

Experience & History

Troy Young is a 1992 graduate of the National Institute of Technology (Cross Lanes, West Virginia), and holds an Associate of Arts Degree in Electronic Engineering Technology. Mr. Young's primary focus since 2001 has been in Healthcare Information Technology through the installation and support of Practice Management and Electronic Health Records solutions for physicians. In the past few years Mr. Young has served as an advisor to consulting firm Alvarez and Marsal for multiple healthcare investments and acquisitions totaling more than \$150 Million. Mr. Young has extensive training and experience in Internet connectivity and standards, network security, database management and design, communications, Electronic Data Interchange (EDI) and the design, installation, and support of network infrastructures. During the past 20 years Mr. Young has worked in information technology, he has held certifications from Microsoft, Disaster Recovery International, SME ITIL, CompTIA, Compaq, Hewlett Packard, and Citrix Systems, in addition to holding Security Clearance with the United States Department of Defense.

Certifications and Accreditations

- Microsoft Certified Professional, 1995
- Microsoft Certified Systems Engineer (MCSE), 1997
- Citrix Systems Administrator, 1998
- Compaq Server Management, 1999
- Disaster Recovery International Associate Business Continuity Professional (ABCP), 2011
- United States Department of Defense Security Clearance, 2012
- CompTIA Security+ (SY-301) 2012
- Information Technology Infrastructure Library (ITIL) 3.0 Foundations, 2012

The C8 Health Project

Troy Young's team utilized a commercial Practice Management and Electronic Health Records (EHR) solution along with a commercial mid-range accounting solution and custom developed middle-ware along with custom reporting to collect and manage the C8 Health Project data. Mr. Young's team centrally hosted the hardware and software while designing a high-speed network that allowed real-time processing of all data which ensured the security and monitoring of activities such as issuing checks to participants. This solution allowed for the collection and organization of tens of millions of rows of data while providing high availability with multiple redundancies with regards to hardware and software. During the time period for this project hardware and software redundancy was much more difficult to accomplish, yet with two brief outages beyond their control, uptime for the entire C8 Health Project was still over 99.999% for production hours and even greater considering the total time systems were online and accessible. This ultimately provided a secure and accurate dataset to scientists and researchers on a large scale.

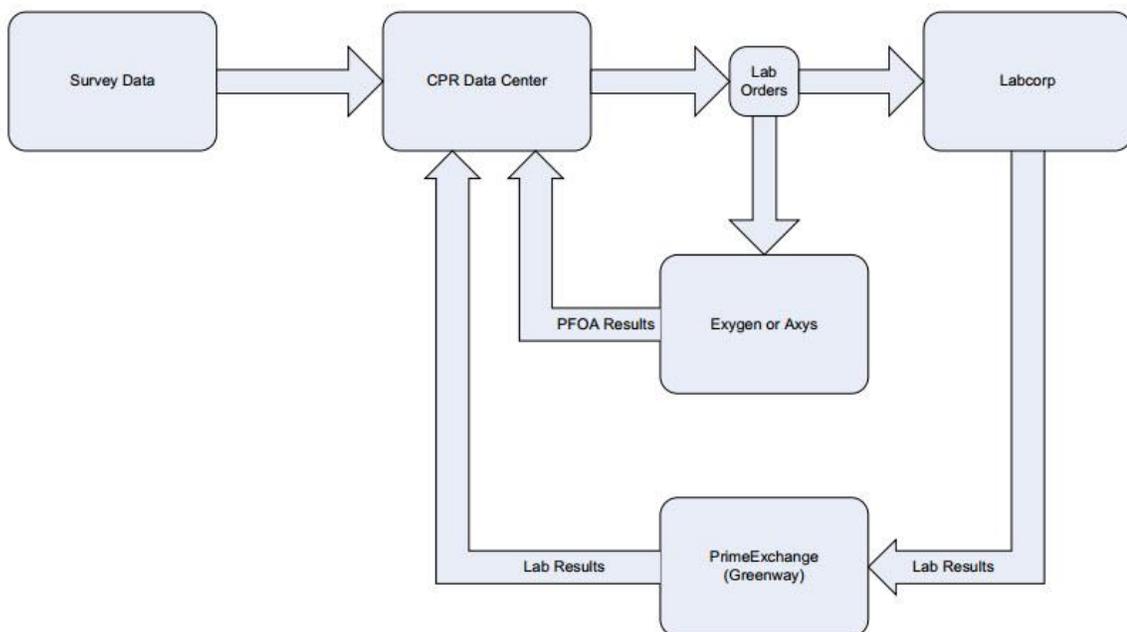
Performance

The following is an excerpt from the C8 Health Project Chronicle written by West Virginia University regarding Mr. Young's role in the project:

"...a rock solid information technology support group was an important component for the success of the Health Project. Mr. Troy Young proved to be invaluable. He and his companies were able to design and manage all types of computer based support. Chief among these were the on-line survey, and the storage of all data associated with the survey, consent forms, data on the results of the blood tests, medical records data, and mailings, just to name the most obvious. As evidenced by printed e-mails of all Brookmar communications, Mr. Young was constantly on-call and capable of fixing problems as they arose. In retrospect, an information technology consultant/manager less available and less capable than Troy Young could have proven a significant, costly hurdle for the Health Project, and delayed the project significantly."

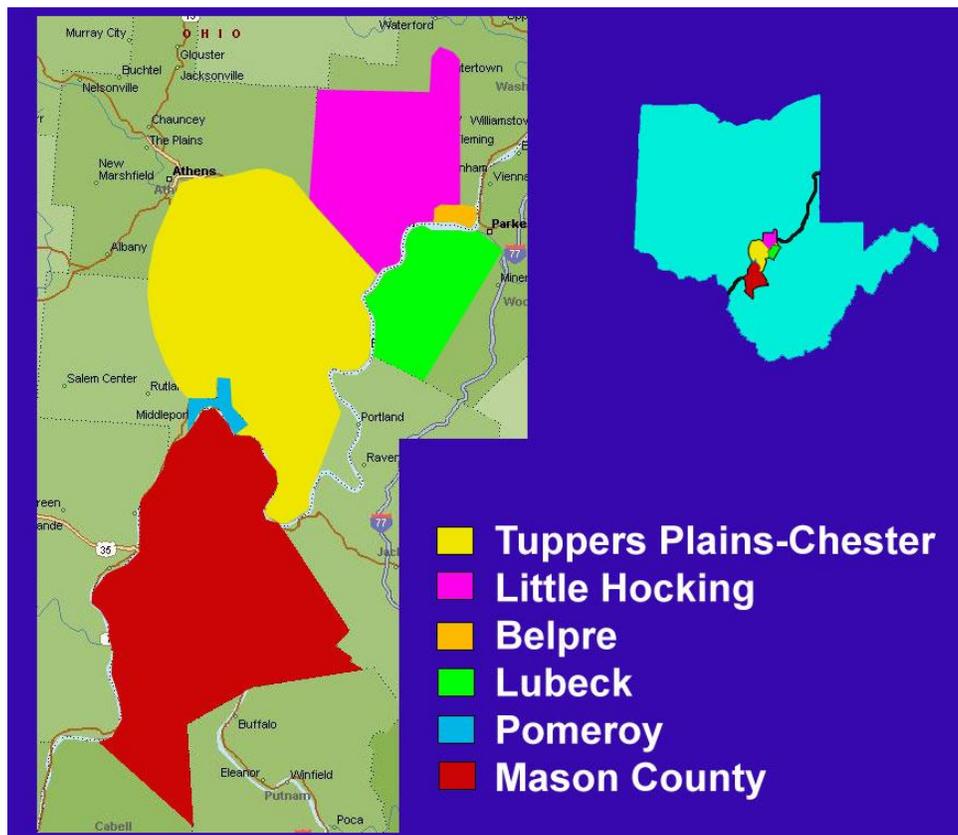
As a partner and Executive Vice President with CPR Solutions Group, Mr. Young led the technical design, workflow, security, and every other aspect of technology related efforts and also consulted with Brookmar to resolve the varied logistical issues The C8 Health Project faced. Mr. Young led his technical team to collect, store and manage the survey data, blood test results from three labs (Labcorp, Exygen and Axys), and scanned documentation from more than 69,000 participants during a testing period that lasted a little over 11 months. At its peak, the C8 Health Project successfully and accurately processed more than 400 participants each day.

Because of Mr. Young's innovative workflow, security procedures and system of checks and balances, elements of human error were greatly reduced or in most cases eliminated entirely to ensure the project's success.



Proper Planning

Mr. Young's service to the C8 Health Project community went far beyond his technology skills and experience. Because of his wide and varied experience in business operations, project management and technology, he was able to expedite key services. These included, but were not limited to public web site development, creation and mailing of vital information to participants, and assistance with presentation materials for town hall meetings to educate the affected community. He also initiated several up-front tasks that proved to be key to the success of the project. His ability to help source and vet vendors as well as manage those vendor relationships was invaluable. One of the key areas for which Mr. Young provided support were the planning stages for architecting the network infrastructure and planning the locations of the testing facilities. Using U.S. Census data combined with residential data and information from the affected water districts, he successfully mapped the population in the affected geographic areas and used those results to predict where the testing facilities should be located. Average persons per household varied from 2.39 to 2.65 across the affected areas and approximately two-thirds of the potential participants resided in the combined areas of Little Hocking, Belpre and Lubeck while approximately one-third resided in the Pomeroy, Tupper Plains and Mason County areas. Mr. Young's recommendations were to place two testing facilities at the each of the Belpre and Lubeck locations and one testing facility at each of the Pomeroy and Point Pleasant locations (six total facilities). After testing was completed, his estimates proved to be within 1% accuracy of actual participants tested at each facility—67% were tested at the Belpre/Lubeck locations and 33% were tested at the Pomeroy/Point Pleasant locations.



Challenges

The obstacles the C8 Health Project team were faced with were wide and varied, including but not limited to:

1. Collection of survey data on up to 80,000 potential participants accurately and securely and receive that completed survey data electronically to initiate the participant ID and basic records. Mr. Young strongly felt that beginning and keeping as much of the data in electronic format was key to the accuracy of the C8 Health Project data.
2. Set up and train call center personnel to schedule participants for an appointment at one of six testing service centers.
3. Check the participant in at the facility, take their picture and validate eligibility based on paperwork that was provided by the participant such as utility bills, school records, or other verifiable documentation and assign the participant with a bar-coded name tag.
4. Provide a software mechanism to allow a Registered Nurse to review the survey data with the participants in person to ensure accuracy of the information and make any necessary edits or corrections.
5. Provide a software mechanism for the lab technician to scan the bar-coded name tag and retrieve the correct participant record for collection of blood and also initiate a system of checks and balances to insert traceable but random QA samples and initiate an electronically controlled chain of custody (CoC) form. Meanwhile, all samples sent to Lapcorp, Eygen and Axys were identified only by I.D. number (barcoded) and Date of Birth to maintain anonymity of the participants.
6. At checkout the participant was issued a secure check for payment for taking part in the C8 Health Project. The participant received \$150 for the survey data and an additional \$250 if they provided a blood sample. The issue of checks was secure and tightly controlled to ensure participants could only be paid the correct amount. Implementation of PositivePay in conjunction with United Bank to ensure forged checks could not be cashed was vital to reduce fraud potential. To our knowledge, there was no fraud perpetrated during the C8 Health Project.
7. Daily transmission of Chain of Custody data to testing labs for sample tracking.
8. Accept lab results electronically from LabCorp, Exygen and Axys labs and accurately match those records to the correct participant records.
9. Print and mail the completed results to the participants.
10. Provide management reports to track various processes and procedures and ensure protocols were being followed including QA sample data comparing the data between Exygen PFOA results and Axys PFOA QA samples.
11. Provide regular downloads via a secure method to the West Virginia University School of Medicine as well as the C8 Science Panel for studies.
12. Brookmar personnel were to validate thousands of medical records with physicians to ensure the accuracy of the data regarding medical conditions self-reported by the participants. As an added benefit of the project, several people's lives were saved because their results from LabCorp triggered serious conditions they were unaware of that required immediate care.

Checks and Balances

Multiple workflow procedures and algorithms were developed as part of the software development to accommodate workflow and security procedures. Examples of some of these procedures are described below.

Participant Tracking

Mr. Young's insistence to accept the survey data on a website was doubted by many, but in the end proved valuable and a tremendous contribution to the success of the project. The vast majority of participants completed their initial questionnaire online and this data was transferred daily into the systems that had been designed for use by Brookmar. Multiple tests were performed on the data prior to importing the participant surveys. The data was scrubbed for various data elements such as exact matches of the combination of First Initial, Last Name, and Date of Birth among others to safeguard against duplicate and potential fraudulent entries.

Fraud Prevention

Procedures such as tracking mechanisms were created that had to be followed prior to allowing a Brookmar employee to issue a check to a participant. If the time and date stamps were not in chronological order along with a scheduled appointment, valid check-in, nurse survey review and/or lab completed indicators being set properly, the receptionist was unable to issue a participant check. By taking such measures, many employees would have had to conspire with a participant to commit fraud and obtain a check illegally by not following the system. In one case a person used a shortened version of his first name and this prevented him from passing through the system twice, eliminating that particular instance of attempted fraud.

Quality Assurance

Daily Quality Assurance (QA) blood serum samples were randomly inserted into the shipments to Exygen for PFOA testing. These three samples consisted of one serum sample with no C8, one serum sample with a known spiked level of C8 and one sample consisting of a duplicate draw from an actual participant. Software algorithms were custom developed to ensure the lab technicians were prompted to insert the samples at a different interval each day and Exygen had no way of knowing where these samples were located. Results of these QA samples were used to verify and maintain testing and data integrity.

Chain of Custody

In order to ensure a proper chain of custody was created for the samples each day, algorithms were developed to ensure a proper alignment of all procedures had been followed for that day which included the aforementioned scheduled visit, check-ins, proper flag indicators of procedures, check-outs, etc., before a Chain of Custody (CoC) could be generated and printed. The proper algorithm ensured when samples were sent to labs, the CoC would always match the exact samples contained in the shipment. An electronic copy of the sample I.D. numbers were transmitted to the labs the evening after testing facilities closed and the receiving labs matched that electronic copy with the printed CoC and the barcoded I.D. numbers on the samples. When results were returned from Labcorp, Exygen and Axy results were matched with participant records and also checked against the possibility of any duplicate I.D. numbers and other possible errors to ensure data integrity and accuracy.

Final Data Presentation

De-identified data was provided to the West Virginia University School of Medicine in addition to the C8 Science Panel for studies. The final and complete data was presented to the C8 Health Project Administrator and subsequently to the Court in common formats to ensure compatibility for years to come should any of the people involved with handling the data during the C8 Health Project become unavailable.

On October 4, 2011 Dr. Alan Ducatman with the West Virginia University School of Medicine paid Mr. Young credit in an unsolicited email stating:

"If you want to see what WVU have done with the data, look me up in National Library of Medicine. You contributed to something that has made a difference. Alan"

References:

The State Journal (July 2006) http://www.troyyoung.com/press/C8_State_Journal.pdf

National Institutes of Health <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2799461/>

NIH.GOV database – Multiple data sets published by the C8 Science Panel and the West Virginia University School of Medicine regarding C8 and PFOA chemical exposure using data collected during the C8 Health Project.