 1999/South Auckland Health Board, NZ	66
2	cForms	V1.0 1999	1999/Counties Manukau District Health Board	24
3	CDR Clinical Data Repository	V1.02 Jan 2002	2002/Peninsula Health	30
4	cWorkflow	V1.0 January 2000	Waitemata Health, NZ/Nov 2003	12
5	cOrders	V1.0 June 1998	May 1999/South Auckland Health Board, NZ	66
6	Orion Health Integration Engine (Rhapsody)	V1.0 Feb 2002	2003/Greene Memorial, Ohio, USA	> 500

RR-G-02

For each solution product listed in the above table, please provide:

1. The history of the product including whether the product was internally developed or acquired from another source.

Orion Health Portal (Concerto)

Developed Internally

Date	Version	Major Enhancements
June 1998	1.0	Initial version developed
January 1999	2.0	Ported from Microsoft ASP to Java
May 1999	3.0	User maintenance; Application maintenance; Patient context; Custom searches
May 2000	4.0	Configurable context applications; Configurable menu applications; Configurable HTTP redirections; Customizable SQL Searches; Custom document viewer; Object database; Multilingual Support
October 2001	5.0	InstallShield; Clinical Document Viewer (CDV) added; Relational database; New look and feel
February 2002	5.1	Portal pages; Document status display added to CDV; CDV control bar added to allow document specific buttons to be configured; Audit logging enhancements; XML/XSL processing capabilities added Security enhancements to enforce password strength checking and lockout capabilities; Biometric authentication; Enhancements to CCOW functionality; Summary entry point added to CDV; Web farm/clustering support
October 2002	5.2	Patient Privacy Rules added; NTLM authentication to allow users to logon using their Windows username and password; LDAP integration to allow synchronization of user group memberships

Date	Version	Major Enhancements
		and user attributes;
August 2004	6.0	Custom patient Worklists added; User messaging; Administration workflow enhancements; ; CCOW 1.3 support; Look and feel enhancements; CDV navigation improvements; Enhancements for clustered installations; Multiple RDBMS
February 2005	6.1	Single Sign-On (SSO) Support; User Notifications; Rule-based user notifications, More flexible security model Incorporating location-based security rules Time zone support
August 2005	6.3	Printing of user messages once sent and/or received; Security model expanded to include support for roles. Auditing enhancements, including auditing of generic searches, logging the user's full name (alongside their username), and logging of changes to privacy rules and conditions;
March 2006	6.3	Firefox support; Mac OS X support
January 2007	6.4	Support for configuring entry points made available in worklists and patient histories; Microsoft Internet Explorer 7.0 Support;
May 2007	6.5	Enhanced support for LDAP
September 2007	6.6	Application Server and operating system support enhancements

cForms

Developed Internally

Date	Version	Major Enhancements
1999	1.0	Initial Product Release supporting electronic discharge summary (EDS) documents

Date	Version	Major Enhancements
2001	2.1	Soprano™ Suite release alignment
2003	3.5	Lab Results and Radiology support Document versioning Custom Forms Spellchecker Pre-population Structured Data support Weblink support
2004	5.0	Support for other clinical documents through templates Multiple access locking XML Messaging Auditing Auto-complete
2005	5.5	Timezone support Unix support Apache Web Server support Multiple Patient Identifier support Oracle Database support
2006-2008		Patient Information Sheets and Printouts Authentication support for Prescription Printing Problem List support Rich Text Editor support Display of all contributing authors

Date	Version	Major Enhancements
		Lab Results Preview Section Hints
2008	6.0	Custom Document Printouts Resend Document support

CDR Clinical Data Repository

Developed Internally

Date	Version	Major Enhancements
2001	3.X	Subset of HL7v2.3 ORU messages MS SQL Server only Windows only
2005	4.X	Subset of the HL7v2.4 ORU and REF messages SQL Server 2000, Oracle 10G Unix/Windows Lab results viewed through SRV Sign off Enforcement of consistent result status changes Uses JMS All reports fully versioned
2007	4.X HDD	Backend for Soprano Clinical Documentation Backend for eReferrals Additional model-based Reporting database created
2008	5.1	cDictionary and cRepository components developed to use

Date	Version	Major Enhancements
		<p>explicit document models</p> <p>The user can create/extend datatypes/models</p> <p>cDictionary will import created/updated models defining new message structures</p> <p>cRepository will generate database schema for new/updated models to store new message structures</p> <p>Documents versioned in terms of data and model</p> <p>Pluggable business logic pipeline</p> <p>Pluggable Document Processor to update multiple documents on event</p> <p>Ships with CDR 4 ORU/REF models and business functionality</p> <p>Ships with ADT messages and business functionality</p> <p>Capacity for higher volumes of data</p> <p>Available currently on Oracle and MS SQL Server</p> <p>Architected to be easily extensible to other SQL dialects</p> <p>Windows/Unix/AIX</p>

cWorkflow

Developed Internally

Date	Version	Major Enhancements
January 2000	1.0 - SDM	<p>Product Name: Soprano Disease Management</p> <p>Rules engine</p> <p>Task Dictionary</p> <p>Patient Demographics</p>
January 2002	2.0 – SDM	Messaging interface

Date	Version	Major Enhancements
January 2003	5.0 - SWE	Product name changed to Soprano Workflow Engine Forms Designer Separation of Tasks/Forms Patient Demographics Cache Provider Cache
January 2004	5.1 – SWE	Enhanced Messaging capability Status Query Lookups
March 2005	5.2 - SWE	Messaging improvements Forms improvements Versioning of Demographic data Support for National Immunization Register External National Identifier Lookup
December	6.0 - cWorkflow	Product name changed to cWorkflow Extensible Task component Specifically designed for Task based workflow

cOrders

Developed Internally

Date	Version	Major Enhancements
July 2007	1.0	Initial product release
July 2007	2.0	Support for custom SWE forms; duplicate therapy decision support and controlled drug support.
Jan 2008	3.0	User interface redesign

Orion Health Integration Engine (Rhapsody)

Developed Internally

Date	Version	Major Enhancements
February 2002	1.0	Basic initial release of engine
July 2002	1.1	Local save/load/merge of routes; equation conditional connectors; message throughput and other statistics graphing; support for fail-over environment; Web-based Monitoring TCP/IP SSL enhancement;
September 2002	1.2	Audit functionality upgraded;
March 2003	1.3	Extend communication point functionality
October 2004	2.0	Strengthened encryption for passwords. Improvements for archive scheduling. Communication Point Scheduling New Filters and Communication Functionality: Support for W3C XML schemas, allowing HL7v3 messages to be converted between different messaging formats
May 2005	2.1	Upgraded Message Tracking capability; New Code Validation Filter for validation of code sets used in HL7 Messages;
November 2005	2.2	PostgreSQL support - Introduced dynamic TCP, FTP and SFTP connections - Limited DICOM Support
April 2006	2.3	Informix Database Support SQL Server 2005 Support Significantly improved XSD support

Date	Version	Major Enhancements
October 2006	2.4	Integrated Help System; Significant Interface enhancements for ease of use and maintenance Increasing engine performance Automatic documentation generation
September 2007	3.0	High Performance Message Store New Monitoring Interface FIFO support within routes Notifications
February 2008	3.1	Message Resending Improvements Message Tracking Upgrades Database Configuration Interface XSD Generator Map Designer Enhancements

2. The specific Industry standards that the product was designed to, including any exceptions to those standards.

Orion Health is committed to an "open systems" / "best of breed" approach to software implementation. As a specialist in health IT integration, all our software is designed to interact and integrate with systems built by other vendors, as part of a wider integrated clinical information system. All our products are designed to use technologies and standards endorsed by healthcare organizations around the world, such as

- Messaging and data formats: HL7, XML, SQL, EDIFACT; X.12; HIPAA 837, 997, 277, 275, 835 v. 4020; HCFA X.12 837A; UB92 v.4.1 and V.5.0; ASTM; NCPDP; and DICOM.
- Networking / Database Connection protocols: TCP/IP, VPN, JDBC, ODBC,
- Development languages and internet technologies: Java, HTTP, HTML, JavaScript, CSS, XSLT
- Security and Authentication protocols: HTTPS, LDAP, PKI, SSL, IPsec

Our software is designed to be deployable on a range of industry standard hardware, operating systems and databases, meaning customers can install it on their preferred platform.

As a member of Health Level Seven Inc (HL7), we actively participate in standards development efforts. Some of our staff are currently members of technical committees related to the field of

health informatics such as the American Society for Testing and Materials (ASTM).

Orion Health aims to leverage a customer's existing infrastructure, to maximize previous investment made in these systems, and provide a platform which allows non-disruptive step-by-step upgrading over time as budget and resource allows.

#	Product Name	Industry Standards	Exceptions
1 to 6	Orion Health Portal (Concerto) cForms CDR Clinical Data Repository cWorkflow	Java, J2EE servlets, HTML, JavaScript, JDBC, SQL, CSS, LDAP, HTTP, JDBC, XML, XSLT, CCOW, HL7. WSDL 1.1, SOAP 1.2	None

3. Whether the product is CCHIT certified.

a. If the product is CCHIT certified, for which category and year is it certified? Examples would be "Ambulatory 2006", "Ambulatory 2007", etc.

b. If the product is not CCHIT certified, do you plan to acquire CCHIT certification and if so, in which category and when?

Orion Health's clinical portal is not CCHIT certified simply because we are unaware of any CCHIT criteria or process for clinical portals. Orion Health's current solution set is most closely aligned to the CCHIT ambulatory criteria, and there is also a core set of security, privacy, data access/presentation, and interoperability functionality that aligns well with the security requirements. We are considering the network certification as a likely category / option though there has been no decision made to pursue certification at this stage.

RR-G-03

How are enhancement and new release priorities determined?

Change requests may be made during the project if they are required during project implementation; project disciplines will apply. After go-live, enhancements may be requested by customers making software change requests via SupportTracker, (the Orion Health Online

Issue Tracking System – see RR-G-04 below for a full description) which ensures that they are properly tracked. Logged requests are prioritized according to demand and the product roadmap.

RR-G-04

How are clients supported during the release of an enhancement?

Support Services (via SupportTracker – see below) manages, tracks and resolves queries, whether it be a technical question, issue report, or enhancement. If changes to the software are required, Support Services liaise with the Orion Health Development team to initiate and scope service releases.

Support Services generally provide their services remotely, however onsite services may be undertaken when necessary and at an additional cost, based on service agreements. In order to ensure prompt and efficient service delivery, Orion Health clients must provide reasonable access to production and test environments, as well as be responsive to Support Services Professionals.

All client service requests must be logged in the first instance into the Orion Health Online Issue Tracking System, Support Tracker. Support Tracker is an online service and all Orion Health clients are provided with a unique login and password to access this website when their solution is implemented.

Logging a service request online allows Support Services to most effectively track and manage client requests, from initial query through to resolution, and ensure your satisfaction.

When an urgent query (Level 1 or 2) is logged online, Support Services is instantly notified via an SMS message, ensuring that urgent queries receive immediate attention. A 24 hour toll free number is provided to clients as well. All queries are responded to, however, for those clients who do not have 24 hour service level agreements, additional charges may be incurred.

Generally, client requests sent via standard email are actioned during standard business hours. Urgent requests should be logged into Support Tracker to ensure prompt efficient service. Clients have the ability to create custom online reports on the progress of logged requests and problem resolution through Support Tracker.

RR-G-05

Describe the size of the installed base of your solution. Include the number of users and the number of sites where the product is installed.

As Orion Health provides flexible solutions from a product suite that can be “mixed and matched”, it is more appropriate to consider sizing in relation to each aspect of the solution. Please refer to G-01 for solution sizing in relation to each individual product that comprises the complete solution.

For example, the Orion Health portal (Concerto) has 66 installations to date, as does cOrders, whereas Rhapsody Integration Engine has more than 500 installations.

Similarly, the number of users per site can vary greatly. Of the 66 Concerto™ installations, numbers of users vary from a minimum of 10 users per site to a maximum of more than 20,000 per site.

RR-G-06

Describe any regularly-held seminars or user group meetings available to users of your product and the time/place of the next gathering.

Orion Health runs regional Concerto™ and Rhapsody User Group Conferences which are a way customers can interact with Orion Health and influence solution development. The next Concerto and Rhapsody User Group Conference is scheduled to occur May 12-15, 2009 in Las Vegas (held at the Mirage Hotel).

Participants are a mix of clinical, technical and management staff from our customer base. Each twice-yearly User Group Conference lasts one full day and includes:

- Pre-release product demonstrations
- Case studies (presented by the customers)
- Current and future strategic direction of company
- Change management discussions
- Current/future functionality discussions
- Product management announcements
- Regional updates for Australasia, Europe and North America

All suggestions received are fed into the "Features and Ideas" stage of the product management process. Suggestions are also received from customers via account managers, project managers, implementation staff, sales representatives and support staff.

H. Solution Product Technologies

Software Technologies

RR-H-01

Provide the technologies used for each solution product identified above.

#	Product Name	Product Type (Client Server, Web, Etc.)	Operating System (Windows, Unix, Linux, Etc.)	Database (SQL Server, Oracle, DB2, Etc.)	Application Language (VB6, VB.Net, C, C++, C#, Java Etc.)
1	Orion Health Portal (Concerto) cForms cWorkflow cOrders	Web Client	Windows 2000 Windows XP (SP1+) Vista (Internet Explorer 6 & 7, Firefox 2)	N/A	
2	Orion Health Portal (Concerto) cForms cWorkflow CDR Clinical Data Repository cOrders	Server	AIX 5.x/6,x HP-UX 11i v2+ Windows 2003 Server (x86, x86_64) SUSE ES 9,10 (x86, x86_64) Redhat ES/AS 4, 5 (x86, x86_64)	Microsoft SQL Server 2000/2005 Oracle 9i Oracle 9i/10g	Java

#	Product Name	Product Type (Client Server, Web, Etc.)	Operating System (Windows, Unix, Linux, Etc.)	Database (SQL Server, Oracle, DB2, Etc.)	Application Language (VB6, VB.Net, C, C++, C#, Java Etc.)
3	Orion Health Integration Engine (Rhapsody)	Server	AIX 5.x HP-UX 11+ Solaris 9 (SPARC) Windows 2000 Server (x86) Windows 2000 Advanced Server (x86) Windows 2003 Server (x86, x86_64) SUSE ES 9,10 (x86, x86_64) Redhat ES/AS 4, 5 (x86, x86_64)	N/A	Java
4	Orion Health Integration Engine (Rhapsody)	Client IDE	Windows (NT/2000/XP/2003/Vista)		C++ using Microsoft Foundation Classes (MFC).

Server Hardware Minimum Specifications

RR-H-02

In the following table, please provide the minimum server hardware technical specification levels for operation of your solution software products. Please consider all types of possible servers such as: database, fax, email, internet, backup, image management, etc.

Minimum server hardware technical specifications are a function of many implementation specific variables and anticipated usage patterns – Orion Health will implement a specific configuration to match California Department of Mental Health requirements.

Note 1:

- Example technical specifications for an existing customer with 1400 concurrent users based on Red Hat Linux Operating system, Oracle RDBMS, and Itanium Processors

Note 2:

- Assume site receives around 100,000 messages per day or about one message every two seconds.
- Assume that each message requires mapping from one format to another and performs a simple table lookup and replace before forwarding to another 15 systems.
- We assume that peak loads are about 4 times the sustained rate.
- Total messages load per day 1,500,000 (15x100,000) or 18 messages every second.

#	Primary Server Purpose	Number Of Processors Per Server	Processor Type/Speed (MHz)	Memory (Gig)	Storage (Gig)
1	Orion Health Portal (Concerto) – Server	2	Itanium/ 1.6GHz	4 GB	2 x 72GB (Mirrored)
2	Orion Health Portal (Concerto) – DB Server	4	Itanium/ 1.6GHz	16 GB	2 x 72 GB (Mirrored) (for OS and RDBMS only,
3	Orion Health Integration Engine (Rhapsody) – Server	1	Quad PA-8900/1GHz	8 GB	<ul style="list-style-type: none"> ▪ 36GB disk for OS & Applications ▪ 400GB Raid 10 for message stores ▪ 200GB Raid 10 for other data

Client Hardware Minimum Specifications

RR-H-03

In the following table, please provide the minimum client hardware technical specification levels for operation of your solution software products. Please consider all types of client types including workstations, tablet PCs, PDAs, etc.

#	Type of Client Hardware	Operating System	Processor Type / Speed (MHz)	Memory (Gig)	Browser Level (If Applicable)	Required Disk Space (If Applicable)
1	Web browser enabled device	Windows 2000 Windows XP (SP1+) Vista	Pentium 500 MHz min 1 GHz (recommended for Vista)	256 MB - min 512 MB - recommended	Internet Explorer version 6.0 or higher Firefox 1.5 or higher	The minimum required for Internet Explorer to function will suffice
2	Orion Health Integration Engine (Rhapsody) – IDE client	NT Windows 2000 Windows XP Windows 2003 Vista	1 GHz	512 MB	Internet Explorer version 6.0 or higher Firefox 2.0 or higher	300 MB

Additional Comments:

- For the web solution (Concerto, cOrders etc.) the web browser enabled device must be capable of display in 1024 x 768 in high color (16 bits), true color (32 bits).
- Rhapsody IDE client requires Microsoft .NET Framework 2

Peripheral Hardware Minimum Specifications

RR-H-04

Provide the minimum peripheral hardware technical specification levels for operation of your solution software products. Please consider all types of peripherals such as printers, scanners, card readers, notepads, etc.

The solution is web-based so there are no minimum peripheral hardware specifications. The client workstations require monitors, keyboards and pointing devices, while printers may also be used where required.

#	Type Of Peripheral Hardware	Operating System (If Applicable)	Specifications/Characteristics
1			
2			

Minimum Network/Communication Specifications

RR-H-05

Provide the minimum network/communication technologies employed by your solution software products.

Each client machine that needs to access to the solution will be required to have a corresponding network interface card installed with minimum specification as the table below. The minimum specification will be higher if the data includes images, e.g. downloading DICOM based image would require higher bandwidth than all text based data.

#	Type Of Network/Communication Technology	Operating System (If Applicable)	Specifications/Characteristics
1	LAN		10 Mbps
2	WAN		768 Kbps on DSL / ADSL

The network interface between servers would require minimum 100Mbps.

System Backup/Recovery Considerations

(Not to exceed 4 pages)

RR-H-06

Describe the system backup process for your core product.

The Concerto™ backup process is a normal operational process within the scope of customer operations staff that is carried out by our customers or their hosting partners. There are no special requirements.

RR-H-07

Can backup be completed in a dynamic mode so that the system can be operational 24 hours per day?

Yes

RR-H-08

Describe any automated backup features that allow rapid and unattended backups of system and operational data on a user-scheduled basis.

Concerto™ Clinical Portal uses the backup mechanism of the underlying database management system. Typically a site will use the tools supplied with the database management system and/or operating system to manage the backups. Some sites may also have preferred third party applications already in use for other systems - these can also be used for Concerto™ Clinical Portal if desired.

Concerto™ Clinical Portal also has the ability to export a "Merge File" of all or part of the configuration in the system. This can then be imported into another instance of Concerto™ Clinical Portal. This technique is typically used when migrating changes between development, test, training and production environments.

All applications and data (encrypted) should be backed up to DLT tape each night. These backups should be stored securely offsite with a recognized data security company. Tape backups can be retrieved 24 x 7 x 365 within 60 minutes.

All databases should be fully backed up each night and transaction logs backed up every 4 hours. These backups should be included in the DLT tape backups. To reduce the risk of a single disk failure resulting in loss of data the transaction logs should be written to a separate physical disk on the database server, or if possible, a separate physical server.

EDI (Electronic Data Interchange) applications and data are duplicated each night to secure off site servers. A dedicated machine should be on standby to replace the production server if required

RR-H-09

Can the system be configured to support improved fault tolerance and system recovery (e.g., mirrored disk drives/servers)?

Yes – If the Department of Mental Health requires high availability, the solution can be deployed in a formal clustered architecture.

The clustered Concerto™ Clinical Portal web/application servers are typically configured in a "Web Farm" type environment - i.e. incoming user sessions are distributed between the available servers through a technique such as DNS round-robin. This provides both scalability (capacity can be increased by adding additional nodes to the cluster), and fail-over (in the event of server failure, the cluster control software simply routes the users on that server to another in the cluster).

The mode of clustering recommended on the database server depends on the particular database management system (e.g. SQL Server vs. Oracle) and operating system (Windows vs. Unix) in use. If possible, Orion Health recommends that database clusters operate in "Active-Active" configuration (i.e. all nodes in the cluster are on-line and service end-user requests), as this offers both scalability (capacity can be increased by adding additional nodes to the cluster) and fail-over.

Some Concerto™ Clinical Portal sites also elect to have a "backup" database available, which is kept in synchronization with the on-line database through the database replication or transaction log shipping mechanism of the database management system. Such a configuration provides a further contingency against data loss and downtime in the event of a critical failure in the SAN / shared disk array of the database cluster.

Data Archiving Considerations

(Not to exceed 4 pages)

RR-H-10

What are the capabilities for archiving data?

Storage costs have dropped so much that Orion Health believes data can be managed and the need for offline archiving can be removed by a well designed database with disaster and full

fault tolerance, hot backups, high availability and redundancy. Old information is retained but user administration can provide restricted access to default views of relevant periods to prevent overload

The products from Orion Health use industry standard relational databases such as Oracle and MS SQL server. This means that data can be easily archived if required, though a tool provided by the corresponding DBMS.

RR-H-11

What are the capabilities for restoring archived data?

The products from Orion health use industry standard relational databases such as Oracle and MS SQL server. The data archived though a tool provided by the corresponding DBMS should be restored by using the same tool.

RR-H-12

What tools/media are used for archiving data?

The products from Orion health use industry standard relational databases such as Oracle and MS SQL server. If the client wishes to archive data contained in a database, Orion recommends using a tool provided by the corresponding DBMS.

System Interface Considerations

(Not to exceed 3 pages)

RR-H-13

Describe your overall approach to developing, testing, implementing, and upgrading system interfaces to other third-party systems. Describe the process you use to settle disputes over interfaces between your solution and others.

Once the client identifies how the third-party system should be integrated within the Orion solution, e.g. single sign-on link, Orion gathers information from the client/vendor on the system's available integration methods. Based on these methods, Orion Health will then target the most suitable way for the Orion products to integrate with the system. If the method involves the use of existing product functionality, the Orion project team implements the solution. If custom work is required, the Orion LID team develops a solution to be integrated with the Orion products. The solution is documented and tested against the client's

Development or Test environment. Typically, Orion product upgrades do not affect third-party integrations however, in the case of some intricate integrations, the documentation is referenced to redeploy the integration configuration.

RR-H-14

With what version of HL7 is your product compliant?

Orion Health products are compliant with all versions of HL7 from 2.1 to 2.7 & with a number of flavors of HL7 version 3

Data Security Considerations

(Not to exceed 3 pages)

RR-H-15

Discuss your approach to data/information security, especially with regards to Internet technologies. What level of encryption and authentication is supported?

Privacy and User access

Patient privacy and user security is one of the strengths of Orion Health's solution. The access control model and patient privacy module have been carefully designed to accommodate federal, state and local laws and regulations in multiple countries worldwide.

Concerto™ Clinical Portal has a comprehensive range of security features, designed to balance these two competing principles:

- The right to privacy for patients must be respected, which in practice means that only that information which they have specified be available should be viewed by clinicians.
- The clinician must have access in emergency situations to information that may be crucial to patient care, even if the patient has specified that this information is private.

The aim of the Concerto™ Clinical Portal privacy policy is to set up a system that balances the privacy rights with the access needs to patient information.

It helps enforce and support organizational policies and procedures required for HIPAA compliance in the United States.

Security

HTTP security provides secure transmission of information between Concerto™ and integrated

repositories or applications that are HTTP security aware, allowing centralized maintenance of user information.

There are two parts to Concerto™ security:

- Access control
- HTTP security

When a user requests Concerto™ to open an application entry point by clicking on its icon, an HTTP request is sent to the Application Redirector on the Concerto™ server. When the Application Redirector receives the HTTP request, it checks to ensure that the currently logged in Concerto™ user is authorized to access the requested entry point.

The current user is determined using the HTTP session associated with the HTTP request. Since the user is determined using the HTTP session on the Concerto™ server, malicious users cannot simply fake HTTP requests asking Concerto™ to open application entry points that they do not have access to.

If the Concerto™ user is authorized to access the requested entry point, the Entry Redirection for that entry point will be processed and sent back to the Concerto™ client.

Concerto™ HTTP security has the following features:

- Prevents replay attacks to gain access to secure resources
- Prevents modification of the information sent to a secure resource
- Uses Private Key security to validate that information was sent from Concerto™ and that the user is authorized to access the resource

Concerto™ HTTP security is used between the Concerto™ server and HTTP resources that are Concerto™ security aware. The Concerto™ administrator can set whether HTTP security is used, by configuring the encryption method for HTTP redirections sent from the Concerto™ server.

Firewalls

It is assumed that the Concerto™ server will be sitting behind a firewall and that data will be stored on an appropriately secured database to protect it from tampering and illegitimate use. No patient information is stored on client machines.

Remote Access

Remote clients can connect to Concerto™ server via HTTPS or they can connect to the network via a VPN connection using IPSec. Once the client machine has been authenticated on the

network, they can talk to the server using either HTTP or HTTPS.

Secure Storage of Authentication Information

Authentication information for each Concerto™ user is stored securely in the Concerto™ database. Each user password is combined with a random nonce and then passed through the SHA-1 one-way hash algorithm. The result of the one-way hash is stored in the Concerto™ database, along with the nonce. The password used to logon to Concerto™ for any user cannot be determined from the information stored in the Concerto™ database.

Scalability Considerations

(Not to exceed 3 pages)

RR-H-16

Describe your product's ability to expand to accommodate increasing numbers of users, servers, etc.

All Orion Health's products are horizontally and vertically scalable with no known practical limitations.

RR-H-17

Provide any performance metrics that describe the maximum load(s) under which your system can continue to perform at an optimum level

Orion Health's solutions have no appreciable limits; for example they operate for entire Canadian provinces.

RR-H-18

It is possible that many counties will want to work with the same vendor. How would your company mitigate the impact from potentially high-volume purchases from multiple counties in California? Include in your answer the need to hire additional staff, increase locations and the possible impact to implementation and training schedules, and problem response times.

Orion Health would partner with a large experienced Systems Integration services company with a strong local presence such as EMC or IBM. These partners would be able to provide the staff required to successfully implement the solution for multiple counties in California with little or no impact on schedules and problem response times.

I. Functional Requirements Survey

This section is answered in the CA BH-EHR Functional Requirements Survey for Orion Health spreadsheet.

J. Implementation Plan

(Not to exceed 5 pages.)

RR-J-01

Describe your suggested best-practice approach to implementing your solution. Please include details regarding data conversion and training, and how these activities contribute to your suggested approach.

Orion Health would work with a third party systems integrator such as EMC or IBM and would include the Orion Health implementation within the systems integrator's implementation.

Orion Health's implementation approach includes:

- **Project Scope and Design** - An implementation planning study involves user requirement analysis, architecture design to fit the requirements and interface specification. Key business stakeholders and representative system users will be included to ensure products delivered meet expectations. The output of this stage is a detailed design, project plan, risk management strategy, and risk register. These documents are used as the blue print for the implementation.
- **Integration and Configuration** - This stage involves the configuration of interfaces. Some custom development required to meet the user requirements may be included in this stage if necessary. Full interface specification documents, which will be signed off by the customer, will be utilized to ensure that the business requirements are properly addressed and that there is a consistent approach to integration.
- **On-Site Installation and System Refinement** - When stage two is completed and the products have been released from internal Orion Health Quality Assurance, the products are ready to be installed on the test environment. Once the software is installed, interfaces enabled, testing by the customer begins. This is an iterative stage where testing, system refinement, and re-testing take place. The culmination of this stage is user acceptance for deployment or installation on the production system.
- **Training** - Full application and interface training is provided in a series of courses and workshops. A train the trainer approach is utilized, where by training will enable the customer to train subsequent sites and users independent of Orion Health resources.
- **Production Implementation** - The software is installed on the production system, and interfaces enabled. Orion Health recommends that this stage is lead by the customer's operations and system administrator team. Orion Health technical resource will support the county as they take responsibility for putting the system live. When final user acceptance of the production system is attained the system is prepared for live and full live occurs.

- On-Site support - For the initial live period an onsite technical resource is provided to assist the customer resolve issues, perform system fine-tuning, stabilize systems maintenance procedures and generally assist where required.
- Post Implementation Review - A post implementation review is carried out in order to garner lessons learned, key risks, and the recommended implementation approach at subsequent sites. This stage is key to the management of the solution roll-out. From the post implementation review the roll-out plan and management strategy will be documented - these documents are used as the blue print for the roll-out.

RR-J-02

What is the typical implementation timeframe for your solution? Express your answer as a range (6 to 12 months, 1 to 2 years, etc.) qualified by a size-of-project; factor such as number of users, total project cost, etc. An example would “6 to 12 months for a total project cost not exceeding \$500,000” etc. Please feel free to share any metrics that you typically use to estimate the timeframe for the implementation for your solution.

The implementation timeframe for an Orion solution depends on the size of the project. For some of the regional solutions in Canada covering several million lives the projects take 1-2 years. For the smaller regional implementations covering around several critical access facilities we typically allocate around 3 months. We do these smaller projects using the Rapid Deployment Edition of Concerto, a product that for a fixed set of requirements really satisfies. For projects whose requirements are outside of the base RDE installation Orion will work with the client to define the additional functional requirements and the associated implementation schedule.

The metrics that affect the timeframe are things like: how ready the connecting systems are to share data in a standards based format, how many systems need to be connected and how many of those share similar standards.

Based on our experience to date we would expect the typical county implementation to be less than 6 months, irrespective of the complexity. Much of this time is associated with change management and addressing clinical issues rather than any technical constraints.

K. Training and Documentation

Training

(Not to exceed 2 pages)

RR-K-01

Describe the types of training offered, i.e., end-user, systems administrator, installer, etc.

Types of training offered include:

- Administrator & Technical Training
- Train the Trainer

RR-K-02

How often is training offered (as needed, or on a set calendar schedule)?

Orion Health runs two courses, which are timetabled to run just prior to the roll out of the pilot project.

Orion Health suggests that the California Department of Mental Health nominates a few staff to undertake the "Train-the-Trainer" course. On completion of this course, the participants would be responsible for training the end users of the system.

RR-K-03

Please give the duration of each class, the location of training and the recommended number of people that should attend training.

Administrator & Technical Training ~ 3-day Course

In-depth Administrator level training is provided for all staff involved in the administration and technical support of the system.

A 'generic' VM training environment is provided for this training. Participants install a VM Player on a laptop/desktop. The VM allows participants to practice configuration in a safe environment which will not affect the production, test or training environments. The intention is to have the participants install the product and perform configuration exercises to gain an understanding of how the product is configured.

Technical training is comprised of traditional classroom style training, practical exercises, and onsite configuration and implementation support.

User Training ~ 2-day "Train-the-Trainer" Course

Orion Health suggests that the California Department of Mental Health nominates a few staff to undertake the "Train-the-Trainer" course. On completion of this course, the participants would be responsible for training the end users of the system. This method is particularly effective where large numbers of users will be using the product.

This training program is customized to meet the needs of each individual client's business needs.

Training may be organized to take place in either Orion's Boston or Santa Monica offices, or alternatively at a client's specified location.

RR-K-04

Please describe if training is classroom style with an instructor, one-on-one, computer-based training, self-study, etc.

Orion Health's training approach is to use presentation software to illustrate and demonstrate application functionality. This is reinforced by user-completed workbooks designed to include all features of the application. Attendees may keep the workbooks as a reminder of course content once training has been completed.

RR-K-05

Who provides the training: employees of your company or sub-contractors?

Employees of the Systems Integration partner in conjunction with Orion Health provide 'train the trainer' style training.

RR-K-06

Do you provide clinician-specific training?

Clinician specific training is provided for key people in the organization whose support for the project is critical to its success. Such people often include super users and senior clinicians. The training approach is to emphasize the benefits of the Concerto™ applications and how they can be used to reduce mistakes and increase productivity and job satisfaction within the

organization.

RR-K-07

Do you provide fiscal-specific training related to billing Short-Doyle Medi-Cal in California?

This training would be provided by a third party that offers behavioral health billing.

Documentation

(Not to exceed 2 pages)

RR-K-07

Describe the documentation (both system and training) provided as part of standard installation approach including:

1. Manager and user reference manuals (applications).

Orion's product documentation includes a User Guide which assists the user in performing everyday tasks within the application. Additionally, our online help (Doki Online Help) may also be utilized and is accessible via the application's Help button to assist the user in doing everyday tasks within the application.

2. User operator/system administrator manuals.

The **Administration Manual** describes the general administration tasks for the product and includes the following sections: Systems Architecture and Network Topology, Post-installation Tasks and Initial Configuration Tasks, Setting up User Groups and Security Policies, Application Configuration - including screenshots. This manual can also include, as appendices: Security Overview, Monitoring and Performance, Troubleshooting and Support.

The Installation Manual describes how to install the product and should include the following sections: Prerequisites, Required Parameters, Installation Instructions, Installing Additional Software, Configuring the Product after Installation, Uninstalling the Product, and Installation Troubleshooting. This manual can also include, as appendices: Advanced Configuration, Additional Configuration Options, Compression Options for End Users, Application Server Installation, Integration Guide and Application Program Interface.

3. Hardware/OS manuals.

Orion does not provide hardware specification requirements but is able to provide informed assessments of requirements.

4. Network and Security.

Orion Health provides documentation pertaining to the configuration of its products in relation to privacy and security to meet international and local requirements and compliance.

5. Training manuals (initial and ongoing user self-training).

Please refer to response in section RR-K-04.

RR-K-08

Is the documentation available:

1. In hardcopy?

Orion Health provides comprehensive documentation for the system. The documentation can be provided in any format i.e. online, paper, CD-ROM etc. This can be deployed by the purchaser to any user site as desired.

2. On CD-ROM?

Yes, please refer to response in RR-K-08 Q.1.

3. On the Local Area Network?

Yes, please refer to response in RR-K-08 Q.1.

4. On the Internet?

Yes, please refer to response in RR-K-08 Q.1.

RR-K-09

How often is your documentation updated? How often are updates made available to the user? How is documentation updated (memo, revised manuals, on-line, CD, etc.)?

Documentation is updated when required, for example when there is a new release to the customer, DOKI documentation is updated interactively based on comments that our customers can insert directly into the online documentation.

L. Contractual Support

(Not to exceed 4 pages)

RR-L-01

Do proposed acquisition and/or ongoing maintenance/support costs include:

1. Future enhancements to acquired/licensed application modules?

Provided that the customer is up to date with their support and maintenance costs, future enhancements are included in the costs.

2. Operating system and related environmental software?

Not applicable.

3. Interface maintenance?

Orion Health provides support and maintenance to all Interfaces utilizing Orion technology. The support we provide is to the client's Interface Analyst when that resource identifies an issue they cannot resolve. Orion Health has a train the trainer approach to ensure the on-going daily maintenance to Interfaces can be handled by the client. It is only when there is an issue that cannot be resolved that Orion Support resources provide assistance.

Interface maintenance caused by third party interface changes will be chargeable on an agreed basis.

4. Architectural changes such as migration to emerging technologies and new methods of systems deployment?

All software upgrades are provided to the customer free of charge as part of the on-going Support and Maintenance program.

Orion Health provides remote support during a software upgrade when required. If a major migration is planned then Orion asks that our support team and possible professional Services group are involved at an early stage. If a migration requires Orion resource to assist in excess of what is provided by the normal support program then requirements are discussed in advance as additional costs would be incurred.

If not, describe the conditions and terms under which enhancements/new releases are made available to existing customers.

RR-L-02

What are your normal support hours (specify time zone)? Where is support staff located?

Orion Health Support Services are available 24/7 via the online tracking system (Support Tracker) and the after hour's phone number. Currently the North America support resources are located in the Santa Monica office, covering support between 8.30am to 5pm PST/PDT. Orion Health is in the process of additional support resources to the Boston office to provide additional coverage for the Eastern Time Zone. We are also planning to add support resources to the Edmonton office and continue to grow the main service delivery team in the Santa Monica office.

Currently, when a production issue is reported through Support Tracker, the appropriate resources are paged; if it is during the Santa Monica office hours the resources based there provide first level support. Outside of Santa Monica office hours the online page and toll free numbers are diverted to the after hour's resource in the Global Service Delivery team. The global functional escalation process provides both the regional resources and the after hours resource access to any other required staff members to appropriately resolve the issue. This normally involves initial contact with the product specialist within the Service Delivery team. If they are unable to assist the issue is escalated to the Global Service Delivery Manager who can engage any development resource for afterhours product support when necessary (this escalation process is in effect both during and outside of normal business hours). Global Service Delivery Staff are located in UK, Spain, and New Zealand giving widest possible time zone coverage.

RR-L-03

Which of the following support features are available? Check all that apply:

1. Toll-free hotline - For Support.
2. Remote monitoring - As part of support troubleshooting. We do not offer a daily monitoring service. However, Rhapsody provides a remote monitoring utility.
3. Remote diagnostics
4. Training tutorials
5. Web-based support tracking
6. 24x7 software support
7. 24x7 hardware support - Not Applicable.

RR-L-04

Provide the response time for problems reported during:

1. Regular business hours.

Target Response and Resolution times

Fault Priority Level	Initial Response Time	Progress Report	Target Resolution Time	Coverage Hours
Level 1	30 mins	1 hour	4 hours	24/7
Level 2	1 hour	4 hours	8 hours	24/7
Level 3	Next Working Day	1 day	2 weeks	24/7
Level 4	Next Working Day	2 weeks	By Arrangement	24/7

Fault Level	Definition
Level 1	<p>Critical business impact – problems which if not fixed prevent the business from continuing. No workaround possible.</p> <p>Examples:</p> <ul style="list-style-type: none"> • A critical application is unavailable. • All users lose access.
Level 2	<p>Problems which do not currently stop the business but whose consequences could interrupt or stop the business within 24 hours; these may go unnoticed by other groups, but can be very serious for the people needing the service that has stopped.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Some users lose access. Severely Degraded performance. • The System is still functioning but slow performance is impacting the efficiency of the unit.

Fault Level	Definition
Level 3	<p>Problems causing minor operational impact or people have lost functionality, but there is a workaround.</p> <p>Example:</p> <ul style="list-style-type: none"> • Cannot action a request on an application at one terminal but can at another.
Level 4	No impact on production and implementation can wait for a future release.

2. Off-hours.

Please refer to above table in previous question.

RR-L-05

Describe your problem reporting software and tools. Are they available via the Internet? Can a list of outstanding problems and enhancements by client be viewed on-line and downloaded?

Orion Health Inc uses Support Tracker, an online support reporting and tracking application. The Support Tracker application can be accessed via the internet provided the user has the proper login credentials. A list of outstanding issues and enhancements can be viewed on-line and downloaded if desired. All updates and correspondences submitted through Support Tracker between the client and Orion Support are viewable at any time.

Once the customer support has been established the customer is provided with the login credentials and an on-line training session covering the use of the support application and an overview of the support and escalation processes.

RR-L-06

Describe your firm's approach to software maintenance agreements. Include how, and at what frequency, your firm provides maintenance and upgrade services in support of your system products.

Major Version releases occur approximately once every 18 months to 2 years. Minor releases occur approximately 2-3 times per year. In general, clients are not obliged to install minor functional releases. Service packs are released as required for all versions.

The update process requires the system's administrator to install the upgrade using a self-extracting package. This comes with easy to follow instructions. If help or support is required Orion Health can apply updates, fixes or enhancements remotely if access is provided.

M. Cost and Licensing

(Not to exceed 3 pages)

RR-M-01

Describe your pricing and/or licensing models based on the various product functionalities listed above. Do not provide specific pricing in your response, but information on how pricing is derived is pertinent. Examples of pricing models may be: module-based pricing, package or suite pricing, single price package, subscription based, package plus maintenance, etc.

The product Licensing Models are either product dependent or solution dependent. Each product provides a different functionality and requires different pricing models. The following lists the products and the pricing Models used:

Rhapsody:

As an interface Engine Rhapsody is priced on the number of Communication Points (Similar to Ports). The greater the number of system interfaces the greater the cost of the license. Orion currently has five categories: 10, 50, 100, enterprise and Unlimited.

Concerto

The Clinical portal application is priced with a base product fee which varies depending on whether the client has a single facility or multiple facilities. In addition to the Base fee each installation requires User licenses. User licenses are sold in packs starting at 50 and increasing to 10,000.

For the regional implementations Orion Health also uses a population pricing metric as the User model becomes more difficult to define when covering a region.

Where Orion Health provides a solution that involves multiple Orion products like Clinical Documentation or Disease Management, each project is priced separately depending on the value and role.

CDR

The Orion Central Data Repository is used as a stand along database to house the data used by the other Orion applications. The pricing model for the CDR application is usually a percentage of the cost of the other concerto products depending on the solution. For example CDR can be priced at 25% of the cost of the Concerto Portal License. The exact percentage is usually determined by the solution being implemented.

- cOrders

cOrders

The cOrders module is priced based on the number users and is similar to Concerto Portal in that customers buy Users packs or can opt for Population pricing.

cWorkflow

This module is priced in the same way as the CDR Module in that customers pay a percentage of the solution price.

cForms

The cForms product can be priced in a number of ways but is usually deployed in a larger solution setting. The product is however a stand alone product and customers can buy Forms in packs similar to User packs.

RR-M-02

List any programs your corporation currently participates in, in which you provide a single pricing and licensing model for a large customer with decentralized purchasing (public or private sector), and functional descriptions of that model. Examples of this type of licensing/procurement program may be the State of California Software License Program (SLP), or the California Strategic Sourcing Initiative.

Orion Health has a good track record and reference base of working with clients to meet their bespoke purchasing requirements and needs. Orion has worked with centralized and decentralized, as well as public and private institutions globally. Depending on the needs of the client Orion has traditionally been very flexible where creative pricing models are concerned.

N. Risks and Issues

(Not to exceed 3 pages)

RR-N-01

It is fully expected that Counties will encounter risks/issues that they must manage and mitigate. Please identify the risks/issues that a County is most likely to encounter when implementing your solution. Please include examples from prior implementations of your solution.

There are some general areas of risk Orion Health has identified when implementing solutions such as the one described within this document. These risks and some proposed mitigations are summarized below.

Technology

Dependency on components or technology supplied by other organizations or required integration with existing systems or functionality will require careful and pro-active management.

Mitigation:

- Early and regular testing / verification
- Ensure the UAT plan includes solution performance tuning as an exercise.

Orion Health has considerable experience in delivering working solutions which satisfy clinical users. We understand the issues faced in solutions such as this, and how to go about resolving them.

Privacy & Security

Risks relating to security can fall into two categories – those relating to technology or a failure of technology, and those relating to business use (or mis-use). Privacy risks are generally related to security – i.e. un-authorized access to information, but there is also a risk to the overall success of the solution if there is a lack of clinician / patient buy-in.

Mitigation:

- Ensuring the technology aspects of security are solid and robust as a key aspect of UAT
- Concerto™ Portal application logs all accesses into Audit logs, which enables easy tracking of security issues relating to technology.
- The audit function is also the main mechanism used to monitor and enforce usage / access protocols set up

Standards

Implementation of standards can differ widely between organizations and applications - possibly leading to a mis-match in data formats and structures. Orion Health is confident that our experience with the implementation of solutions which meet real world implementations of

standards in combination with a business outcomes focused project approach will ensure that standards are met appropriately.

Quality

The perception of quality in a solution such as this is heavily influenced by data quality and completeness.

Mitigation:

- Ensure version / release control is carefully managed.
- A carefully managed configuration plan will cater for interactions with applications outside of Orion Health's solution scope.

Orion Health's strategy in managing risks relating to quality ensures that, when quality issues arise, it is clear what the root cause is, and therefore what the best method of dealing with the issue is.

Deliverables / Milestones

It is vital that solution participants manage the deliverables from their teams so as not to impact the overall project. Any governance processes implemented must be open and transparent, and encourage early disclosure of timetable risk.

As change in a project is natural, the governance processes must also ensure that there is sufficient flexibility in budgets, and an ability to encourage some give and take in the project. This is needed to ensure that Change Requests are raised easily, reviewed speedily, and actioned (or not) quickly and that unforeseen delays caused by resource or information shortages are recognized and dealt with appropriately.

Resources

Key resources may be lost to the project at critical times. Insufficient resources may be available to the project to enable key activities to be completed in the right time frames.

Mitigation:

Ensure solution participants have a back up for all key roles – Project Manager, Project Director, Solution Architect(s) etc. – with understudies who are part of the project team

Change Management

The scope of the project may not be sufficiently clear, agreed, detailed, or conveyed in a way which is understood by all relevant parties. There may be delays in the processing of change requests during the project – delays which delay the project and/or cause friction amongst the parties.

Mitigation:

- Scope management and mutual understanding of scope are vital components of a successful project. In Health IT, with clinicians as the main users of the system, presenting the scope in ways they understand and relate to is a key ingredient of success.

- As noted earlier managing change in a timely fashion is a function of a good governance structure.

Governance

Sometimes there is insufficient opportunity for users of the solution – typically clinicians – to understand, buy into, and support the solution. The timeliness of decision making by the governance teams can sometimes take too long, resulting in an impact on the project timelines.

Mitigation:

- Create a governance structure with several key components:
 - The project management group – who meet regularly (typically weekly) and run all the operational aspects of the project.
 - The Steering committee – typically meeting monthly, and including senior executives from all stakeholders. This group provides a decision making body.
 - The clinical policy committee – who meet at least monthly and who provide expertise in policy decisions – as opposed to technology decisions. Membership must be heavily weighted to represent the clinicians, but also with legal, privacy, and operational skills.

O. Project References

RR-O-01

Provide a minimum of three (3) previous implementations of your solution that most closely approximate a CA County Behavioral Health setting. Include a California reference if available. Provide names and contact information of individuals who have sufficient experience to speak knowledgeably concerning:

1. The implementation process.
2. System functionality.
3. Vendor support.
4. Documentation.
5. Training.
6. Overall customer satisfaction.

Each reference and relevant information is listed below. Please contact Orion Health if you require contact information for any of the contacts / sites listed below. This will allow us to give notice of to our clients.

UCLA:

Dr Michael Swiernik – Director of IS

Archie Galbraith - CIO

Solution delivered is comprised of: Concerto Portal / cResults, Rhapsody. Currently implementing cForms / CDR for a Clinical Documents solution

CPR (California Prisons):

Glen Moy, Director of Health Information Integration

Justin Graham, MD MS, Chief Medical Officer

Solution is comprised of: Concerto Portal, cForms, Oracle HTB, and Initiate EMPI

Shared Health

Adnan Khalil, Chief Information Officer

David Proctor, Director of IT

Solution is comprised of: Concerto Portal, Soprano Disease Management, Oracle HTB, and Initiate EMPI

Lahey:

Dr Peter Dempsey – Head of Neurosurgery – Clinical Lead for implementation

Sue Bostwick-Hawkins – Director of Registration and Scheduling – Business Lead for implementation

Nelson Gagnon – CIO

Solution delivered is comprised of: Concerto Portal / cResults, CDR, cEMPI, Rhapsody

State of Maine:

Dev Culver – Director of HealthInfoNet for the State of Maine – Project Sponsor

Solution delivered is comprised of: Concerto Portal / cResults, Rhapsody. Partnering with 3M who are providing HDD, CDR, EMPI

P. Brochures

Concerto™ for Physicians

Concerto™ for Health IT Professionals

Concerto™ for Health Organizations