**"How can a resident implement change in a large academic medical center?"**

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One of the most challenging tasks I have accomplished so far in my career is implementing a multidisciplinary guideline in a large academic medical center. The opportunity presented itself during my first year of residency while I was creating an educational session about venous thromboembolism treatment and prophylaxis for fellow residents and students. One of my advisers for this presentation was discussing the lack of structure related to the management of heparin-induced thrombocytopenia (HIT) within our institution and asked if I would be interested in helping develop a guideline. I agreed because I thought it would be a great opportunity to learn more not only about this area but also about creating institution-based guidelines. Needless to say, I did not realize how much time and dedication it was going to take to see this guideline to completion. Although it was a challenging experience, I learned some valuable lessons with each barrier I met along the way. I highly recommend that residents get involved with this process if presented with the opportunity.

My No. 1 piece of advice is not to get frustrated with the barriers you encounter, but to learn to navigate around them. I have included my insights regarding the various barriers I encountered throughout implementing a HIT management guideline.

**Barrier 1: Gaining a Consensus**

When our project team created the first version of the guideline, I thought that it was perfect and that we would have approval in no time. At 18 months into the project, I had 18 versions of the guideline saved on my computer. Gaining a consensus from all of the stakeholders within your institution can be challenging and frustrating at times. Version 1 became version 18, according to feedback from physicians, pharmacists, laboratory staff, and nursing. It is important to incorporate the revisions from each of these groups in order for the guideline to be widely accepted across the institution.

These groups also help uncover areas you may have failed to think about. For example, nursing staff pointed out that it is almost impossible for them to know when the medical team orders a HIT laboratory panel unless they are present on rounds and it is discussed. This lack of information could lead to the administration of agents such as heparin flushes in patients with HIT laboratory panels pending.

Because of these conversations, many methods to notify nursing staff were discussed, including patient wristbands, signs for the patient's door, and allergy documentation. Wristbands, I soon learned, had to be approved by a specific committee known to be highly selective. Although I originally thought that a sign on the patient's door would be the most visible, I later learned that this would be missed when patients transfer to places such as inpatient dialysis or the operating room. Finally, placing a temporary heparin allergy in the electronic medical record that could later be deleted if the testing came back negative and a sign on the patient's door were determined to be the best method. Signs then had to be approved and set up through our internal print center so that all units in the hospital could order them when needed.

It is important to approach each of your key stakeholders early in the planning process. These groups can help point out areas of weakness, and it is crucial when you are trying to affect

several groups across your institution. It is very rewarding when you have that final version in your hand and know that you have reached a consensus across all of the disciplines your guideline will affect.

**Barrier 2: Know Your Stakeholders and Resources**
It is easy to miss important stakeholders when planning for a project. When I started the guideline, my initial team included two cardiology pharmacists and a benign hematology pharmacist. My final team included two cardiology pharmacists, the benign hematology pharmacist, a medication safety pharmacist, a benign hematology physician, and two physicians who work in our coagulation laboratory. I also worked very closely with the nurse who chairs the institution-wide nursing council and a pharmacist who works directly with our electronic medical record informatics team. I never imagined that our project team would grow this large, but each person played an important role in the process. For example, our medication safety pharmacist has helped me navigate the proposed changes we are recommending regarding heparin allergy documentation. The two physicians who work in our coagulation laboratory have helped me create a protocol that will allow pharmacy residents to follow up on all HIT panel laboratory results to ensure appropriate allergy documentation and medication use. The pharmacist who works with our informatics team is helping me create an order panel that will be easily accessed by ordering physicians with all of the appropriate medications, laboratory tests, and nursing orders related to the guideline. My advice for residents is to think big early when it comes to your project team and the resources you will need. Each person on my team played an important role and has helped me navigate a variety of barriers. It was key to get them on board early in the planning process.

**Barrier 3: Change Management**
If you had told me at the start of residency that change management is important regardless of your specialty, I would not have believed you. I always thought change management was only important for my colleagues heading down the administration pathway. While implementing this guideline, I learned to manage many different personalities. It can be challenging and intimidating as a pharmacy resident to walk into a room of physicians or pharmacists who have been practicing for 10+ years and tell them how to treat a disease that they have expertly been managing for years. My advice is to be prepared and review the reasons for making your decisions, especially for disputable components or gray areas of the guideline. For example, while presenting the guideline to the entire benign hematology physician group, the question came up regarding why we didn't include the degree of positivity for one of the HIT laboratory tests. The guideline initially had included this information in one of the earlier versions. After further discussions within our project group, we decided this information was too complicated to include in a guideline that we were expecting all house staff to follow. We were able to defend our answer and find a consensus among the group. Had I not come prepared to discuss some of the possible disputable components, my experience during this presentation could have negatively affected the progress on this project. I encountered similar conflicts during my presentations with the pharmacist group. As a resident trying to manage change among providers who have more experience than you, try not to feel intimidated when conflicts arise. Instead, come prepared and make it a conversation instead of a conflict. Be ready to defend your reasons for making your decisions, and you will gain a lot of respect from these groups.

Overall, I highly recommend that residents get involved with these projects when the opportunities arise. It is both a challenging and a rewarding experience. You learn how to manage a longitudinal project on top of all of your other residency responsibilities, how to gain a

consensus across many disciplines, which key individuals should make up your project team, and how to manage change. It would have been easy for me to give up, especially when I didn't expect this project to carry over past my first year of residency. Now, I am proud that a resident-driven project is making a large impact on the way my institution will treat patients with HIT in the future.

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