



Advancing High Performance Health

AMGA Foundation

Adult Immunization  
Best Practices  
Learning Collaborative  
Case Study

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*SwedishAmerican  
Medical Group*



## Organizational Profile

SwedishAmerican Health System, founded in 1911, is an integrated health system located in Rockford, Illinois. With two hospitals, a cancer center, and a medical group, SwedishAmerican serves the residents of three Illinois counties—Winnebago, Ogle, and Boone.

Located near the Illinois-Wisconsin state line, SwedishAmerican joined UW Health, the University of Wisconsin Hospital and Clinics, a health system operated by the University of Wisconsin in Madison, Wisconsin.

SwedishAmerican Medical Group (SAMG), established in 1994, consists of over 30 ambulatory care clinics serving approximately 103,000 unique lives annually. The medical group has grown to include 16 specialties with more than 90 physicians, 31 advanced practice providers (APPs), 6 case managers, and a social worker.

## Executive Summary

With no clear direction of where to begin to address adult immunization needs, SAMG initiated their involvement in AMGA's Adult Immunization Best Practices Learning Collaborative (AI Collaborative) with nothing more than the simple intent to increase both pneumococcal and influenza immunization rates.

The AI Collaborative provided direction and assisted with the development of SAMG interventions, which included:

- Education of providers and staff
- Physician engagement
- Inclusion of a daily care gap report
- The addition of pneumococcal 65+ to its physician compensation scorecard

SAMG also attempted to implement a bi-directional interface with the Illinois state vaccine registry, but met with challenges during implementation.

The most significant results achieved were with the pneumococcal aged  $\geq 65$  years measures. The interventions for this measure were much more focused.

Patient education for this group included required signage in the exam rooms of all primary care clinics, thus prompting patients to inquire about the vaccine. Interestingly enough, in the past, signage has not been as effective.

Additionally, adding the pneumococcal 65+ measurement to the physician compensation scorecard was an effective method that increased rates not only with this measure, but with other quality measures as well.

SAMG has retained pneumococcal 65+ as a measurement and has begun to expand its focus toward those patients who are considered high risk.

During the AI Collaborative, there were two specific interventions focused on influenza. The first was to ensure all employees received the vaccination and that those results were documented in the electronic medical record (EMR). The second was to send a reminder to all patients via the patient portal.

## Program Goals and Measures of Success

Goals were set for the AI Collaborative with input from the AI Collaborative advisors. SAMG set its goal for pneumococcal aged  $\geq 65$  years at the collaborative "stretch" goal of 72.5%.

Even though there was no specific focus on pneumococcal high risk or influenza, the rates were set at the Centers for Disease Control and Prevention (CDC) 2012 guidelines, which were more attainable than the "stretch" goal. Both the pneumococcal high-risk and influenza rates did show some improvement simply as a result of being part of the AI Collaborative and the providers being more aware of the initiative to improve immunization rates.

The minimum goal was based on the CDC National Health Interview Survey (NHIS) estimates of national immunization rates for 2012-2014 time periods (the most recent available

at the time). Pneumococcal immunization rates in the NHIS were 59.9% for adults aged  $\geq 65$  years. For adults aged 19-64 who were determined to be at high risk for developing invasive pneumococcal disease, NHIS rates were 20.0%.<sup>1</sup> For influenza, NHIS immunization rates for adults aged  $\geq 19$  years were reported to be 43.2%.<sup>2</sup>

Healthy People 2020 goals from the federal Office of Disease Prevention and Health Promotion (HP2020)<sup>3</sup> were selected as challenge goals or goals on the high end. HP2020 goals are: Aged  $\geq 65$  years Pneumococcal 90%, High-Risk Pneumococcal 60%, and Influenza 70%.

A “stretch” goal was established between each group’s baseline and HP2020. The stretch goal was set at 50% of the gap between baseline and HP2020. Where one stretch goal is reported for all groups, it is based on the median.

## Data Documentation and Standardization

At the initiation of the Collaborative, Optum One analyzed the potential areas of immunization documentation sources for the groups in this Collaborative and determined that immunizations were captured in:

- Rx Tables
- Rx Patient Reports
- Immunization Tables
- Health Maintenance Tables
- CPT/G codes
- ICD-9 codes

Significant variation in documentation patterns can be seen across groups, resulting from variations in EMR provider and configuration, immunization documentation protocols, and adherence to documentation protocols. For the groups in the Collaborative, pneumococcal and influenza vaccinations were most commonly documented in Immunization Tables, Health Maintenance Tables, and CPT/G codes. The least commonly used sources for documentation among the groups were Rx Tables and Rx Patient Reports.

For the AI Collaborative groups that demonstrated documentation between multiple sources, the Optum team provided this data so that groups could determine a standardized documentation best practice internally.

## Population Identification

SAMG has nine primary care clinics, which are the locations where the majority of the adult patient population receives immunizations and where the focus of immunization efforts continued throughout this AI Collaborative.

Patients aged  $\geq 65$  years who were missing either one or both pneumococcal vaccines were identified through a monthly report (patient list) that was distributed electronically to all primary care providers and their clinic operation managers.

Specialty clinics were not included, with the exception of the cancer center, because they were not equipped to store and administer vaccines.

It has since become the intention of SAMG to have Pulmonology, Cardiology, Endocrinology, and Allergy offices equipped to store and administer pneumococcal and influenza vaccines.

## Intervention

The intervention process began with the development of a process flow diagram (see Figure 3), which provided an overview of where each intervention should occur.

The organization’s formalized plan of implementation originally included a bi-directional interface with the Illinois state vaccine registry. However, there were some challenges with the development of that process. There are plans to investigate this issue further, but in the interim, the focus remained on the core interventions.

Core interventions focused on provider and staff education, physician engagement, development of a daily care gap report (see Figure 5) to replace the monthly patient list, and adding the measure to the physician compensation scorecard.

As part of the provider and staff education plan, the following interventions were implemented:

- A pneumococcal algorithm and SmartSet were adopted and built into the EMR
- Care coordinators were educated to ensure high-risk patients with care plans received vaccines as needed
- Data from the AI Collaborative was shared with staff and providers on a regular basis to monitor the vaccination improvement rates
- Data was shared with physicians at the committee level to ensure the initiative remained a focus
- A more meaningful daily care gap report was developed and implemented toward the end of the AI Collaborative and the report included several measures along with pneumococcal 65+.

Measures continue to be developed to eventually identify high-risk patients who may require immunizations.

Patient education included pneumococcal immunization signage in the exam rooms of all primary care clinics. This required signage prompted patients to inquire about the vaccine. In the past, signage has not been as effective, but an increased impact was noted in this instance.

Two signs from California Department of Public Health were placed in the exam rooms. One focused on patients aged ≥65 years, and the other focused on patients with high-risk conditions such as asthma, diabetes, etc.

Education regarding influenza vaccine was provided to all patients with access via the patient portal. The following message was sent to those patients:

*Did you know that each year, 1 in 5 Americans get the flu, and the flu is the cause of 111 million missed days of work? You can avoid becoming part of those statistics by getting your flu shot—one shot helps protect you and your family for the entire flu season.*

*The seasonal influenza vaccine is safe and effective and remains the best protection against influenza viruses.*

*The Centers for Disease Control and Prevention (CDC) recommend that everyone 6 months of age and older, with rare exception, receive a flu vaccination every year, so make an appointment for your entire family—the earlier, the better!*

*In addition to getting the flu shot, you can protect yourself and your family from infection during flu season by taking the following steps:*

- *Use good hand hygiene;*
- *Cough and sneeze into your arm, not your hand. If you use a tissue, dispose of it as soon as possible and wash your hands;*
- *If you get sick, stay home;*
- *Keep your hands away from your face;*
- *Keep common surface areas clean—for example, doorknobs, light switches, telephones, and keyboards; and*
- *Eat healthy foods and stay physically active to keep your immune system strong.*

*Remember—Get Your Flu Shot. Not the Flu.*

*Please request your appointment online by clicking [here](#), or click [here](#) to contact your provider's office if you have questions regarding this notice.*

*Sincerely,  
Your Care Team  
SwedishAmerican Medical Group*

## Outcomes and Results

The overall results following the intervention period showed improvement in all three areas, but the greatest increase was seen in the pneumococcal aged  $\geq 65$  years group, which was the primary focus group.

The baseline rate for pneumococcal vaccines (any PV, aged  $\geq 65$  years) was 47.5%. At conclusion of the intervention period, it was 69.9%—a 22% increase in a relatively short period of time. The feedback received from providers and staff suggested that the interventions were not only successful, but meaningful to their workflow and processes.

Even though there was little focus or intervention for pneumococcal vaccine among the high-risk group, age 19-64, there was still an increase in pneumococcal vaccine rates in this group, from the pre-intervention period rate of 12.1% to 19.4%.

Lastly, the rates for influenza vaccines had a 6.2% increase from the pre-intervention period rate of 25.6% to 31.8%.

Initially there was some delay in receiving influenza vaccine. There was never an issue with pneumococcal shortages in the vaccine supply. This may have contributed in some small part to the final outcomes.

A consistent issue that the organization has struggled with is the fact that the influenza vaccine is available through many other venues—such as grocery stores and retail pharmacies. When patients receive the vaccine in one of these locations, it is not always communicated to the primary care provider. Access to the Illinois state vaccine registry could assist in capturing immunizations for those patients who do not self-report.

## Lessons Learned and Ongoing Activities

Several lessons were learned as this initiative was developed and implemented.

As simple as creating a bi-directional interface with the state registry initially seemed, it was not an easy process and it is not as yet fully functional. It was originally anticipated that this would be a “quick” win to increase rates for vaccines received outside the organization.

Communication of the plan of implementation was a key factor in the rate of improvement for pneumococcal aged  $\geq 65$  years. Staff and providers were kept informed of the steps taken and provided positive feedback regarding the process. One unexpected success was the required signage in the exam rooms. In most cases, additional signage is not welcomed. However, requiring signage in this instance prompted patients to ask questions about the pneumococcal vaccine, inquiring whether or not they should receive it.

Going forward, SAMG plans to continue its focus on patients requiring the pneumococcal vaccine, including high-risk patients. The daily care gap report will be built to include the high-risk criteria identified by the CDC.

## Acronym Legend

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**APP:** Advanced Practice Provider

**CDC:** Centers for Disease Control and Prevention

**EMR:** Electronic Medical Record

**HP2020:** Healthy People 2020

**NHIS:** National Health Interview Survey

**PV:** Pneumococcal Vaccine

**SAMG:** SwedishAmerican Medical Group

## References

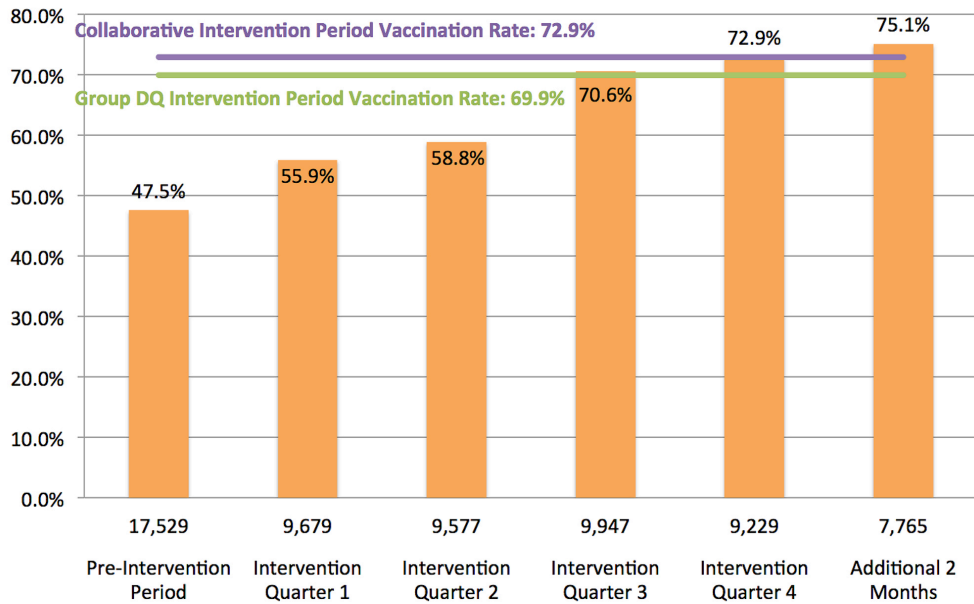
1. Williams WW, Lu, PJ, O'Halloran, A, Bridges, CB, Pilishvili, T, Hales, CM, & Markowitz, LE. (2014) Centers for Disease Control and Prevention (CDC). *MMWR MorbMortal Wkly Rep.* 2014;63(5):95-102 <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6305a4.htm>.
2. Williams, WW, Lu, PJ, O'Halloran, A, Kim, DK, Grohskopf, LA, Pilishvili, T, Skoff, TH, Nelson, NP, Harpaz, R, Markowitz, LE, Rodriguez-Lainz, A, & Bridges, CB. (2016) Surveillance of Vaccination Coverage Among Adult Populations — United States, 2014; *Surveillance Summaries / February 5, 2016 / 65(1):1–36* <http://www.cdc.gov/mmwr/volumes/65/ss/ss6501a1.htm>.
3. Office of Disease Prevention and Health Promotion (ODPHP). Healthy People 2020. <https://www.healthypeople.gov>.

## **Intervention Period Definitions**

- Pre-Intervention: 03/01/2013 - 02/28/2015
- Quarter 1: 03/01/2015 - 05/31/2015
- Quarter 2: 06/01/2015 - 08/31/2015
- Quarter 3: 09/01/2015 - 11/30/2015
- Quarter 4: 12/01/2015 - 02/28/2016
- Additional 2 Months: 03/01/2016 - 04/30/2016
- Intervention Period: 03/01/2015 - 04/30/2016

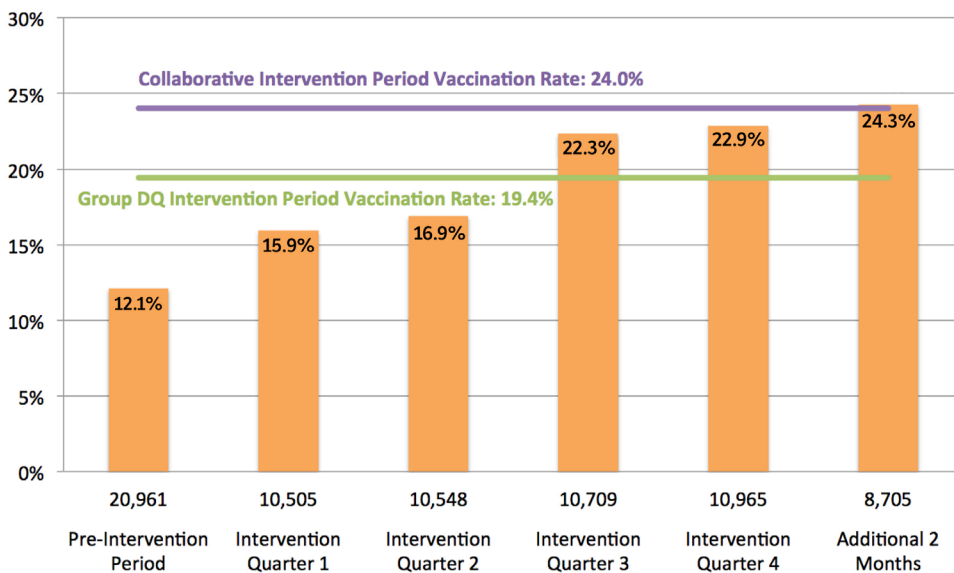
**Figure 1: SAMG AI Collaborative Results: Pneumococcal Vaccines**

**Group DQ: Pneumococcal Vaccine Rates  
(Any PV, Age 65+) Multiple Periods**



**Net Change in % Patient Vaccination Rate (Pre-Intervention to Intervention): 22%**

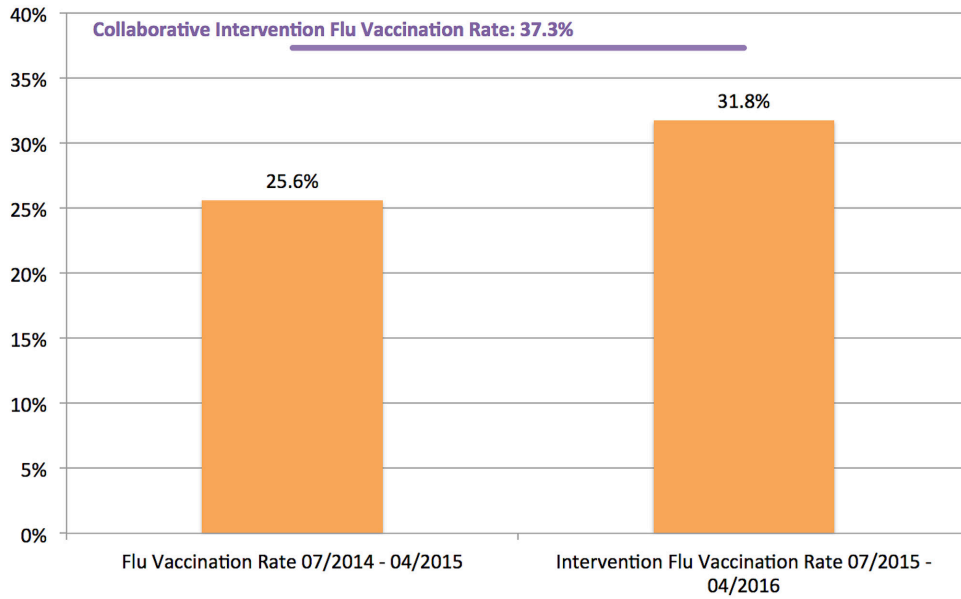
**Group DQ: Pneumococcal Vaccine Rates  
(Any PV, Age 19-64, High Risk) Multiple Periods**



**Net Change in % Patient Vaccination Rate (Pre-Intervention to Intervention): 7.3%**

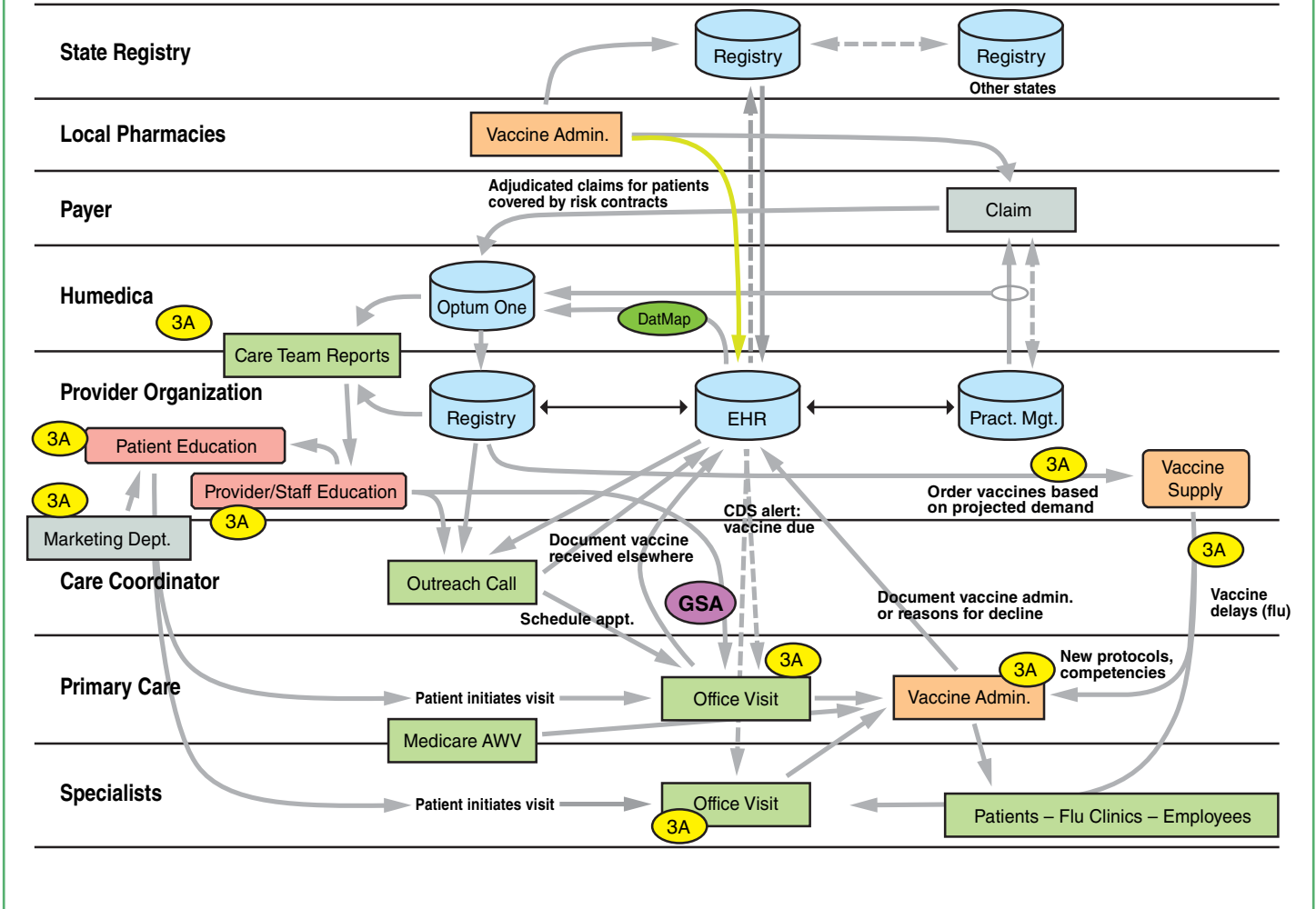
**Figure 2: SAMG AI Collaborative Results: Influenza Vaccines**

**Group DQ: Influenza Vaccine Rates  
Multiple Periods**





## Figure 3: Immunization Data/Process Flow



**Figure 4: EMR Prompt**

The screenshot shows the 'SmartSets' interface with a sub-section for 'Opened SmartSets'. It includes buttons for 'Associate', 'Primary Dx', 'New Dx', and 'Providers', and a 'Pharmacy' icon. A dropdown menu is open, showing 'IMMUNIZATIONS FLU/PNEUMOVAX ADULT — Required' with a red 'Required' label. Below this, it says 'Use only when BOTH vaccines are given in same visit.' and provides links for 'PNEUMOCOCCAL VACCINE TIMING' and 'CDC GUIDELINES'. A 'DIAGNOSES' dropdown is also visible at the bottom.

**Figure 5: Daily Patient Care Gap Report**

**Daily Patient Care Gap  
Provider Summary - 04/18/2016**

Report Date: 04/18/2016  
Report Time: 7:00 am

			PAP	MAM	COLORECTAL CANCER	DIABETES CONTROL	LAST A1C DATE	LAST BP DATE	PNEUMO CMPTD	DEPRESSION	SPIROMETRY	PEDS IMMS
BELVIDERE SAMG - [1001]												
SIMMONS, MARY - [20001]												
							LAST A1C VALUE	LAST BP VALUE				
	9:00 am		✓	✓	✓	✓		03/02/2016 114/70	✓	✓	✓	✓
AGE: 21	07/19/1994	Female	✓	!	!	✓		05/26/2015 125/88	✓	!	✓	✓
	10:00 am		✓	✓	✓	✓		12/29/2015 117/74	✓	!	✓	✓
AGE: 58	03/08/1958	Female	✓	✓	✓	✓		/	✓	✓	✓	!
	10:20 am		✓	✓	✓	✓		/	✓	✓	✓	!
AGE: 1	01/08/2015	Female	✓	✓	✓	✓		/	✓	✓	✓	!
	11:00 am		✓	✓	✓	✓			✓	✓	✓	!
AGE: 1	04/15/2015	Female	✓	✓	✓	✓		11/16/2015 123/83	✓	✓	✓	✓
	11:20 am		✓	✓	✓	✓			✓	✓	✓	✓
AGE: 62	06/30/1953	Male	✓	✓	✓	✓		12/04/2015 107/68	✓	✓	✓	!
	11:40 am		✓	✓	✓	✓			✓	✓	✓	!
AGE: 2	08/30/2013	Male	✓	✓	✓	✓		03/08/2016 101/64	✓	✓	✓	✓
	1:00 pm		✓	✓	✓	✓			✓	✓	✓	✓
AGE: 23	09/15/1992	Female	✓	✓	✓	✓		12/16/2015 114/71	✓	!	✓	✓
	1:20 pm		!	!	✓	✓			✓	!	✓	✓
AGE: 43	09/17/1972	Female	✓	!	!	✓		09/15/2015 125/82	✓	!	✓	✓
	1:40 pm		✓	!	!	✓			✓	!	✓	✓
AGE: 55	06/24/1960	Female										

## Project Team

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