



## Point of Care Products in Health Science Classes

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### ABSTRACT

Point of Care products (POCs) provide health professionals with access to digital information on medications, diseases, and the recent research results. These products are searchable on tablets, smartphones, and computers. Most health science libraries provide access to at least one POC. A survey of 138 Medical Library Association members, however, shows that most librarians rarely mention or incorporate POCs into health science classes. In the Fall of 2017, after reviewing the results of a survey, librarians at the University of Toledo, incorporated POCs, patient cases, and group activities into classes taught to first-year medical students hoping to see changes in student practices.

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## Introduction

Health professionals use Point of Care Products (POCs) to access information on medications, diseases, and the recent research (1). Medical, nursing, dental, pharmacy, and physician assistant students use POCs regularly when completing the applied portion of the curricula in private clinics, urgent care, concierge practices, hospitals, and other locations.

Health science libraries and hospital libraries purchase and have POCs available for students and health professionals to use. An introductory health science class can be an excellent opportunity to introduce POCs (2–4), and to allow new students to compare and contrast information available from POCs, medical databases, and Google (5).

Table 1 lists the most common POCs available in health science libraries, and for each POC shows the name, a brief description, and the target audience. Pricing for POCs are not provided because these vary greatly by the number of employees, setting (academic, hospital, corporate), and the anticipated use of the product by students.

**Table 1.** POCs Available in Most Health Science Libraries.

Product Name	Description	Target Audience
ACP Smart Medicine	<ul style="list-style-type: none"> <li>• Designed by the American College of Physicians.</li> <li>• Provides information on diagnosis, therapy, prevention, screening, and more.</li> <li>• Stopped updating content in 2016.</li> </ul>	Doctors Medical Students Physician Assistants
DynaMed	<ul style="list-style-type: none"> <li>• Provides good information about diseases and medications. Also contains patient information handouts.</li> <li>• Best if searched as a database – not a regular POC.</li> <li>• Searchable by tablet, smartphone, or computer.</li> </ul>	Doctors Dental Students Medical Students Nursing Students Nurses Pharmacists Pharmacy Students
DynaMed Plus	<ul style="list-style-type: none"> <li>• Contains drug information from Micromedex, which is the Pharmacist’s top choice for drug information.</li> <li>• Searchable by tablet, smartphone, or computer.</li> </ul>	Doctors Dental Students Medical Students Nursing Students Nurses Pharmacists Pharmacy Students
Lexi-Comp	<ul style="list-style-type: none"> <li>• Provides information on medications, purpose of a drug (i.e., disease drug was designed to treat), and recommended dose for different age groups.</li> <li>• Can purchase subject specialty information (i.e., Oncology) instead of the entire product.</li> <li>• Searchable by computer, tablet, or smartphone.</li> </ul>	Pharmacy Students Pharmacists Pharmacy Students
UptoDate	<ul style="list-style-type: none"> <li>• Product functions similar to Google.</li> <li>• This is the most popular POC among health professionals.</li> <li>• Searchable by tablet, smartphone, or computer.</li> </ul>	Doctors Dental Students Medical Students Nursing Students Pharmacists Pharmacy Students

**Methods**

This study consisted of a survey, with the following three questions:

- (1) Which of the following POCs are available to your students?
- (2) Are POCs mentioned or included in activities when you teach health science classes?
- (3) When working with students one-on-one or in small groups, do you mention POCs?

In June 2017, the author emailed the survey to 3800 health science librarians, receiving back 138 responses. This response percentage (3.6%) is typical for a Web-based survey with no incentives for participants (6). The University of Toledo Social, Behavioral, and Educational Institutional Review Board approved this study.

## Results

The results are shown in Figures 1–3. Figure 1 shows the POCs provided by the responding libraries to the following question: Which of the following POCs are available in your library?

Figure 2 shows responses to the following question: Are POCs mentioned or included in any activities when you teach health science classes?

Figure 3 shows responses to the following question: Are POCs mentioned or included in activities when you teach health science classes?

The survey shows that many health science libraries provide access to at least one POC. During introductory health science classes, librarians usually mention the POCs, but few incorporate any activities using POCs during their classes. During conversations with individuals or small groups of people, however, librarians frequently discuss POCs. Knowledge of, and familiarity with, different POCs are useful to incoming students entering the applied portion of the health professional program (7). Students usually use tablets or smartphones to access POCs during the applied portion of the curricula (8–10).

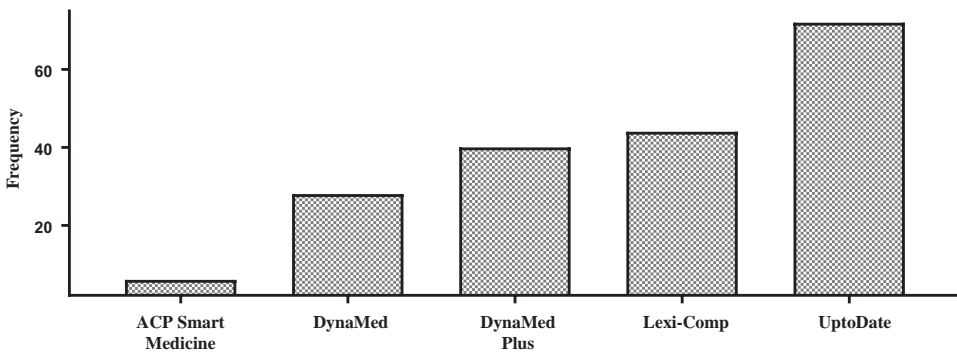


Figure 1. POCs provided by libraries.

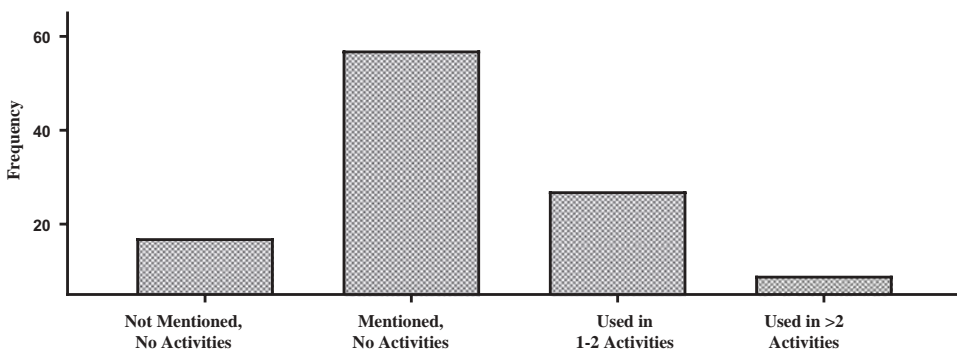
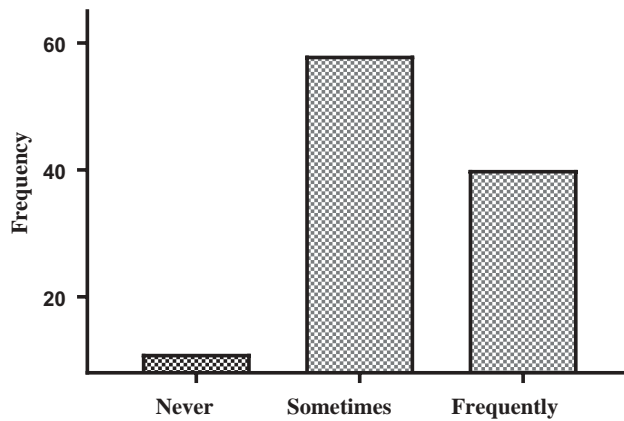


Figure 2. Use of POCs in classes.



**Figure 3.** Use of POCs in discussions with students.

## Discussion

Librarians sometimes serve as guest lecturers in medical school curricula. In other places, students approach librarians, when they begin working on a summer research project or after a faculty member points them toward the library (11). Such meetings give librarians the chance to work through issues, such as the differences between information available in POCs compared to information from medical databases. It also gives librarians and students a chance to look in depth at resources faculty members might mention in passing. Depending on the staffing at a hospital or academic medical center, librarians can participate in rounds at the hospital or use new faculty meetings and orientation programs as a way to promote and discuss library services (12,13).

Health professionals and health professional programs use the library, librarians, and library resources in different ways. The nursing library at the University of Toledo, for example, gives a few lectures at the beginning of each semester and works with small groups of students to develop searching skills (14). Public health and physical therapy faculty members are adjusting how they create and talk about searching and using library resources to include apps and the latest technology, which captures the interest of the students and could lead to greater incorporation tools in applied portion of the program (15). At the University of Toledo, students are required to purchase a computer and many purchase iPads. During conversations with students, librarians discuss the available POCs and emphasize how important POCs and the information they provide are for students, particularly during the applied part of the curriculum.

All health professional programs are intense, and the information students must remember and apply can be overwhelming. Additionally, transitions occur when students go from the practical-to-applied curricula of health

professional programs. The varying experiences and skill levels of students make this a challenging time for both the students and the health professionals, who evaluate and supervise them.

By creating videos of specific tasks and requiring students to view them, emergency department doctors discovered an increased proficiency in students' ability to perform the tasks on patients and to remember pertinent patient information (16). The expectation by health professionals is that students can use POCs and effectively search medical databases. When they discover the students are lacking these skills, many suggest students contact the librarian (17). During these individual or group meetings, librarians have the opportunity to discuss searching, library services, and to assist the students in getting access to the available POCs (18–21).

## Application

After speaking with clinical faculty members and reviewing the results of the survey, the author developed a class for new medical students using POCs, patient cases, and group activities. A nursing librarian, a health and human services librarian, and the author taught concurrent sessions in three different classrooms.

At the beginning of the class, each librarian provided an overview of the available library services and products. Then librarians worked with students to identify appropriate vocabulary from patient cases using the identified vocabulary to search two different POCs (UptoDate and DynaMed) and PubMed, a free biomedical literature database available to anyone. Students thought POCs provided the best answers because they could quickly find and understand the available information. This provided the librarians with an opportunity to discuss different types of evidence, quality of information, and strategies for culling through large numbers of results (22,23). All the librarians stressed the value of using POCs over Google and Google Scholar, especially when trying to locate accurate and current information quickly for patients or supervisors.

During the second half of the class, librarians moved about the class to answer questions and troubleshoot searching issues. The students worked in groups on individual patient cases to develop a question and identify important keywords and other appropriate vocabulary. Next, each group found three-to-five pieces of evidence to answer the question they developed. At the end of each session, groups provided a summary of the patient case and made recommendations for treating the patient. Each group also discussed the most challenging aspect of the class and how they planned (individually and as a group) to apply the class concepts throughout the rest of medical school. Table 2 shows a summary of the challenges groups identified.

**Table 2.** What Was the Most Challenging About Today's Activities?

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Finding Appropriate Information, Identifying What to Treat
Conducting Research
Searching Databases
Using UptoDate to locate information
Identifying Key Words and Appropriate Vocabulary
Developing a Question and Locating Supporting Evidence

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Librarians recognized a few different behavior patterns among student groups. If the case was more challenging, students appeared to work more as a team by discussing and debating various approaches to answering the questions. In the groups with easier cases, students would divide the tasks, complete the assignment, and use the available time to search other databases or work on other assignments. Although librarians did check-in with groups and provide tips or probing questions, not all students took the opportunity to ask questions. In [Table 3](#), students shared how they planned to apply the class content in the future.

Despite the initial positive feedback from participants, several students appeared in the medical librarian's office a few months later and asked for assistance with locating and evaluating health information. Although students readily admitted not remembering the content covered in the class, they self-identified the need for assistance and approached the appropriate person.

Many Health Science Librarians do not get scheduled time during the health professional programs to teach and to interact with students. In Fall 2017, the author was fortunate to have such an opportunity and determined that with future groups of new students, it would be important to focus on connecting with students who are interested in conducting summer research projects. These meetings created a chance to assess the students' searching skills, discuss library resources, and mention POCs where appropriate. In addition to meeting with all new faculty members to discuss research interests and library resources, librarians should encourage faculty members to have students schedule appointments with library staff. Additionally, librarians should request to be a member of any committee that oversees the curriculum for first and second year medical students. Just participating on the committee in an *ex officio* capacity should

**Table 3.** How Will You Apply Activities and Skills From Today in the Upcoming Weeks, Months, Years?

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Summary of Student Group Takeaways

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It will be beneficial to quickly search information in the wards during M3 (third year of medical school) and M4 (fourth year of medical school), as well as to assist improving our knowledge during preclinical years.

If we have to do research, we will definitely use these databases to identify current guidelines and problems with treatment and explore new research ideas.

Learning how to develop a question can help narrow down possible searches by focusing the question to specific topics. We learned that sometimes it's helpful to look up general symptoms rather than specific diseases to learn more information.

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open doors to assisting faculty who are conducting research projects, and lead to working more with students during the practical portion of the medical school curriculum (11,24).

## Limitations

This survey and application briefly identifies and discusses some of the issues surrounding POCs. Only POCs identified by librarians received attention in this study.

## Conclusions

Health professionals use POCs to answer patient questions, to read the latest research, and to prescribe the most appropriate medications. Librarians play a pivotal role in connecting health professionals, faculty, staff, and students to the latest resources (25). At the beginning of health professional programs, librarians can introduce POCs to the students. Then, in health science classes, one-on-one appointments, or with small groups, librarians can assist students by re-emphasizing the role POCs play in the career of health professionals and provide the time to setup the POC on a student's mobile phone or tablet. By embracing the challenge of using POCs on tablets and phones, librarians assist students in smoothly transitioning from the practical-to-applied portion of health professional programs and in developing skills, which they will use for a lifetime.

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