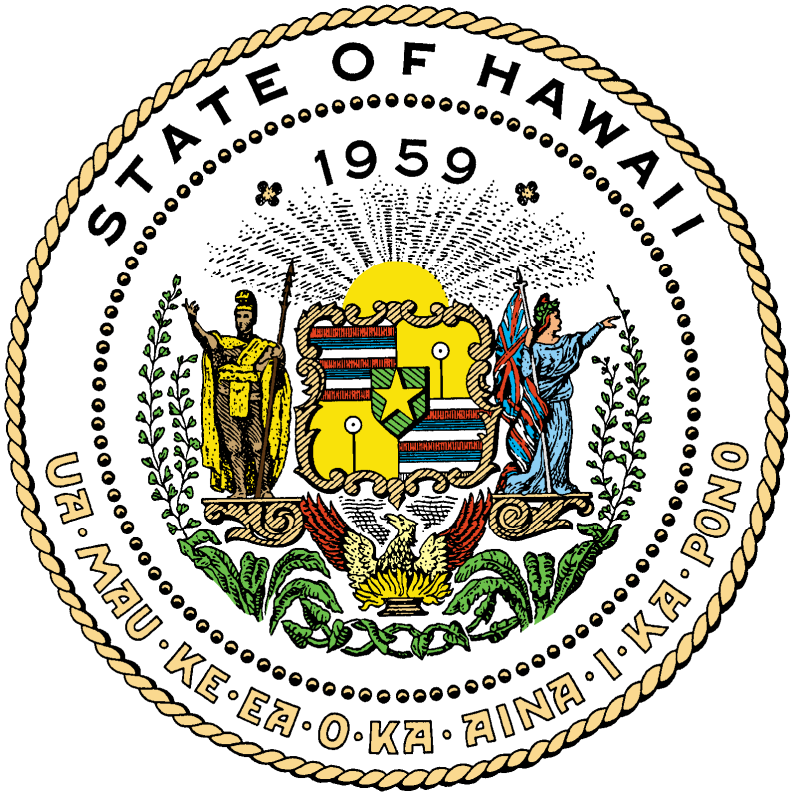

State of Hawaii

Department of Health

Hawaii Electronic Death Registration Systems

Digital Government: Government to Government

Highlights:

- *Hawaii EDRS was launched on January 1, 2006.*
- *It follows national guidelines provided by NAPHSIS.*
- *It is role based, simple, accurate, and efficient.*
- *It monitors and prepares for pandemic outbreaks in Hawaii.*
- *It saves millions of dollars for the federal government by shortening the reporting process.*

B. Executive Summary

Hawaii Electronic Death Registration Systems (EDRS) is a complete end-to-end web based death reporting system found at https://edrs.ehawaii.gov. The Hawaii Department of Health (DOH), Office of Health Status Monitoring (OHSM) followed the National Association for Public Health Statistics and Information Systems (NAPHSIS) guideline, by working with Hawaii Information Consortium, LLC, (HIC), created and launched EDRS on January 1, 2006.

The EDRS application flow matches closely with the existing death reporting process flow by replicating all of the roles involved in the death reporting process, which includes Funeral homes (FH), Mortuaries, Medical Certifier (MC)/Physician, Medical Examiner (ME)/Coroner, Coroner's Physician, and DOH administrators. EDRS utilizes role based permissions to limit each user's permission and functional level. Also by incorporating case notifications, users are notified by email when a case is assigned or there is a change of ownership in the work flow. Due to the fact that it is a web based application, users from all over the State of Hawaii can access the same case from different locations. They can then complete their portion of the case simultaneously which allows for faster time to complete a death case, and ultimately being able to report a death to the SSA earlier than when utilizing a paper based system.

Hawaii EDR not only enables timely reporting of accurate information of deceased individuals to SSA thru SSA's Online Verification Systems (OVS), it also provides a direct link to the City and County of Honolulu, Medical Examiners' (ME) office. The ME is able to create, update, and certify a case within their internal medical information system titled Quincy. With a simple click of a button all medical information contained in the case is transmitted to EDRS via a secure web service in real-time. It saves the ME from having to do duplicate data entry into two separate systems, as well as avoiding unnecessary human errors.

In addition, Hawaii EDRS assists in monitoring and preparing for pandemic outbreaks within the State of Hawaii by automatically generating and sending a weekly mortality report for the total number of death reported for the past week, including counts of Pneumonia and/or Influenza caused deaths. The report is send to both the OHSM staff and Disease Outbreak Control Division of DOH.

Hawaii EDRS provides an end-to-end solution for the death reporting process, which connects the City and County, State and Federal agencies in a single application. Its efficiency and accuracy helps the SSA to save millions each year, and protects lives within the State of Hawaii.

C. Description of the business problem and solution, including the length of time in operation

In 2002, the Social Security Administration (SSA) started the eVital (Electronic Death Registration) project, which was an initiative to replace the cumbersome and labor-intensive process under which the SSA receives death information. The goal was to streamline the electronic death reporting to enable timely receipt of accurate information of deceased individuals and to prevent the payment of benefits to deceased beneficiaries. The SSA worked with the National Association for Public Health Statistics and Information Systems (NAPHSIS) and National Center for Health Statistics (NCHS) and created a guideline which is available for all states to follow to create their own Electronic Death Registration Systems (EDRS) to report death information to SSA.

Hawaii was one of the first few states to respond to this initiative. Hawaii Department of Health (DOH), Office of Health Status Monitoring (OHSM) contacted Hawaii Information Consortium, LLC (HIC) to partner with DOH and started the EDRS project in late 2004. During the discovery and design phase, three additional requirements surfaced. After speaking with the Honolulu City and County Medical Examiner's (ME) office, an additional customization was requested by the ME's office to connect their internal medical system, Quincy, to EDRS to allow bi-lateral communication between the two systems to share death case information.

The second requirement was that there are over 1,000 physicians in Hawaii who certify death cases, many of whom only certify one case annually. The initial group of users to be targeted was medical certifiers who certify more than 10 cases per year. Due to this fact, EDRS is required to allow a case to be 'Dropped to Paper', meaning that after a case is created in EDRS electronically by the funeral home, it could to be dropped out of the electronic system and generate a death worksheet to be filled by medical certifiers who might not be participating in the program. DOH staff must then manually enter the data into the system after the medical certifier has completed the sheet, and certify the case on the behalf of the medical certifier.

The last requirement was to be able to directly pass completed death cases from EDRS to the existing DOH Vital Statistic System (VSS). Prior to EDRS, all of the vital records were entered manually and stored in VSS, therefore EDRS was required to interface with and send case data to VSS.

Slightly over a year after the initial concept, EDRS was completed and launched on January 1, 2006. It fulfilled all three additional requirements above, and it matched closely to the existing paper based reporting process. It also included enhanced electronic features such as automatic notification, online social security number verification, and non-sequential, multipoint entry that allow users to work on different parts of the case simultaneously.

Recap:

- *SSA wanted timely receipt of accurate information of deceased individuals and to prevent the payment of benefits to deceased beneficiaries.*
- *Hawaii EDRS was to be created to integrate with VSS and Quincy and the ability to drop the case to paper.*
- *Hawaii EDRS met all the requirements and was launched on January 1, 2006.*

D. Significance to the improvement of the operation of government

EDRS enhances **speed, accuracy, and efficiency** of the death reporting process between the City and County, State and Federal agencies. EDRS is a complete web based system and offers **24x7 access**. Any user can log in to the system at any time and access the case information. This is especially useful during the weekends when DOH staff is not working, as funeral home (FH) directors and medical certifiers (MC) can still access the system and complete their cases. Prior to EDRS with the paper-based system, fax and telephones were the main method of communication between different parties involved on a death case. When a case needs to be referred or assigned to a MC, the FH will need to call the MC first to let them know that he/she is referring the case. At the same time, he/she will fax the death worksheet to the MC in order to provide the personal information. Many times the worksheet can be handwritten, thus it becomes illegible through a fax. EDRS solved that problem with **instant notification**. The MC is notified via email when a case is assigned to him/her, along with the case number and name of the decedent. The MC may then log in to the system and see the cases that are assigned to him/her. All personal information is viewable as read-only to the MC, and then he/she can complete the medical information section portion of the case. When a case is completed and signed by the funeral home director and certified by the MC, the case is **automatically sent to DOH** for review. Upon successful review, the case is **sent to VSS directly without any manual data entry**.

When a funeral home director completes the personal information section of a case with the name, birth date, sex and social security number (SSN), the user is prompted to verify the information with the Social Security Administration (SSA) Online Verification of SSN (OVS) service. Through OVS, a decedent's SSN reported through death registration is transmitted to the SSA to be electronically verified. Funeral directors receive **real-time response about the accuracy of the SSN as compared with the name, sex, and date of birth reported on the death record**. This helps the SSA to match the decedent's information with records on file, thus **less time will be spent determining the decedent's identity, resulting in the benefit payments ending sooner**.

As a result of the direct integration between EDRS and the Quincy system, medical examiners (ME) can complete the medical information for the case completely inside the Quincy system, **without having to do double data entry into two different systems**. With a simple click of a sent button, the information is transmitted through **a secure**

connection to EDRS. Whether this is an update to an existing case or creating a new case, EDRS automatically determines so by the exchanged reference identification. This integration takes the ME **less than half of the time to complete the case** than if they were still required to update the two different systems.

EDRS helps in **preventing multiple cases of the same information being created**. When a case is created, it starts the process by searching for any similar case with provided death information. If there is a match, the user can just continue with the existing case instead of creating a new one.

Another improvement is DOH staff **no longer need to generate the fact of death file manually**, which is a text based file used to send to the SSA for death reporting. EDRS now has the ability to **generate the file on demand with the desired range of criterion. This also helps to expedite the process of reporting death to the SSA**.

Recent enhancements also include the ability to **automatically identify** death cases caused by Pneumonia and/or Influenza and to generate a weekly death report with this information, which was a manual process until now. When a certifier enters the cause of death, if it contains words and/or phrases that match the predefined key words list, then the case is **automatically flagged** to be Pneumonia and/or Influenza related. DOH staff can manually flag the cases as well when they are reviewing the case. Every Monday morning, the weekly death report is generated on the past week's data and emailed to the designated recipients. The report includes the total number of deaths that have occurred within the past week and are broken down by age groups. It also contains the number of deaths caused by Pneumonia and/or Influenza in its corresponding age group. The information provided by this report **is highly crucial** in helping the State of Hawaii in **monitoring and preparing for possible flu pandemics**. The report can also be run at anytime to retrieve data between any given time period.

Recap:

- *Hawaii EDRS provides 24X7 access to the system.*
- *It allows death cases to be completed 100% electronically.*
- *It is a secure system with restricted access by limiting permission depending on the user's role.*
- *Decedent's name, date of birth, sex and SSN are verified in real-time by utilizing SSA's OVS, lessening the time spent on identifying the decedent's identity equals quicker time to stop payment.*
- *Integration with Quincy saves ME's from entering the data twice.*
- *Hawaii EDRS automatically reports the number of death cases related to the Pneumonia and/or Influenza, helping in monitoring and preparing for flu pandemics in the State of Hawaii.*

E. Benefits of the Project – In this section please address the financial and non-financial reasons why this project was worthy of the investment made.

Since the launch of EDRS, **100%** of all death cases have been created and completed electronically in EDRS. On average, a death case is reported and completed in EDRS in **three days after the date of death** in 2008, improved from three and a half days in 2007. Prior to EDRS, the average number was six days. This result in **a savings of three days, cutting in half** in the time it takes to complete a case.

DOH staff also reported an **improvement in the quality** of the completed cases in EDRS. From the beginning, two separate divisions were assigned to review and approve each of the completed cases before they were sent to VSS. Since June 1, 2007, **only one team** has been required to review and approve the completed cases. The new process alone **saved almost a full day** from the prior average duration to complete a case in EDRS.

This means the SSA can **stop making social security payments** for the decedent **three days earlier as well**. By our estimates, that is a saving close to **$1,000,000** for Hawaii alone (see calculations below).

Another saving comes from the direct integration between EDRS and Quincy. ME's are no longer required to log in to two separate applications in order to complete a single case. The amount of time it takes for the ME to complete the same case is **decreased by half and fewer errors** are made as well.

The achievement of having 100% of all death cases created and stored in EDRS is phenomenal. All funeral homes and mortuaries on all islands are participating in the online EDRS program which greatly exceeded DOH's expectations. Initially, due to geographical and internet connection issues, some of the FH's were not able to participate in the online program or were hesitant during the initial signup. After a series of demonstrations and training sessions, EDRS proved its simplicity and efficiency, and was able to convince all those who were originally hesitant to use the system. Users from all FH's **reported pleasing results** as a result of using EDRS. Currently new enhancements are being added to allow funeral home directors to order death certificates within EDRS.

EDRS is continuously being enhanced to provide an easier and enhanced user experience while simultaneously **improving data quality and availability to ensure the safety and quality of lives** within the State of Hawaii. The value of the system has far exceeded its original cost. It was recognized as a winner of the 2007 Digital Government Achievement Award, Government to Government category.

The initial cost of the project was $197,647.00 and is currently finishing its Phase II enhancements. From the beginning, 100% of all funeral homes, mortuaries, and Coroner/ME's have participated in the EDRS program, while only 15% of all medical certifiers and physicians were on board. It is a continuous effort lead by DOH to

encourage all medical certifiers and physicians to use EDRS. As of April 1, 2008, **77% of all medical certifiers/physicians who certified 50 or more cases are using the system** to complete the medical information section of the case.

By our calculation, Hawaii EDRS saves the SSA on an average of **$986,301.37**dollars a year. This is well above the cost of EDRS, resulting in a ROI of 400%.

Number of days saved on average by using EDRS per death:	3 days
Number of days per year:	365 days
Number of death per year:	10,000
Average payment of social benefit per year per person:	$12,000
Average savings per year (3/ 365 x 12000 x 10000):	**$986,301.37**
ROI (($986,301.37 - $197,647) / $197,647):	**400%**

Recap:

- *Hawaii EDRS improved death reporting from six days after the date of death to three days, 50% less.*
- *Hawaii EDRS improves data quality and lessens the time spent on reviewing each case.*
- *77% of all medical certifiers who certify more than 50 cases per year are using EDRS.*
- *The reduction in the number of days it takes to report a death directly resulted in savings for the SSA.*
- *User satisfaction plus 400% ROI is a great investment for the State of Hawaii.*