

Revolutionizing the Clinical Research Revenue Cycle with G.E.M.S.: A Cross-Functional Tool Mapping Hospital and Research Chargemasters to Enhance Workflows with Automation

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1. Background

Accurately capturing research procedure costs is critical to maintaining revenue integrity, securing adequate funding, and preventing underbudgeting. A more comprehensive mapping of our research chargemaster (OnCore CDM) to hospital chargemaster (Soarian CDM) was key to strengthening our budget builds and downstream clinical research revenue cycle processes, as our existing OnCore CDM was outdated and incomplete. Once initial updates were completed, the most challenging endeavor of this project was how best to effectively capture the hospital charges from the Soarian CDM into the OnCore CDM.

2. Goals

The main goal was to collaborate with our clinical and revenue cycle (RC) research teams to develop a standardized CDM mapping system to enhance efficiency, accuracy, and compliance in subject calendar and budget builds, visit certification, invoicing and billing.

3. Solutions and Methods

Collaboration led to a clearly defined standardized mapping system which mapped more generalized procedure fields within the OnCore CDM budget event to the Soarian CDM charge code fields, as the budget analyst (BA) is not always able to use specific charge codes when budgeting. Seen as the “Golden Egg” to enhancing all RC processes, the system was named the “Golden Egg Mapping System”, or G.E.M.S. (GEMS), and became the foundation to rebuild the OnCore CDM. GEMS was created in Excel and included all active fee types, their cost centers per charge code and pricing which were meticulously mapped to and imported into OnCore.

Commonly used calendar procedure names were mapped to their corresponding budget events. A Visual Basic for Application (VBA) macro was developed to automatically add budget events and items mapped to these calendar procedures listed in the OnCore calendar build. Another macro was created which synced the pricing from GEMS for hospital charges to an OnCore budget.

An SOP and training were developed to educate teams on usage of GEMS, and a web form was also created to submit and document ad hoc OnCore CDM requests.

4. Outcomes

GEMS implementation has:

- Accelerated the possibilities of RC workflow automation
- Introduced essential reporting opportunities such as trial income revenue and cost analysis
- Enhanced budgeting consistency and expedited budget completion timelines by 30 percent compared to the past two years

5. Learned and Future Directions

Collaboration among our clinical and financial teams was crucial to gain perspective from all RC workflows, allowing us to address process improvement opportunities and result in an innovative hospital-to-research CDM mapping system. The teams will discuss future strategies needed to maintain GEMS mapping and additional methods of measuring and projecting business impact as more data can be collected on final negotiated budgets and billing compliance using the updated OnCore CDM.

Future automations include:

- Automation development to couple a custom billing designation report output with GEMS to assist the billing team with processing research and payor billable charges within Soarian, potentially decreasing workload by 50 percent
- A visit certification macro using GEMS and Soarian charge data extracts to assist coordinators with automated visit certification completion in OnCore which include auto-selecting cost centers and procedure alternatives (e.g. MRI or CT performed)

Figure

CPTRevCd	CPTRevMne	CalendarProcedure	EventCd	EventDesc	ItemCd	ItemDesc	CC	Price
71045	X-RAY EXAM CHEST 1 VIEW	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest	X-Ray Chest	11301	Redacted
71045	X-RAY EXAM CHEST 1 VIEW	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest	X-Ray Chest	11314	
71045	X-RAY EXAM CHEST 1 VIEW	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest	X-Ray Chest	11312	
71045	X-RAY EXAM CHEST 1 VIEW	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest	X-Ray Chest	11310	
71045	X-RAY EXAM CHEST 1 VIEW	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest-PF	X-Ray Chest-PF	46001	
71046	X-RAY EXAM CHEST 2 VIEWS	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest	X-Ray Chest	11301	
71046	X-RAY EXAM CHEST 2 VIEWS	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest	X-Ray Chest	11312	
71046	X-RAY EXAM CHEST 2 VIEWS	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest	X-Ray Chest	11314	
71046	X-RAY EXAM CHEST 2 VIEWS	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest	X-Ray Chest	11310	
71046	X-RAY EXAM CHEST 2 VIEWS	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest-PF	X-Ray Chest-PF	46001	
71047	X-RAY EXAM CHEST 3 VIEWS	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest	X-Ray Chest	11301	
71047	X-RAY EXAM CHEST 3 VIEWS	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest-PF	X-Ray Chest-PF	46001	
71048	X-RAY EXAM CHEST 4+ VIEWS	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest	X-Ray Chest	11301	
71048	X-RAY EXAM CHEST 4+ VIEWS	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest	X-Ray Chest	11310	
71048	X-RAY EXAM CHEST 4+ VIEWS	Chest X-Ray	X-Ray Chest	X-Ray Chest	X-Ray Chest-PF	X-Ray Chest-PF	46001	

Example of GEMS mapping