

## Providence St Joseph Health saves \$300,000 with EntityWise



### The Scenario

Healthcare organizations employ MDM/EMPI/MPI platforms which use match technology to create a single view of patient or provider. But most platforms are unable to match all records and will raise tasks (also known as potential duplicates, suspects, worklists) for humans to manually review and make the match decision. This was the case for Providence St Joseph Health who had implemented a Master Data Management (MDM) platform to help create a single view of patient from all of their source systems. And even though the MDM had done a good job at creating 360 degree views of their patient population it was unable to render match decisions on 250,000 tasks. These tasks consisted of 2 or more patient records and needed to be manually reviewed by St Joseph through the vendor supplied data steward interface application.

Manually resolving these tasks posed many challenges and problems for St Joseph that included:

- Resolving 250,000 tasks would take approximately 1 year for the team of 5 to resolve
- The time delay affected patient safety
- Ensuring consistency in the decisions between 5 people is difficult and often requires the creation of a guide
- Any of the members that needed replacing over time would require new training and supervision
- Other data issues would have to be put on hold while the team attended to the task backlog

### The Actors

Tasks affected many actors within St Joseph but most directly affected the data steward team as the responsibility for resolving the backlog was theirs. But any staff interacting with patient data were affected by these unresolved tasks because the best possible 360 degree view of those

#### About EntityWise

Since 2007 EntityWise has specialized in record match technology and have created a machine learning approach to matching records that is more accurate than the traditional platforms. Existing platforms employ old technologies, deterministic and probabilistic, which fall short in matching the entire data set leaving tasks, potential duplicates, and suspects for humans to review manually. Through this new approach we customize the match algorithm for each client through a short learning exercise and can then make decisions on 100% of the data set.

[www.entitywise.com](http://www.entitywise.com)

patients were not readily available. And, of course, the patients themselves were affected.

## The Flow

The normal flow for resolving tasks for the Providence St Joseph data team was to use the Data Steward Application to resolve each task. This allows an individual steward to retrieve a task and the records that make up the task for visual inspection. The data steward reviews the attribute information available (name, address, date of birth, SSN, phone) and compares the records and makes a decision as to whether they are the same person or not (match vs no match). Once they make the decision they input their decision into the steward application and it creates the appropriate actions within the MDM and resolves the task. Each task takes an average of 3 min to resolve.

## AI Steward

AI Steward offered Providence St Joseph Health the ability to create a virtual data steward team member in their organization. Through this virtual team member they were able to teach AI Steward to resolve tasks and then allow it to resolve tasks at a much faster rate. This allowed them to resolve the 250,000 tasks in approximately 2 weeks instead of the year they estimated their team would have taken. And because AI Steward was able to eliminate the burden their data team was able to focus on other important data concerns.

Over the past 2 years St Joseph has been running AI Steward daily and resolving tasks within hours of their creation maximizing patient safety by matching patient records when they are created or changed.

## Benefits

- Resolve large backlogs
- Consistent resolution
- Can Run 7x24x365
- Resolve ongoing workload
- More cost effective

## Providence St Joseph Health Report

The following table is a part of the report that St Joseph provided their internal management team. The table highlights the effectiveness of AI Steward as compared to the data steward team efforts and shows that AI Steward saved them 13,227 hours which translated to \$323,640 dollars in savings.

Task Backlog (prior to AI Steward):	251,773 Tasks								
Task Backlog (after AI Steward):	0								
AI Steward task resolution time:	Averaged 45-50 tasks/minute (~2,850/hour)								
<b>Time Savings:</b>									
	<table border="1"> <thead> <tr> <th></th> <th>Data Steward Time</th> <th>EntityWise Time</th> <th>Time Savings</th> </tr> </thead> <tbody> <tr> <td>Inventory Clean-up</td> <td>13,227 Hours*</td> <td>41 Hours**</td> <td>13,186 Hours (backlog clean-up)</td> </tr> </tbody> </table>		Data Steward Time	EntityWise Time	Time Savings	Inventory Clean-up	13,227 Hours*	41 Hours**	13,186 Hours (backlog clean-up)
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Inventory Clean-up	13,227 Hours*	41 Hours**	13,186 Hours (backlog clean-up)						
*Data Steward hours based on average of 75 tasks per day									
**EntityWise based on conservative number of 3,000 tasks per hour (actual time was closer to 5,000 per hour)									
Cost Savings: \$323,640 (AI Steward vs. human data stewards)									
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