

Hawaii Health Information Corporation

Enhancing Hawaii Hospital Information Content (eHHIC)

Deliverable 1:

Hospital Engagement

TABLE OF CONTENTS

- I. OBJECTIVE.....3
 - a. HOSPITAL RECRUITMENT.....4
 - i. Stakeholder Buy-In.....4
 - ii. Hospital Participation.....4
 - iii. Agreements.....5
 - iv. Communication.....6
- II. CONCLUSION.....7
- III. SIGNATURES.....8

- APPENDIX A: LETTER OF SUPPORT.....9
- APPENDIX B: CEO AGREEMENT (IN-HOUSE LABS).....10
- APPENDIX C: CEO AGREEMENT (OUT SOURCED LABS).....13
- APPENDIX D: HOSPITAL PARTICIPATION.....16
- APPENDIX E: “KICK-OFF” MEETING AGENDA.....17
- APPENDIX F: “KICK-OFF” PRESENTATIONS.....19
 - Presentation 1: Enhancing Hawaii Hospital Information Content....20
 - Presentation 2: Collection and Transmission of Data Assessing and Improving Data Quality.....21
 - Presentation 3: Outcomes of Patients Treated by Hospitalists: A Comparative Effectiveness Study.....22

I. **Objective**

To obtain participation of all 24 non-federal hospitals in the State of Hawaii to transmit data for 32 requested lab tests that will enhance the clinical content of an all-payer, hospital-based, encounter-level database. This was achieved through:

- A. Hospital Recruitment
 - 1. Stakeholder Buy-In
 - a. Letters of Support
 - b. CEO Participation Agreements
 - 2. Hospital Participation
 - 3. Agreements
 - 4. Communication

II. Method

A. Hospital Recruitment

1. Stakeholder Buy-In

HHIC's long-standing relationships within the healthcare community greatly facilitated project participation. However, identification of key stakeholders and ensuring their buy-in were critical to the success of the project. This was accomplished by securing leadership acknowledgement at the CEO level which helped to overcome barriers to participation.

a. Letters of Support

We communicated to hospital CEOs our proposal to supplement our existing discharge database with clinical laboratory data. Each CEO provided HHIC with a *Letter of Support* (see Appendix A for example), stating their commitment to our research project and enthusiasm to learn how the impact of the study would allow for better analysis of and add significant value to our statewide data set.

b. CEO Participation Agreements

HHIC created a basic agreement outlining the details of how HHIC and the facility would work together to implement the laboratory data. The agreement outlined the scope of the project and granted the labs permission (for those facilities that utilized one of the central laboratories) to release the hospitals' data on their behalf. We found that the CEOs' expressed commitment through the Participation Agreement was particularly effective when resource-competing initiatives, such as Meaningful Use, EHR implementation, and internal hospital initiatives threatened the hospitals participation in the study. Examples of the CEO Participation Agreements for hospitals that supplied their own lab data (In-House), and for those facilities that utilized one of the two centralized labs (Outsourced), are shown in Appendix B and C, respectively.

c. Compensation

HHIC allocated funding to cover the initial cost of programming required to provide the data extract. Funding was allocated in the amount of \$5,000 to the hospitals that performed their lab testing "in-house" (see Appendix D).

Funding provided to the laboratories for the initial cost of programming ranged from \$10,000 to \$15,000. Monthly recurring fees from \$800 to \$1,200 were also allocated with the greater amount of funding provided to the laboratory that submitted data for 16 hospitals. Providers were receptive to being reimbursed for their time and efforts to program a successful extract.

2. Hospital Participation

All twenty-four non-federal acute care hospitals in Hawaii were invited to participate. A total of 19 facilities contributed both historical and “live” (current) data to the project. Details outlining the hospitals that were invited, participated and were excluded are shown in Appendix D.

Of the 24 invited hospitals, two hospitals were excluded due to the lack of an electronic interface. Another facility was inappropriately classified as an Outpatient facility by the reporting lab, which made it difficult to extract the data as it was not possible to determine if a patient was admitted. Because of the small volume of annual discharges among these three facilities (approximately 300 discharge records out of a total of 135,000 approximate discharge records per year), their exclusion did not have a significant impact on the study.

Seventeen of the 21 participating hospitals have their observation results processed at one of two in-state laboratories. For these 17 hospitals, laboratory data was provided by the in-state labs.

The remaining four facilities that do not use Hawaii’s two State laboratories performed all of their own laboratory tests “in-house.” For these providers, all lab tests were transmitted to HHIC directly from the hospital. However, as the project progressed, one of these facilities dropped out of the study citing severe resource constraints, while another hospital that performed their own lab tests deferred participation due to facility-specific IRB approval delays.¹

HHIC’s initial strategy included collecting 17 hospital’s laboratory data via the in-state laboratories. However, it was brought to our attention during the “kick-off” meeting that due to the sensitive nature and timing of certain blood gases (pO₂, pCO₂, pH, base excess and bicarbonate) seven hospitals performed and reported their own tests. As a result, additional agreements and data extracts needed to be established with these hospitals to extract and provide their blood gas data for the study.

¹ Data from this facility have been excluded as they were not received by the “final” due date that would allow us to meet project deliverables. Assuming adequate resources, we will add the data to the database at a later time.

3. Agreements

a. Business Associate Agreements

As a result of the on-going 16-year partnership with all participating hospitals, HHIC had Business Associate and Data Use Agreements in place. These agreements did not need to be revised to reflect the additional scope of work included in the study.

Business Associate Agreements between HHIC and the laboratories (Clinical Laboratory of Hawaii (CLH) and Diagnostic Services Laboratory (DLS)) were established to allow for the transmission of data.

b. IRB Approval

Institutional Review Board (IRB) approval was sought and obtained from the University of Hawaii's (UH) Collaborative IRB. A waiver of Informed Consent was submitted and accepted, as patients were not recruited into this study and no contact with patients was anticipated.

As a recognized research institute, UH's Collaborative IRB represents the interests of all the hospitals invited to participate in the study with the exception of two facilities. Facility-specific IRB approval was required by these two facilities (Kaiser Permanente and Kuakini Health System).

4. Communication

a. "Kick-Off" Meeting

HHIC sponsored a "kick-off" meeting at the start of the project to bring together all key players and provide a venue to review project goals, answer questions and establish deadlines. The event was widely attended, even by providers from other islands. Meeting materials including agenda and presentations are shown in Appendix E and F.

b. Work Group Meetings

Monthly work group meetings and conference calls with all participants facilitated and encouraged hospital engagement throughout the process. This strategy provided a setting that allowed participants to work together and troubleshoot various issues. For example, clarification

regarding the assignment of Logical Observation Identifiers Name and Codes (LOINC) in place of local lab test codes was agreed to.

Additionally, work group participants that used the same Electronic Medical Record (EMR) system to store their lab data also shared their programming scripts to assist each other with creating the data extract for the project.

As each hospital provider completed their extract, based on their feedback, HHIC communicated the estimated project hours required to perform the extract to the other facilities. For example, Hawaii Medical Center(HMC) and Hawaii Pacific Health(HPH)², two of the seven facilities that submitted only blood gas data, utilized similar interfaces. It was estimated by HMC that to configure, test and certify the data extraction to HHIC expended approximately 8 hours of total effort. This communication was provided to HPH and allowed for more accurate resource management, which resulted in the completion of the data extract in a timely manner.

II. Conclusion

Securing hospital participation was not without challenges. Hospitals are tasked with many initiatives, some of which include significant financial incentives. Recognizing the strain on hospital IT resources, we clearly defined the study goals, the respective roles/tasks, and the hospital provider resource allocation (estimated hours) to the project. Obtaining leadership buy-in at the beginning of the project was critical to acquiring the data and ultimately the success of the project.

² Hawaii Medical Center and Hawaii Pacific Health are hospital systems that are comprised of two and four acute care facilities, respectively.

III. Signatures

Prepared by: _____

Position Title: _____

Date: _____

Approvals:

Project Manager: _____

Date: _____

Co-Principal Investigator: _____

Date: _____

Appendix A: Letter of Support

Principal Investigator/Program Director (Last, first, middle): Seto, Todd

Castle Medical Center

 **Adventist
Health**

*Exceptional Medicine
by Exceptional People*

Administration
640 Uluohi Street
Kaliua, Hawaii 96734
Tel 808-263-5142
Fax 808-263-5143
www.castlemed.org

March 25, 2010

Todd Seto, M.D., Principal Investigator
Jill Miyamura, Ph.D., Senior Scientist
Hawaii Health Information Corporation
600 Kapiolani Blvd., Suite 406
Honolulu, Hawaii 96813

Dear Drs. Seto and Miyamura:

Hawaii Health Information Corporation (HHIC) has served this state well as a neutral, fair broker of data and neutral convener. For over 15 years, HHIC has served Castle Medical Center as its Business Associate, providing us with timely, reliable hospital discharge and emergency department data, and a multitude of other data products and services in support of improving quality and cost-efficiency. HHIC enabled all covered entities in the state to standardize approaches to HIPAA implementation while achieving significant savings in the process. With a background of trust, productivity, and cost-efficiency and effectiveness built over years, Castle Medical Center looks forward to working with HHIC to supply lab results as part of the ARRA-funded "Enhanced State Data for Analysis and Tracking of Comparative Effectiveness Impact: Improved Clinical Content".

We agree with you that, based on the anticipated success of the 3 year project, it makes sense to continue building the enhanced data set to support quality improvement and promote clinical effectiveness research in Hawaii for the long term.

As required, we will provide a monthly file formatted according to your data specifications. We appreciate and accept your offer to pay for the programming to extract the monthly file from our system. We anticipate the cost of this programming to be a ~~\$5000~~ one-time, up-front cost.

As we have discussed during initial project planning, prior to any transfer of data, you must provide us with the following:

1. IRB approval of the project.
2. A revised Business Associate/Data Use Agreement between Castle Medical Center and HHIC specifying in detail how the data will be used and released.

This is an important project for Hawaii. Castle Medical Center is pleased to contribute to its success.

Mālama ana i kō kakou kaiaulu.
Caring for our community.

Letters of Support

Ka'ana i ke aloha o ke Akua.
Sharing God's love.

Page 103

Appendix B: CEO Agreement (In-House Labs)

Hawaii Health Information Corporation – Participation Agreement “Adding Clinical Data to Statewide Administrative Data”

Project Overview

The interest in comparative effectiveness research (CER) is based on the belief that more informed decisions about the use of healthcare resources could improve the public’s health and reduce the costs of care. Although CER encompasses a broad range of methodological approaches and data sources, the goal of this proposal is to develop the capacity to perform CER by enhancing the breadth and scope of data contained within a statewide, all-payer hospital discharge and emergency department dataset in Hawaii – the state that has the nation’s most racially diverse population, the longest life expectancy, the longest experience with employer-mandated healthcare benefits (over 35 years) and one of the lowest Medicare costs per beneficiary.

The aims of this study are to 1) Supplement administrative hospital discharge data with hospitalization-related laboratory results, an enhancement that has been shown to improve estimates of inpatient mortality and surgical complications, and the measurement of disease severity and clinical performance and 2) Demonstrate the feasibility and usefulness of the enhanced database by performing a comparative effectiveness research study that will examine the outcomes of care (e.g., length of stay, cost, in-hospital death, 30-day readmission to any hospital) for patients treated by hospitalists compared with patients treated by non-hospitalists.

This research project, funded by the Agency of Healthcare Research and Quality (AHRQ), has been approved by the UH Community IRB which supports the hospitals in the state with studies requiring an IRB. All hospitals and medical centers in Hawaii have supported this work. Todd Seto, MD is the Principal Investigator leading the comparative assessment research study.

Agreement

This agreement runs through September 2013, and during this agreement, *HHIC* agrees to:

1. Develop improved risk-adjusted mortality information using enhanced data sets for hospital use only; data will compare results using the existing *HHIC* model with an enhanced model.

2. Develop an agreement with hospitals to support acquisition of clinical data for integration with existing HHIC information.
3. Develop the capacity to link clinical data to existing HHIC information, refining and improving risk adjustment models.
4. Treat all data in accordance with HIPAA regulations and the HITECH Act.

The Hospital agrees to:

1. Participate in a brief online survey of current capabilities in regard to:
 - A. providing demographic information
 - B. laboratory values
2. Work with HHIC to provide information in supplementary files on a periodic basis to HHIC; file format will be developed jointly, with HHIC and hospital input.
3. Attend a kick-off meeting with other hospitals in April 2011 to discuss survey results related to the
 - A. clinical benefits of certain data elements given national research results
 - B. technical capacity to submit data
4. Participate in the Project by providing/augmenting its clinical data in addition to administrative data that is already being sent (the existing Business Agreement between HHIC and the Hospital covers the transmission, intended use and collection of this data).
5. We agree to transmit laboratory data.

By: _____ By: _____
 Title: _____ Title: _____
 Date: _____ Date: _____

**[Hospital]
 Corporation]**

[Hawaii Health Information

Please provide your points of contact for this project:

Privacy Officer Name: _____

Email: _____ Phone: _____

Overall Project POC Name: _____

Email: _____ Phone: _____

For more information contact Peter Sybinsky, CEO at (808) 534-1277 or Jill Miyamura, Ph.D. (Co-Principal Investigator) at (808) 534-1274.

HAWAII HEALTH INFORMATION CORPORATION

Email: info@hhic.org /<http://hhic.org/>

Appendix C: CEO Agreement (Outsourced Labs)

Hawaii Health Information Corporation – Participation Agreement “Adding Clinical Data to Statewide Administrative Data”

Project Overview

The interest in comparative effectiveness research (CER) is based on the belief that more informed decisions about the use of healthcare resources could improve the public’s health and reduce the costs of care. Although CER encompasses a broad range of methodological approaches and data sources, the goal of this proposal is to develop the capacity to perform CER by enhancing the breadth and scope of data contained within a statewide, all-payer hospital discharge and emergency department dataset in Hawaii – the state that has the nation’s most racially diverse population, the longest life expectancy, the longest experience with employer-mandated healthcare benefits (over 35 years) and one of the lowest Medicare costs per beneficiary.

The aims of this study are to 1) Supplement administrative hospital discharge data with hospitalization-related laboratory results, an enhancement that has been shown to improve estimates of inpatient mortality and surgical complications, and the measurement of disease severity and clinical performance and 2) Demonstrate the feasibility and usefulness of the enhanced database by performing a comparative effectiveness research study that will examine the outcomes of care (e.g., length of stay, cost, in-hospital death, 30-day readmission to any hospital) for patients treated by hospitalists compared with patients treated by non-hospitalists.

This research project, funded by the Agency of Healthcare Research and Quality (AHRQ), has been approved by the UH Community IRB which supports the hospitals in the state with studies requiring an IRB. All hospitals and medical centers in Hawaii have supported this work. Todd Seto, MD is the Principal Investigator leading the comparative assessment research study.

Agreement

This agreement runs through September 2013, and during this agreement, *HHIC* agrees to:

- 1 Develop improved risk-adjusted mortality information using enhanced data sets for hospital use only; data will compare results using the existing *HHIC* model with an enhanced model.

2. Develop an agreement with hospitals to support acquisition of clinical data for integration with existing HHIC information.
3. Develop the capacity to link clinical data to existing HHIC information, refining and improving risk adjustment models.
4. Treat all data in accordance with HIPAA regulations and the HITECH Act.
5. Not identify any individuals or hospitals by name. HHIC may give hospitals the ability to identify their own data.

The Hospital agrees to:

1. Participate in a brief online survey of current capabilities in regard to:
 - A. providing demographic information
 - B. laboratory values
2. Attend work group meetings with other hospitals to discuss information related to the
 - A. clinical benefits of certain data elements given national research results
 - B. technical capacity to submit data
3. Participate in the Project by providing/augmenting its clinical data in addition to administrative data that is already being sent (the existing Business Agreement between HHIC and the Hospital covers the transmission, intended use and collection of this data).
4. Clinical Laboratories of Hawaii or Diagnostic Laboratory Services is our lab vendor. We agree to allow our lab vendor to transmit laboratory data to HHIC directly.

By: _____	By: _____
Title: _____	Title: _____
Date: _____	Date: _____

**[Hospital]
Corporation]**

[Hawaii Health Information

Please provide your points of contact for this project:

Privacy Officer Name: _____

Email: _____ Phone: _____

Overall Project POC Name: _____

Email: _____ Phone: _____

For more information contact Peter Sybinsky, CEO at (808) 534-1277 or Jill Miyamura, Ph.D. (Co-Principal Investigator) at (808) 534-1274.

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Email: info@hhic.org /<http://hhic.org/>

Appendix D: Hospital Participation

Facility	Reporting Lab [†]	Invited	Excluded	Participated	Reason for Lack of Participation
Castle	In House	X		X	
Hamakua	CLH	X		X	
HMC – East [◇]	CLH	X		X	
HMC – West [◇]	CLH	X		X	
Hilo	CLH	X		X	
Kahuku	In-House	X	X	N/A	No electronic interface
Kaiser	In-House	X		X	
Kapiolani [◇]	CLH	X		X	
Pali Momi [◇]	CLH	X		X	
Kohala	CLH	X		X	
Ka'u	CLH	X		X	
Kuakini	In-House	X			Delayed participation due to delays in facility-specific IRB approval
Kula	CLH	X		X	
Kauai Veterans	CLH	X		X	
Lanai	In-House	X	X	N/A	No electronic interface
Maui Memorial [◇]	CLH	X		X	
Molokai	DLS	X		X	
North Hawaii	CLH	X		X	
Kona	CLH	X		X	
Mahelona	CLH	X	X	N/A	Excluded from study due to classification as an Outpatient facility by reporting lab
Straub [◇]	CLH	X		X	
Queen's	DLS	X		X	
Wahiawa	In-House	X			Dropped out from study due to resource constraints
Wilcox [◇]	CLH	X		X	

[†] Unless otherwise noted above, hospital laboratory data were submitted by one of the two main laboratories in the State of Hawaii – Clinical Laboratories of Hawaii (CLH) or Diagnostic Laboratory Services (DLS).

[◇] Facilities performed and reported their own Blood Gas tests.

Appendix E: “Kick-Off” Meeting Agenda

HHIC/AHRQ Kick-Off Event

Enhancing Hawaii Hospital Information Content

Adding Clinical Lab Data to HHIC’s Statewide Administrative Database

Thursday, June 2nd, 2011, 7:30 a.m. – 10:00 a.m.

The Agency for Healthcare Research and Quality (AHRQ) has awarded the grant “Enhancing Hawaii Hospital Information Content” to Queen’s Medical Center and Hawaii Health Information Corporation. The grant funds enhancement of the content of a statewide, all-payer hospital discharge database by adding laboratory results, and improvement of methods to track patients across hospital visits throughout the state.

This enhanced data set will be used to evaluate the outcomes of care for patients treated by hospitalists -- physicians who specialize in inpatient medicine and who manage the care of hospitalized patients for primary care physicians – compared with patients treated by non-hospitalists. More information may be found at <http://www.hcup-us.ahrq.gov/datainnovations.jsp>

The main benefit for hospitals participating in the project will be enhanced comparative reporting for quality performance analyses. It will also help improve estimates of inpatient mortality and surgical complications, and the measurement of disease severity and clinical performance. HHIC will receive data from laboratories” and hospitals” clinical lab systems.

Purpose:

To provide facilities with detailed information needed for participation in the AHRQ Clinical Lab Data Project.

Objectives:

- 1) Provide an overview of the project
- 2) Provide details about requirements and expectations for the project

Target Audience:

Hospital leaders, IT and laboratory staff, privacy officers, and quality assurance professionals.

Cost: Invited attendees (or their designated representatives) can

attend at no charge. This is only available to those registrations received in our offices by May 27th. All other attendees will be charged \$25.

Onsite registration is \$35. Fees include admittance, materials and a continental breakfast. Registration fees are nonrefundable.

Agenda:

07:30 a.m. Doors open for coffee and registration

8:00 a.m. Welcome and Introductions

8:15 a.m. Project Objectives, Requirements, and Potential Benefits to Participants

8:30 a.m. Selection of Clinical Data Elements Including HL7 Format, LOINC® / Logical Observation Identifiers Names and Codes

9:00 a.m. Collection and Transmission of Data, Assessing and Improving Data Quality

9:15 a.m. Data Collection, Reporting, and Comparative Effectiveness Research

9:30 a.m. Questions, Comments, and Recommendations

10:00 a.m. Adjournment of Session

Location: Queens' Medical Center, King Kamehameha Room

1301 Punchbowl Street, Honolulu, Hawaii. See attached map.

REGISTRATION FORM

HHIC AHRQ Kick-Off Event

June 2nd, 2011, 730 AM to 10 AM

Name _____

Title _____

Facility Name _____

Address _____

City _____ State _____ Zip _____

Phone (_____) _____

Email _____@_____

Please note any questions you would like the speakers to address:

Please visit this quick link for our easy online payment option (<http://hhic.org/payinvoicesonline.asp>) or send payment via check made payable to Hawaii Health Information Corporation by 05/27/2011.

Appendix F: “Kick Off” Presentations

Presentation 1: Enhancing Hawaii Hospital Information Content – Jill Miyamura, PhD

Presentation 2: Collection and Transmission of Data – Christine Reuschel
Assessing and Improving Data Quality

Presentation 3: Outcomes of Patients Treated by Hospitalists: A Comparative
Effectiveness Study – Todd Seto, M.D., MPH

Presentation 1: Enhancing Hawaii Hospital Information Content – Jill Miyamura, PhD

**Presentation 2: Collection and Transmission of Data – Christine Reuschel
Assessing and Improving Data Quality**

Presentation 3: Outcomes of Patients Treated by Hospitalists: A Comparative Effectiveness Study – Todd Seto, M.D., MPH