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How Technology Promotes Safer Medication Use

EVOLUTION OF MEDICATION ERROR TRACKING AND DEVELOPMENT OF TOOLS TO REDUCE THE MED ERRORS

How has medication error tracking evolved over the years? What have we learnt and what programs are in place to generate information about the stakes we have made in the past? How can we harness emergent technology in the ways that allow us to be more careful moving forward? You are listening to ReachMD XM157, The Channel for Medical Professionals. Welcome to focus on pharmacy. I am your host, Dr. Charles Turck. Our guest is Diane Cousins, the registered pharmacist and vice president of the Department of Healthcare Quality and Safety Documentary Standards Division at the United States Pharmacopoeia. Ms. Cousins was instrumented in assembling the first USP advisory panel on medication errors and in helping create the national coordinating council for medication error reporting and prevention or NCCMERP.

DR. CHARLES TURCK:

Diane, welcome to the program.

MS. DIANE COUSINS:

Thank you, good to be here.

DR. CHARLES TURCK:

We will start with a little bit of background. What is USP and how long has it been around?

MS. DIANE COUSINS:

USP is a private non-profit organization. When we set official public standards for drugs, both prescription and over-the-counter drugs,

as well as dietary supplements, food ingredients, and other healthcare products that are manufactured and sold in the United States and USP has been around since 1820, so we have a long history of setting these standards. The standards are actually recognized by the Federal Food, Drug, and Cosmetic Act and this is what gave us the legal authority to establish the standards so that when USP sets standards, they can be enforced by the Food and Drug Administration.

DR. CHARLES TURCK:

How has USP evolved over the years?

MS. DIANE COUSINS:

USP standards are actually used in more than a 130 countries around the globe and we now have 4 international offices. So over the years, USP has begun to set standards in new and different areas; some of the most recent, for example, in dietary supplements and food ingredients, but their history really goes back to the days when pharmaceuticals were compounded. Interestingly as technology developed, those products became manufactured and interestingly were circling back around so that we are starting to see more and more compounded pharmaceuticals once again and so we set standards not just for manufactured dosage forms, but also for compounded dosage form.

DR. CHARLES TURCK:

What is your role at USP?

MS. DIANE COUSINS:

Well, the Department for Healthcare Quality and Safety at USP focuses on a few different areas – (1) In the area of standard setting, we set standards for compounded pharmaceuticals both sterile and non-sterile. In the area of drug nomenclature, we actually establish the official title for drugs; so this would be, for example, potassium chloride concentrate for injection. It is kind of what people think about as the generic name for the drug and the one you see most prominently beneath the brand name of any drug product. We also set standards for safe practice and safe use of medicines and lot of this activity grows out of the area of medication error prevention, something read into back in the early 90s with the Institute for Safe Medication Practices. We began to collect reports on medication errors from healthcare practitioners and then we were looking for ways that USP could use that information to prevent future errors from occurring. So this would be in the areas of packaging, labeling, naming of these drug products.

DR. CHARLES TURCK:

You mentioned over the last couple of decades, USP became involved heavily in medication error reporting. To whom does USP report the errors?

MS. DIANE COUSINS:

The errors are reported to USP by a multitude of healthcare professionals primarily, although we do get some reports from consumers. They can contact us by a myriad of ways. They can phone, they can fax, they can send in a written report, but they are usually reporting

to us because they feel that this is something that needs to be brought to national attention, that this is something they do not want to see happen again and they feel that the influence USP has on the national level can help to achieve that. When we receive reports from the folks, we send information off to various parties to try to effect that change. One for example, is the Food and Drug Administration so that they can look for ways that products can be modified through labeling, packaging, naming of drugs. We also share reports with the Institute for Safe Medication Practices, which I know many healthcare professionals now has been dedicated to error prevention for many years now and they really are partner in doing education, conducting seminars, publishing, and the like with information that we receive. We also share information with pharmaceutical industry so that they can make the appropriate changes in products and they do this quite willingly without necessarily the urging of the Food and Drug Administration, although that loop exists so that if something needs attention and it is not getting it, so the FDA can take the appropriate action and make that happen.

DR. CHARLES TURCK:

What is the Med Marks program?

MS. DIANE COUSINS:

Med Marks was the second of our reporting programs that we launched in 1998. We had been getting a request from hospitals and healthcare practitioners. They knew we were operating the medication errors reporting program and they were wondering if there was some way that the database that we operated here could be reported into their facility. They were beginning to be as per the joint commission, you know, what are you doing in this regard, how are you tracking medication errors, and so they were looking to us for the way that we were doing this at the national level; it really was the only external reporting that healthcare practitioners had at the time. We designed that marks from hearing the concern and the interest in what it was that they were trying to capture and to document and we developed it in a way that they would use this information not just for their own game, but also in a way that would allow the sharing of this information among the participating hospitals and of course with USP. So Med Marks is an Internet accessible database that is anonymous by nature. So we know what hospitals participate, but once they are in the system, we do not know, which errors belong to which hospitals and this unanimity of Med Marks has really led to its success. We have more than a million-and-half records on file at this point from hospitals probably numbering around 900 that have participated over the years. The ability for them to submit information in a standardized way and then to not only share their information with others, but to learn from others what their experiences were in this medication reign and how did they aim their targeted solutions at these errors to prevent them from happening again in the future. This is an excellent shared learning system for hospitals and the related health systems.

DR. CHARLES TURCK:

Over the years, what sort of increase in annual volume of medication error reporting have you seen at USP?

MS. DIANE COUSINS:

Well, you know, it is interesting; over the years, the numbers of reports that we have been getting has certainly been increasing and we attribute this to a few different things – (1) I think within hospitals and health systems, there is a better understanding of exactly what is the medication error, why does it need to be reported, had you properly documented it, (properly I would underscore). When we first started the program, there was really very little information available about an event and some of the more serious outcomes. It was difficult to understand what the entire situation might have been when this error occurred, but what we have been able to teach these participating hospitals is the kind of information that is most useful to capture in documenting their events and so – (1) They know better what they need to track and trend. (2) They have learnt, I think, over time that part of an increased reporting within an institution is very strongly dependent on the culture within that institution and so when a culture of learning is embraced by particularly administrators and most specially by the physicians on staff, we find that the willingness to document, to report the ability to identify errors increases

dramatically because there is support for identifying those kinds of events. We also found that by our work in various other programs, we were able to educate the community in the kinds of things that we were seeing and so by feeding back information to the hospitals, it gave them a better idea of the kinds of things they could track and trend and what happened was there was a change in hospitals from identifying these incidents as merely events to progressing to appoint where they could learn from these events in a way that was even proactive. So, for example, they used the Med Marks database to check products out that they are going to add to their formulary or if they are adding a new strength of the drug to their formulary. We will take a look in the Med Marks database and see what errors have been reported so that they can create the safety meds that prevent these kinds of errors from happening at their institution. We are also seeing a lot of the learning that goes on relative to technology and so while they are in a phase of planning to implement technology, they can learn what other institutions have experienced in their surrounding meant to try to design those things out of the system. So all that created this general awareness in these institutions about the kinds of things that could not, should be reported and eventually we began to see this growth in a number of events that were being disclosed.

DR. CHARLES TURCK:

Taking you back to the listener, what sort of benefits would you say individual healthcare practitioners might realize or how might they be impacted by participating in something like Med Marks?

MS. DIANE COUSINS:

Well, I think one of the benefits of participation in Med Marks is the fact that the participants can use the database for their benefit. They can look not only at their own records and search and sort and trend over time in their powerful tools in Med Marks that allow them to do that, but they are also able to look outward at what other hospitals are experiencing. So they can search the data of all of the hospitals that are participating in Med Marks and the unanimity of those institutions is preserved. By being able to look to those events in a shared learning way, they not only learn about the events, but Med Marks also tracks what the facilities do to prevent this event from happening again in the future and so there is the benefit of not only learning about the event, but what can be done to prevent that.

DR. CHARLES TURCK:

I am changing bears for just a moment. Just a few months ago, USP and a new online tool called drug error finder, how does the program work?

MS. DIANE COUSINS:

We had this concept for drug error finder when we produced the Med Marks Ace annual report and we do a report to the nation each year on various topical areas that we think are of particular interest to the public at that point in time and this year we chose look alike, sound alike drug names as the topic of the <_____> annual report. In preparing that data, we realized that the number of drugs that were involved more than 1400 different drugs and they combined in ways to form more than 3000 pairs of drug names that had been mixed up and the cost list was so large, we knew that we needed to provide something more electronic that would allow not only healthcare professionals, but the public in general to identify where these drug names are being mixed up, what are the names that are causing confusion, and this involves drug names that are both prescription and over the counter. It involved even in some cases a few international drug names that were confused with products available here in this country and in some cases, there are as many as 15 different drugs that are confused with one as in the case of cefazolin – there are actually 15 other products that were confused at one point or another. Given the explosion of drug approval in recent years, we could see this problem only getting worse and so this idea of a drug finder was something that we thought could put in a practical way into the hands of the public a method to identify the drug names that are being confused one for another.

DR. CHARLES TURCK:

We have been talking with Diane Cousins about the evolution of medication error tracking and the development of tools to reduce the med errors. Diane, thank you so much for joining us.

MS. DIANE COUSINS:

You are very welcome.

DR. CHARLES TURCK:

I am Dr. Charles Turck and you have been listening to Focus on Pharmacy on ReachMD XM157, The Channel for Medical Professionals. Please be sure to visit our website at ReachMD.com featuring on-demand podcast of our entire library. For comments and questions, please call us toll free at triple 8- MD XM157 (888-MD XM157) and thank you for listening.