A little over two years ago, Sisters of Mercy—a health system including 22 hospitals in four states with over 4,000 beds and 4,600 medical staff members—embarked on a mission to devise and enact a system-wide formulary. Prior to this decision, the hospitals in our health system independently developed and maintained their own formularies, and formulary decisions and reviews were the responsibility of each facility’s Pharmacy and Therapeutics (P&T) committee. The most troubling issue with this approach was the dramatic variation of drugs used across the health system, which increased the risk of medication errors. By standardizing our formulary, we were able to significantly reduce this variation, and by developing guidelines for the use of formulary medications, we could be certain of their safe and effective use.

**Standardizing the Formulary**

Standardizing our formulary was a monumental task, requiring two years of medication reviews. Part of this review process involved writing up white papers on the medication classes and then putting together an advisory board to make recommendations. Meetings were held every other month, and about six drug classes were reviewed per meeting. For each class, we carefully examined every drug possibility to decide which were most clinically appropriate. We could then establish which drugs were going to be mandatory, which would be optional, and which were going to be eliminated from the formulary. For example, we reduced the number of ACE inhibitors we were carrying across our facilities from 16 to four. At the conclusion of this process, we reduced the number of products in our system from 7,745 drugs to around 3,500.

**Choosing a Management System**

Part of the formulary standardization process was deciding what tools we would need to successfully communicate the proposed formulary changes to staff and physicians throughout the health system. Our search for the right formulary management system began with a review of all the systems in place at our facilities. Some already had effective systems to communicate and track formulary changes; the mechanisms used to organize this information ranged from Excel spreadsheets to commercially available products. These different systems were used in a multitude of ways and updated on different schedules, resulting in numerous variations across the health system. Updates were not consistent and printed copies of the formulary were difficult and costly to produce and maintain. In addition, The Joint Commission requires that pharmacies make their formulary accessible to practitioners. By instituting a well-maintained formulary tool, we would be employing a best practice for this requirement.

The search for a formulary tool to fit our needs began with a wish list of features we wanted and tasks that the tool should be able to perform. We looked at several different tools and eventually narrowed it down to three software solutions. We took these solutions to the clinical coordinators and pharmacy directors of each of the hospitals in our health system. In order to evaluate the electronic formulary tools as objectively as possible, we presented each tool to them in a WebEx presentation. After reviewing the products, we came up with key features we wanted our formulary tool to possess:

- A user-friendly front end
- Ability to display multiple formularies
- Ability to link to our clinical drug information database, so physicians and clinicians could not only identify what is available on formulary, but link to the clinical information from the same page
- Ability to control and manipulate the formulary from a central location

Standardizing our formulary reduced variation among our hospitals, decreasing the number of items we carry by 65%.
During the review process we determined that the ability to centrally control and manipulate the formulary was crucial because it would allow formulary updates and changes to occur once centrally, and then be pushed out to each individual facility. At the same time, facilities could still manage their formulary locally, meaning individual hospitals would be able to delete practice-irrelevant drugs from the formulary.

Considering that our system-wide formulary initiative would reduce the number of items carried, decrease spending, and improve safety in our facilities, we were able to easily defend our need for this tool, despite a restrained budget.

Software Implementation
Once approved, we moved quickly to implement the solution. We decided to roll out implementation and training to one facility at a time. The software vendor staff put together an action plan that we first executed at one of our medium-sized facilities.

One of the main concerns expressed by the individual pharmacies was that installing this software would be a time consuming process. We assured them that while this transition required a time commitment, enacting these changes would save them time in the long run since we would be able to handle most of the formulary updates at the central office and push the updates out to the individual facilities.

Ease of implementation hinged on two factors: how well a hospital’s formulary had been maintained, and the number and availability of people in need of training. Generally, it took less than two weeks to transition each facility to this new system.

One of the initial challenges we encountered involved identification of the facilities’ formulary items. This was most apparent in facilities that had not managed their formularies effectively. In instances where formularies were not kept up to date, we ran into the issue of NDCs that no longer existed, making it difficult to effectively cross formulary items.

When we encountered items that did not have an active NDC, we had to individually review and identify an active NDC number. Our first formulary cross resulted in over 500 non-active NDCs. With help from the software vendor staff, we were able to build an old NDC cross list. Once this was developed, there was a substantial decrease in the number of non-matches. Our final facility had just 11 items that could not be matched by the implementation team.

Managing the New System
Management of this system has varied among facilities. Some of our facilities spend as little as one hour per month on the system, while others use it for applications beyond just managing the formulary and devote much more time to developing and managing it. For example, some facilities also use the software to list protocols and house current guidelines and clinical information.

This “one-stop-shopping” approach has been well received by the physician and hospital staff, and it encourages them to look at formulary updates on a regular basis. Although not measured yet, we feel this standardized system will cut down on the time pharmacists spend calling physicians to switch to a formulary drug.

Ease of implementation hinged on two factors: how well a hospital’s formulary had been maintained, and the number and availability of people in need of training.

Conclusion
When all was said and done, we implemented our formulary system at 13 of our facilities over a six-month period. Standardizing our formulary reduced variation among our hospitals, decreasing the number of items we carry by 65%. It also resulted in an approximate savings of $3 million over two years. Most important, this initiative improved clinical outcomes and safety at our facilities.

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