

Request for Information (RFI)



Enterprise Healthcare Information Systems Project

Clinical and Financial Applications

February 2011

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I. Overview of Cayman Islands Health Services Authority

HSA is soliciting vendor partners for participation in the *Enterprise Healthcare Information Systems Project* for the public health system of the Cayman Islands. At present, the core enterprise applications are provided by the Cerner Corporation. The contract for those services expires in June 2013. This RFI begins a re-compete process for the award of that contract. The intent is to evaluate other vendors and products, and determine if it is in the best interests of the Cayman Islands to remain in partnership with Cerner. Cerner will be invited to participate in this re-compete.

The Cayman Islands Health Services Authority (HSA) is a quasi-government organization reporting to the Cayman Islands Ministry of Health. The Health Services Authority, through an agreement with the Ministry of Health, is responsible for a broad range of healthcare services including public health programmes under the Public Health Department. Public Health services include health advice and vaccines for international travellers; health assessment, including vision and hearing tests for children; nutrition and dietary counselling; child growth and development monitoring; health promotion; communicable disease screening; and disease prevention and control programmes, including immunization. As a public health system, HSA also operates an outpatient pharmacy, two dental clinics and an eye clinic.

The Mission of the Health Services Authority is “To provide the highest quality healthcare and improve the well-being of people in the Cayman Islands through accessible, sustainable patient-focused services by highly-skilled, empowered and caring staff in collaboration with our partners.”

The Cayman Islands present an opportunity for vendors to participate in a national model of healthcare whose size and culture are agile enough to react and adjust quickly at every level of healthcare management—from legislative policy development to clinical and financial implementation-- in the advancement of a role model healthcare delivery system. The Cayman Islands are on-schedule to develop new, sustainable care delivery and financial models that precede the United States and other countries by 4-5 years, including the development of international medical tourism.

Current State of Affairs:

The Health Services Authority (HSA) is responsible for delivering healthcare to the majority of the Cayman Islands’ population. HSA provides primary and secondary levels of healthcare services, and public health functions for the residents and visitors in the Cayman Islands via the following facilities and services:

The 124-bed Cayman Islands Hospital. As the nation’s principal health care facility, the Cayman Islands Hospital in George Town provides a full range of inpatient and outpatient medical and specialist services. Specialist services are available in the fields of: surgery, gynaecology & obstetrics, paediatrics, internal medicine, dermatology, anaesthesiology, public health, orthopaedics, psychiatry, gastroenterology, radiology, ophthalmology, ear, nose and throat, periodontology, reconstructive surgery, faciomaxillary surgery, urology and pathology.

District Health Centres. Primary healthcare is offered at four district health centres in Grand Cayman and a health centre in Little Cayman.

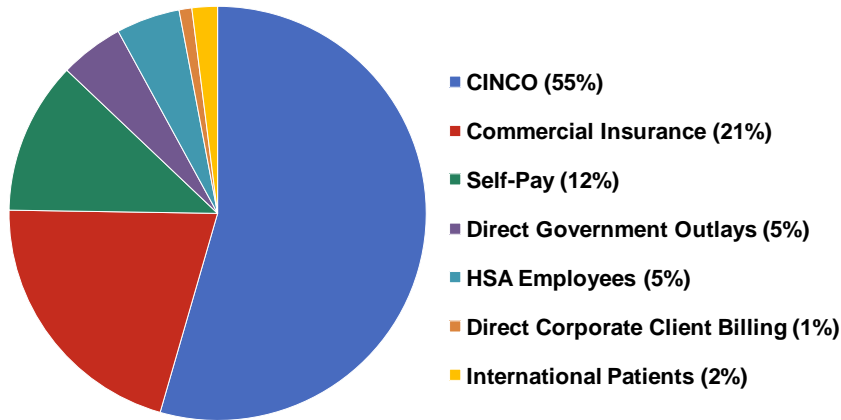
In the Sister Islands, residents and visitors can receive healthcare services via the Faith Hospital in Cayman Brac and the Little Cayman Clinic:

The 18-bed Faith Hospital on Cayman Brac. Faith Hospital serves both islands and provides primary, secondary and emergency care. It features a modern inpatient unit, as well as an operating theatre, maternity, accident and emergency department, outpatient clinics and a public health department.

The Little Cayman Clinic is a purpose-built facility, complete with waiting and triage areas, a treatment room, doctors’ office and a dental office. A resident nurse is on call around-the-clock.

All residents of the Cayman Islands are required to maintain basic health insurance. The Cayman Islands National Insurance Company (CINICO) is a quasi-government organization, accountable to the Ministry of Health. At present, HSA uses a mixture of electronic and paper claims adjudication exchange with CINICO and commercial insurers. The goal is to expand that to 100% standardized, real time adjudication and eligibility verification. That goal is being pursued under a separate procurement, but must be coordinated with this Project. HSA’s generated revenue mix and key metrics are detailed below:

HSA’s Generated Revenue Mix



Key Metrics	
Number of physicians employed by HSA	60
Number of physicians registered in the Cayman Islands	180
Total population of Cayman Islands	55,000
Number of inpatient and outpatient encounters per year, including retail Pharmacy	400,000
HSA operating budget	\$82M

Number of HSA employees	750
Average concurrent Cerner users	220

In addition to the HSA facilities, one small private hospital (Chrissie Tomlinson Memorial Hospital) and numerous private physician practices operate in the Cayman Islands. Referral relationships exist between all the provider organizations. In addition, the Cayman Islands government is currently negotiating with the Narayana Hrudayalaya Private Limited to develop the \$2B Narayana Cayman University Medical Centre, a 2,000-bed hospital and teaching facility to address the medical tourism market in the United States and expand the healthcare delivery and education opportunities for residents of the Cayman Islands.

II. Overview of the Enterprise Healthcare Information System Project

Background and Intent:

As mentioned previously in this document, HSA is soliciting vendor partners for interest in participating in the *Enterprise Healthcare Information Systems Project* for the public health system of the Cayman Islands.

HSA has a risk tolerant culture and is not opposed to participating as an early adopter or development site for a suite of products which will gracefully support clinician efficiency, evidence-based medicine, quality of care, economic sustainability, and lifelong patient engagement in their own care through the seamless and innovative use of technology. HSA desires to work with a product that allows us to practice healthcare of the future, not medicine of the past. Concepts for innovative technology include service oriented architectures (vs. HL7 message oriented architectures); embedded video conferencing for referrals and telemedicine encounters; mobile computing for patients and clinicians; personal health records; use of open source applications; integration with economic partners for real-time claims adjudication and eligibility verification; full e-prescribing and innovative order management; point-of-care supply chain integration for inventory control; cloud computing; and integration with social media. HSA anticipates vendors may be motivated to co-develop their product in the context of the Cayman Islands as a role model and working laboratory for a sustainable national healthcare system.

If a conversion is deemed appropriate, barriers to conversion away from Cerner should not detract from a better long-term solution. Potential vendors are expected to assist HSA to offset the barriers — organizational discomfort and cost — to transition away from the incumbent product, if that transition is in the best interests of HSA.

Project Scope:

The scope of the project includes the core applications described below and the conversion of workflow and data from those applications. The applications listed below are remotely hosted

in the Cerner data center in Kansas City, and accessed via Citrix sessions.

1. Inpatient/Outpatient Electronic Medical Record: Cerner Millennium PowerChart, version 2010
2. Radiology Information System: Cerner RadNet
3. Laboratory Information System: Cerner PathNet
4. Health Information Management System: Cerner ProFile
5. Registration, Scheduling, Billing: Cerner ProFit
6. Inpatient Pharmacy: Cerner PharmNet

The applications below are critical to patient care, but not integrated with Cerner:

1. Outpatient Pharmacy: Encom (legacy, locally developed and hosted)
2. Materials Management: Encom (legacy, locally developed and hosted)

Project Business Objectives and Motives:

The motives for considering a replacement of HSA's HIS/EHR systems are described below:

1. **Total Cost of Ownership:** Currently, the total cost of ownership (TCO) for the various Cerner product lines is more than 85% of the entire IT budget of HSA. This TCO includes:
 - Cerner licensing, remote hosting services and application management services for the ProFit application.
 - Internal HSA staff that support Cerner applications, and an allocation of HSA's core infrastructure required to operate the Cerner system.

HSA's strategic goal is to reduce these expenses by nearly 50% by working with a vendor partner that can provide a next generation HIS/EHR at a reasonable cost. We are open to creative models for license and support fees such as a fixed percentage of HSA top-line revenue.

2. **Usability & Functionality:** HSA desires improved usability & functionality in the following areas:

Data analysis and reporting: Access to key performance indicators to manage chronic disease, quality of care, public health reporting, and cost of care; with reports that meet a broad variety of needs, from the executive level to the patient and provider level.

Physician efficiency: Currently, physicians are largely unhappy with the workflow and user interface, especially outpatient charting options, and those associated with specialty services. Multiple logons to Windows, Cerner, and imaging systems is also inefficient, and the time required to logon to Cerner and load patient records is a distraction to efficiency.

Economics of care at the point of care: HSA's version of the United States' concept for an Accountable Care Organization and Medical Home is known as CayHealth. Under CayHealth, HSA believes that patients and physicians must have the ability to explore

treatment options within the context of overall cost of care, and specifically the patient's out-of-pocket expenses, including real-time electronic claims adjudication at the point of care.

Patient engagement in their own care: This includes the use of personal health records, mobile applications, telemedicine, and social networking to engage patients in their own care, throughout their lives and treating the patient's healthcare as a lifelong project, as contrasted to the current environment which is designed around healthcare that is encounter-based.

Distribution and Response Timeline

Responses to this document must be received by 28 April 2011.

Based on responses to the RFI, a Request for Proposal (RFP) will be issued to a shortlist of vendors, currently planned for 1 June 2011, which will contain more detailed requirements for the product, contractual particulars, and key criteria for successful bidders.

From the replies to the RFP document, a shortlist of possible vendors will be selected who will then be asked to present demonstrations and host site meetings to review their offerings. HSA expects that these meetings and site visits will be completed by 1 Nov 2011.

III. Requirements

Vision of the Future:

HSA is in the early stages of implementing a new care delivery and economic model called “CayHealth” which, at a high level, seeks to maximize the quality of care delivered while assuring an economically sustainable healthcare system for the Cayman Islands. CayHealth is very similar in nature to the emerging Accountable Care Organizations (ACO) in the United States. Vendors involved in this procurement are expected to offer information technology solutions which clearly and naturally support ACO concepts and requirements, as described in the CayHealth maturity roadmap, below. Each level of maturity builds upon the functionality of the preceding level.

Level 1: Clinical Efficiency. Data collection regarding patient encounters is optimized for clinician efficiency and outcomes analysis. Narrative text is facilitated through the use of templates, computerized order sets are directly driven from evidence based medicine, and discrete data collection supports national and international benchmarks for clinical quality at the clinician and organizational level. Clinical productivity is easily measured and reported. All internal orders are electronic. External pharmacy orders are also electronic. A patient-centric web portal disseminates lab and other diagnostic results and clinical reminders. Positive patient identification occurs through card swipes or biometrics and also supports electronic eligibility verification. Claims submission and payment processing, including reimbursement, is completely paperless. Economics of reimbursements remains primarily procedure-based and fee-for-service. Mobile healthcare applications are pervasive for enhancing clinician efficiency, quality and timeliness of care, and patient engagement in their own care. The user interface of the EHR is highly and easily customizable through widgets and gadgets, giving clinicians significant control over configuring the user interface that suits their preferences best.

Level 2: Communication and Economics. The EHR elegantly facilitates closed-loop care-team coordination and communication regarding patient status and pending activity. Reminders for health maintenance are electronically pushed from the EHR to the patient and automatically schedule follow-up appointments and procedures. The referral process is facilitated by that ability to choose, schedule, and communicate with referral physicians electronically. Disease management reports are native to the EHR and push reminders to physicians and patients. Patient management is based upon disease and risk registries that come bundled with the EHR and can be locally customized. Clinical reminders about patients are pushed to the responsible members of the care team, including family members, if desired. Clinical documentation and billing processes are now dominated by capitated, per-patient-per-month reimbursement models. Insurance implications and Total Cost of Care assessments are facilitated by the EHR, enabling point-of-care discussions about projected costs, outcomes and treatment options between patients and physicians. Quality of care reporting is natively supported by the EHR and patients and physicians are financially rewarded by insurance companies and direct contract employers for achieving health-related goals, and the EHR and HIT financial applications are designed to support this economic feedback model. Personal health records are widely used by patients and the care team, including health coaches and case management professionals. Patients’ health maintenance plans are based upon computerized health risk assessments. E-prescribing with local pharmacies is full-duplex allowing for medication reconciliation. Systemic

monitoring and notification of abnormal test results ensures closed-loop communication with the care team and patient.

Level 3: Pervasive Analytics & Health Monitoring. Quality of care dashboards are fully integrated with the EHR which allow clinicians to move seamlessly between population-based monitoring and patient-specific care delivery. Population-based and patient-specific health status reporting from remote monitoring devices, videoconferencing and mobile self-reported outcomes supports the health management of many patients, regardless of location, by relatively few nurses and physicians operating from a “Health Command Center”. The EHR’s analytics engine natively supports reports for proactive profiling and management of high-cost, high-risk, high-utilization patients. The EHR is beginning to accommodate Personalized Medicine. Genetic and familial tendencies are easily recorded and displayed for reference in the EHR.

Level 4: Social Wisdom. Content and analytic feedback is integrated into the care delivery process of the EHR which allows clinicians to answer, “Which of my colleagues has seen patients like mine? How were patients like mine most commonly treated? What were the outcomes of treating patients like mine with this clinical protocol? How did patients like mine rate their care delivery process and outcome?” Patients are engaged in this social wisdom dialogue through their Personal Health Record and mobile applications are used to fully-engage patients in healthy lifestyles. EHR functionality exists to automatically update and notify clinicians to recommended changes in evidence-based protocols based upon the real-time feedback of diagnostic tests, devices, and patients’ self-reported outcomes.

Level 5: Personalized Medicine & Wellness. Personalized Medicine is fully integrated into the EHR so that generic evidence-based order sets and lifetime health maintenance plans are now tailored dynamically towards the genetic and familial tendencies of the patient. Remote monitoring and telemedicine/e-visits constitute at least 50% of the encounter types. EHRs facilitate the data collection and analysis of patient treatment and protocols so that hospital financial systems are capable of actuarial and risk forecasting to enable a growing trend towards self-pay, high deductible health plans, and employer direct contracting for healthcare care coverage, reducing the dependence on third party insurance.

HIS/EHR Component Requirements:

The following existing functions must be supported and/or replicated in the future:

- Billing & Claims (3 interfaces, one to the national insurance company and two private payors)
- Chronic Condition/Disease management
- Dental Clinic EHR (optional)
- ED Charting
- Health Information Management System
- Home health charting

- Inpatient Pharmacy
- Inpatient/Outpatient Electronic Medical Record
- Laboratory Information System
- Materials Management and Supply Chain
- Outpatient Pharmacy
- Personal Health Record and e-Payment System
- Radiology Information System
- Registration & Scheduling
- Specialty based charting

Integration Requirements:

The product must integrate with the following existing systems:

- GE Centricity PACS
- IRL (Reference Lab) in U.S.A.

The product will also require interfaces from various lab analyzers including:

- ABBOTT Architect x2
- ABBOTT Cell Dyne 3200 x2
- BioMerieux Vitek 60
- ABBOTT Axsym
- ABBOTT Cell Dyne 1700
- ATACC 8000

Technical Considerations:

High Availability and Performance: A high-availability system uptime of 99.999% or higher is required. One-hundred percent of system functions must respond in less than 2 seconds of a user-driven input device. System upgrades will not require downtimes.

Thin Client: Thin client, virtual desktop application architecture is required.

Agile Design: Adaptability to new clinical and business processes is critical. All vendor applications will be evaluated for the agility and flexibility of their system architecture, including the details of their application programming interface and data models.

Non-Proprietary: Any dependence on proprietary control languages or other technology in the system design could be used as the grounds for immediate disqualification.

Instructions for Vendors

Responses from vendors must arrive in Cayman Islands Health Services Authority no later than 28 April 2011.

In addition to answering the questions listed below, please enclose copies of your company's financial statements for the previous two years.

Hard copy responses with electronic copy on CD-ROM must be delivered to:

The Secretary
Central Tenders Committee
Ground Floor, Treasury Department
Government Administration Building
Elgin Avenue, George Town, Grand Cayman, KY1-9000
Cayman Islands

Questions about the procurement process can be directed to Mr. Ronnie Dunn, Chairman, Cayman Islands Government Central Tenders Committee, ronnie.dunn@gov.ky.

Questions about the content of this RFI can be addressed to Mr. Dale Sanders, Chief Information Officer and Chairman of the Enterprise Health Information Systems Steering Committee, Cayman Islands Health Services Authority, at dale.sanders@hsa.ky.

Please answer the following questions to the best of your ability and return them to the Cayman Islands Central Tenders Committee by the date specified above. The questions below are organized into four major categories:

- General
- Technical Requirements
- Training and Support
- Total Cost of Ownership

Requested Information	Response
I. General Information	
1. Company name	
2. Company address	
3. Parent company	
4. Describe ownership and/or strategic partnerships with your company	

Requested Information	Response
5. Name and title of the person responsible for the information contained in this RFI	
6. Phone number	
7. E-mail address	
8. Website URL	
9. Company location (corporate office; other offices)	
10. Total number of employees (include breakdown per department, if possible)	
11. Employee turnover rate	
12. Most recent employee satisfaction scores	
13. Senior leadership names and positions	
14. Total revenue:	
This year:	
Last year:	
15. Total profit/loss:	
This year:	
Last year:	
16. Most recent customer satisfaction scores.	
17. When was your company's initial year of operation?	
18. How long have you been providing this type of product?	
19. Do you have an independent audit of your business continuity plan?	

Requested Information	Response
20. What is the total number of installations of the HIS/EHR software?	
21. Number of installation sites with the current version?	
22. Provide contact information for three client references.	
23. Does your organization have any relevant third-party relationships/alliances? If so, please describe.	
24. Is there any outstanding legal action against your company or partnering company(s)? If so, provide details.	
25. Are there any acquisitions or mergers anticipated or pending?	
26. What documentation is provided for the product?	
27. Was your software written and acquired from a third party, or was it written by your organization?	
28. Does your organization have an independent software development process rating such as ISO or SEI? If so, please describe.	
29. Does any of your software use open source software code? Please describe.	
30. Are there earlier versions of your product that are no longer supported?	
II. Technical Information & Specifications	
1. Can your product work effectively in our organisation's described environment?	
2. What server operating system is required and/or supported?	

Requested Information	Response
3. What is the configuration for a high availability server environment?	
4. What are the database system requirements?	
5. What are the desktop computing requirements?	
6. How many objects are in your products' data model?	
7. Are there any third party products or licenses required? If so, please describe.	
8. Do you have a remotely hosted service for the HIS/EHR system? If not, do you have client organizations that use this system at a remote hosting site?	
9. For effective use of your software, does it require a thin-client publisher such as Citrix XenApp?	
10. How does this software work with software and hardware-based security applications?	
11. What browsers (i.e. Internet Explorer, Firefox) are compatible with this product?	
12. Are you aware of any incompatibilities that this product might have with any specific hardware or software? Provide details.	
13. Is there any additional hardware that should be purchased for optimal performance?	
14. Are there any special network requirements (LAN or WAN)?	
15. If remotely hosted, what connectivity speed (Mbps) is needed for ideal operation of this product?	

Requested Information	Response
16. Is the security of your system independently audited? If so, please describe.	
III. Training & Support	
1. Please provide information on your implementation methodology.	
2. Can this product be used with other technologies (smart cards, barcodes, wireless)?	
3. Do you offer formal user training?	
4. What type of courses do you offer and what is their duration?	
5. Do you provide training materials? Describe them. Are training materials available at no cost?	
6. Where is support for your services located?	
7. What are the hours of operation and response times of support services?	
8. What levels of support are available? Define each level.	
9. Can proactive monitoring of the server environment be provided? Describe the monitoring and alerting capabilities.	
10. What level of product support is provided with basic licensing?	
11. Does support include product updates, as well as bug fixes?	
12. How often are major software upgrades available?	
13. How are software and/or database updates transmitted to customers?	

Requested Information	Response
14. How many customers participate in your users group?	
15. Is your user group supported by an on-line community? If so, please provide a link and access.	
16. How many software bugs and patches did you issue last year?	
17. How many outstanding service requests do you have?	
18. What is your recommended ratio of local support Analysts per User to support your product?	
19. What is the minimum recommended educational and/or certification level for the local Analysts to support your product?	
20. What is the typical problem escalation procedure?	
IV. Total Cost of Ownership (TCO)	
1. How much capital budget is required to install and activate a typical solution appropriate for HSA?	
2. What is the average annual operating budget (Total Cost of Ownership) required to support and operate a typical solution appropriate for the HSA? (TCO includes all hardware, software, and labor required to operate the system)	
3. Please explain your licensing model.	
4. What are your consulting rates to help with implementation and upgrades?	
5. What is the typical hourly rate(s) for training?	

Requested Information	Response
6. What do you charge for customization? Is customization performed on a fixed-fee basis or hourly rate?	
7. Provide some typical examples of customization work that you have completed.	