Introduction

“Do the Right Thing” – four simple words that can drive decision making and impact the care and safety of patients, clinicians, staff and visitors at your hospital. The culture at Northwestern Memorial Hospital has taken this motto to heart. This was evident in 2008 when Despina Kotis, PharmD, became the Director of Pharmacy, inheriting the Pharmacy Waste Management Program (PWMP) initiative. Motivated to increase hospital safety while reducing environmental impact, Dr. Kotis began to design a process to roll out the PWMP and “do the right thing”. Initially confined to the 10 pharmacy locations throughout their campus, the project quickly grew as she realized the challenge expanded well beyond the pharmacy.

Background

A large academic medical center, Northwestern Memorial Hospital (NMH) is located in downtown Chicago, IL covering several square blocks. Ranked by US News & World Report as #1 in both Illinois and the Chicago metro area, NMH is an organization whose focus is on providing consistent quality patient care. With over 900 beds, 7,000 employees and 1,600 affiliated physicians across all medical specialties; NMH’s vision is to impact and improve the overall health of the community. Changing practice patterns or initiating new programs is always a challenge with a tertiary care facility – with the breadth and depth of services and clinicians in training.

In 2008, as the current Pharmacy Director was preparing to retire, Dr. Kotis, was taking on additional responsibilities to ease the transition. With the Pharmacy Waste Management Program (PWMP) top on the list, Dr. Kotis began working with Stericycle as a partner to roll out the initiative across the entire campus. Incorporating a PWMP would protect patients, families, staff and the community – ultimately doing the right thing.

Planning & Implementation

Phase 1 of the PWMP program started with determining the pharmacy locations. In addition to the central pharmacy, there were 10 satellite pharmacies plus the cancer center throughout the NMH campus. Although pharmacy staff were accustomed to working with various drug compounds, the first step in training was to identify the different types of pharmaceutical waste and the required disposal container for each. Stericycle’s service provided updates to their RCRA hazardous pharmaceutical formulary to ensure they were always current. Over the course of 3 months, policies, procedures were developed and training was successfully completed for each pharmacy location and all pharmacy staff.

Recognizing the need to expand the program, the next step was to identify a team of key stakeholders to develop and craft a plan. Bringing together a cross-functional team was critical to understand address the nuances of each department to ensure compliance. Tapping into the newly established Green Team, Dr. Kotis found an ally. An OR anesthesiologist (with a pharmaceutical background) became a key champion to driving PWMP implementation. Other team members included representatives from nursing, pharmacy, safety, facilities, EVS and Environment of Care participants.
Once the PWMP team was brought together, a plan to roll out the PWMP throughout the medical center was developed. Building on the success of Phase 1 Pharmacy implementation, the following order was put in place:

**Phase 2** – Operating Room  
**Phase 3** – Procedural areas (e.g. ER, GI lab, Cath lab, Radiology)  
**Phase 4** – Patient care units.

For Phase 2 & 3, unit representatives were identified to work with the PWMP team to drive the new procedures. Round the clock training was provided by the Stericycle team to all staff on proper segregation and disposal techniques. Once all training was complete, if any staff person was unsure of how to properly dispose of a pharmaceutical product, it could be returned to the pharmacy where pharmacy technicians would sort and dispose of the product. This gave the team insight to target areas for retraining. Flyers were also posted for a quick reference on safe disposal of the drugs.

To address the diversity of patient care areas in Phase 4, a different strategy was incorporated. Six nursing units were identified to initiate a 3-month PWMP trial. Staff representatives from each area were recruited to participate and help drive the implementation. The teams met weekly to iron out their specific challenges regarding proper pharmaceutical waste handling. By working with each department, staff buy-in and compliance increased. When this was completed, the program was rolled out to all patient care areas.

Once operational, Dr. Kotis and her team worked with their partner Stericycle to track metrics to measure success. A Stericycle Specialist performs a routine quarterly audit of each floor/unit involved with pharmaceutical waste. Metrics measured include:

- Proper placement of reusable containers in the pharmacies and patient units
- Proper segregation of incompatible and/or P-listed wastes;
- Controlled substances in proper containers
- Containers free of empties and/or trash
- Tracking labels applied and dated correctly
- Blue reusable or 55 gallon containers contain non-hazardous bulk
- Black reusable or 55 gallon containers contain hazardous bulk
- Reusable containers accessible and under the control of the Generator and closed
- The Central Accumulation Area is locked, is appropriately signed, has a current Inspection Log available, and Incompatibles are stored separately.

With each audit a comprehensive report is issued and reviewed by each department. This allows for unit-tailored follow-up and retraining as needed.

Now that all departments are compliant, Dr. Kotis and her team follow their initial plan to identify stakeholders, train staff and provide on-going support and education and track metrics as new hospitals are added to their system. Lake Forest Hospital, in the northern suburbs of Chicago has also integrated their PWMP into the entire NMH system.

According to Dr. Kotis, on-going challenges primarily focus on sustaining the focus on proper handling of pharmaceutical waste across 7,000 staff members. As an academic center, there is a constant stream of new students, residents, and staff that require training and support. The HR department has implemented training goals for staff that start with new-hire orientation. It is reinforced with annual training that is tracked and monitored for compliance. In real time, pharmacists and pharmacy technicians are available as everyday questions and concerns arise.
Final Recommendation for Success

In closing, Dr. Kotis identifies the following as critical factors for the successful implementation of a PWMP program at NMH:

1. It takes a village. Gather a cross-functional team representing the departments that will be impacted. Listen to their input. Find the right industry partner with expertise to work with the key stakeholders to tailor your plan.

2. Identify your champion. Having the Anesthesiologist leading the initiative created positive momentum for change. Involve HR to integrate training and education for all staff.

3. On-going sustainability is dependent on training and retraining. Keeping the positive energy alive will increase compliance across all departments. The quarterly audits help to identify gaps and respond quickly.

4. Above all, “Do the Right Thing” to ensure patient, staff and community safety and success will follow.

Reference List:

1. Pharmaceuticals found in drinking water, affecting wildlife and maybe humans, AP, March, 2008

2. Pharmacy, Purchasing & Products, December, 2013 vol 10 No. 12

3. Sustainability Roadmap website http://www.sustainabilityroadmap.org/topics/waste.shtml#.UsWo_3mDCKw