Proposal: UpToDate for DUCOM Students and Faculty

Introduction

Following the four years that physicians spend in medical school, diagnostic practices, epidemiological trends, illness presentation, and treatment guidelines continue to evolve. Thus, continuing education is a core tenant of clinical healthcare professionals that is integral to patient safety and health outcomes[1]. Competency using continuing education tools and resources in a clinical setting is a skill that, like all skills, requires practice. Medical school provides an initial opportunity for physicians in training to become comfortable utilizing clinical resources to expand their existing knowledge base and inform clinical decisions. As such, it becomes important for medical students to be exposed to the resources most commonly used in clinical practice, and to use these resources throughout their medical education career.

UpToDate, a subscription service offered by Wolters Kluwer, provides information on disease presentation, diagnostic practices, and treatment guidelines in the form of articles prepared by a collection of more than 3,000 physician contributors[2]. UpToDate is utilized by more than 2 million physicians across more than 44,000 medical institutions[3]. Here, we propose the formal purchase of UpToDate for the Drexel University College of Medicine (DUCOM) students and faculty. We provide information regarding the use of UpToDate in the clinical and medical educational setting and discuss the cost of the resource in the context of its utility both inherently and comparatively, using DynaMed for comparison. Throughout this proposal, we provide support that UpToDate offers a resource necessary for continuing education amongst medical professionals, and we argue that this resource would offer tremendous benefit to the faculty, students, and future patients at DUCOM.

*UpToDate for Medical Universities – Empower Future Clinicians,* from Wolters Kluwer

The Role of UpToDate in Medical Education

Medicine represents one of the most rapidly expanding fields, with some projections arguing that the wealth of medical knowledge available doubles at a rate of less than 3 months[4]. Given the incredible amount of information that physicians are required to reference and consider in the treatment of patients, it becomes necessary to utilize trusted additional resources to aid in information acquisition and application. UpToDate represents one such resource, and one that is utilized by approximately 90% of teaching hospitals in the United States[5]. UpToDate is not only ubiquitous within healthcare, but it has demonstrable benefit in both patient health outcomes and physician trainee scores, as demonstrated by numerous retrospective and cohort studies.

A retrospective study conducted by Isaac, Zheng, and Jha (2012) found that hospitals utilizing UpToDate demonstrated improved performance in three measurements of patient health outcomes. These hospitals reported reduced length of patient hospital stays and significantly reduced risk-adjusted 30-day mortality rate in 3 out of 6 conditions examined[6]. A survey study designed to collect open-ended, qualitative data regarding physician use of UpToDate across healthcare organizations in England found that physicians felt that UpToDate improved their speed and accuracy of care[7]. Of the survey respondents who reported using UpToDate, greater than 90% reported at least one benefit, including a staggering 39% reporting that UpToDate changed their treatment decision. A retrospective study in Japan found that use of UpToDate was significantly correlated to a reduction in diagnostic errors, with the UpToDate physicians demonstrating only 2% diagnostic error compared to a staggering 24% in the group of physicians without UpToDate, resulting in an odds ratio of 15.21[8]. Finally, a study by Bonis and colleagues found that hospitals with access to UpToDate demonstrated significantly better outcomes in risk-adjusted measures of patient safety, complications, and length of patient stay compared to hospitals without UpToDate[9].

In addition to the clear benefits to patient safety and health outcomes when UpToDate is available to clinical staff, UpToDate has an established role in the education of both residents and medical students. A cohort study of internal medicine residents at Mayo Clinic in Rochester, MN, demonstrated that self-reported use of UpToDate was associated with a 3.7% score increase on the Internal Medicine In-Training Examination (IM-ITE) per 100 hours of use[10]. A prospective, observational cohort study of third-year medical students found that the majority of medical students (64%) used UpToDate to prepare for rounds with attending physicians, while 67% reported using UpToDate when admitting patients[11].

Simply put, UpToDate is a widely used resource at both the training and professional level within healthcare, and there is demonstrable data supporting its benefit in improved patient health outcomes. Medical students and faculty at DUCOM would benefit from access to this educational resource, both as a resource for consuming medical information and as a way to improve information seeking skills in a manner that is readily translatable to the real-world clinical setting.
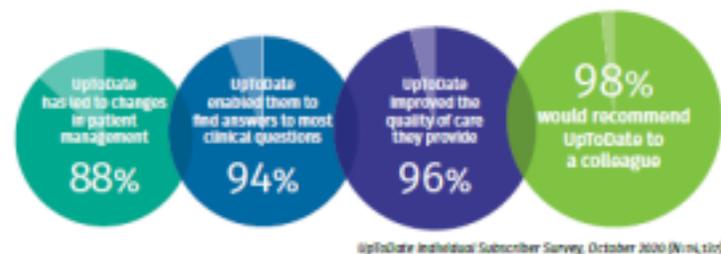
UpToDate for Institutions, from Wolters Kluwer

Cost in Context

Cost in Context: The Breakdown

UpToDate offers individual licensing options as well as institution-wide enterprise licensing options. In this proposal, we argue that DUCOM would most benefit from a program-wide enterprise license, which would provide UpToDate access to every medical student and medical school faculty member. Below, we discuss the cost breakdown of two UpToDate licensing options; provide support for the provision of UpToDate to the Drexel medical school faculty; and propose options to replace current resources with UpToDate as a cost-saving measure, using DynaMed as a representative example.

We propose purchasing an enterprise license of UpToDate, which would provide UpToDate access to medical students in all four years of the program, as well as to all medical school associated faculty. The cost of an enterprise license is dependent on the size of the population that will access the software – costs are determined using the total number of medical students in the third and fourth year of the program ($55 per student) plus the total number of medical school faculty ($430 per staff member). Of note, while the total number of students in the last two years of the program are used to determine licensing cost, UpToDate access is provided to students in all four years of the program.

At DUCOM, the enterprise license total cost would come to approximately $100,000 per year, roughly equivalent to tuition for 1.6 medical students at Drexel[12]. Put another way, the yearly cost of an enterprise license of UpToDate is equivalent to roughly 0.13% of the total tuition paid by the medical students at Drexel each year. This cost is significantly less than the cost of providing individual licenses to each medical student ($219 per student), which would equate to more than $260,000 per year[13], and would not provide access to the medical school faculty.

Cost in Context: Faculty Clinical Experience

Why is it important that we provide UpToDate access to the DUCOM faculty, in addition to the medical students? According to data published by the Association of American Medical Colleges, of the 19,854 full-time faculty at all US medical schools in 2020, only 3,618 (18.2%) were reported to hold a medical degree, while 15,076 (75.9%) were reported to hold a PhD or other doctoral degree[14]. This degree distribution is representative of the DUCOM faculty as well, in which many of the professors teaching students during the preclinical years of the program do not hold medical degrees. While these faculty are certainly all experts in their field, they deserve access to the resources that will enable them to structure their lectures and learning materials in such a way as to consider clinical context and incorporate best clinical practices. UpToDate provides a bridge between the basic science and the clinical application, and providing faculty access would strengthen the foundation provided to our students during the preclinical years.

Department	MD only	PhD or Other Doctoral Degree	MD and PhD or MD and Other Doctoral Degree	Other	Unknown	Total
Basic Sciences						
Anatomy	44	1,215	107	18	72	1,456
Biochemistry	48	2,161	165	20	81	2,475
Microbiology	61	1,692	159	18	70	2,000
Pathology (Basic Science)	683	480	221	31	10	1,425
Pharmacology	66	1,643	145	14	100	1,968
Physiology	39	1,242	116	8	66	1,471
Other Basic Sciences	1,092	6,643	672	371	281	9,059
Subtotal	*2,033*	*15,076*	*1,585*	*480*	*680*	*19,854*

https://www.aamc.org/media/8921/download?attachment

Cost in Context: DynaMed

Finally, while we believe the inherent value in providing UpToDate to DUCOM students and faculty is clearly stated above, we understand that the purchase of new resources often necessitates the cutting of others. We feel that UpToDate is an invaluable resource, and we are willing to advocate for its purchase in place of some of the resources currently offered by Drexel. Here, we provide a comparison between DynaMed, a resource currently offered by Drexel, and UpToDate.

DynaMed operates under a similar mission, serving to provide clinical information to clinical students and healthcare professionals via articles presented in database format[15]. Given their similar format and purpose in medical education, researchers at the University of California San Diego set out to investigate the differences between DynaMed and UpToDate in the decision making process of physician trainees[16]. Using a randomized, crossover trial design, researchers found that, while DynaMed was noninferior to UpToDate on measures of time and accuracy in answering clinical questions, a significant percent of participating physicians reported preference and improved experience with UpToDate compared to DynaMed. Another crossover study conducted at the University of Toronto found that accurate answers were acquired 2.5 minutes faster when physicians used UpToDate compared to DynaMed, and participants reported greater degree of confidence in their answers when using UpToDate[17].

We feel that the value of UpToDate in clinical education cannot be overstated, and we support the use of UpToDate in place of current resources offered by DUCOM. As outlined above, there is empirical evidence supporting improved user experience and shorter time to answers when using UpToDate as compared to DynaMed, and, when taken together with the ubiquitous nature of UpToDate use in other medical schools and clinical care settings across the country, we feel that this helps justify the purchase of UpToDate for DUCOM students and faculty.

Conclusion

Within this document we have provided a brief overview of the UpToDate software, its use in the clinical setting, and numerous studies supporting its use in physician training and benefits in improved patient outcomes. We believe that UpToDate would serve as an invaluable asset in the DUCOM medical student repertoire and would help prepare our students to be resourceful, current, and technologically savvy seekers of the most accurate and up to date medical knowledge available. Drexel University graduates over 300 physicians per year, and we feel that it is our responsibility to help create classes of curious, self-motivated medical students that understand the importance of a continuous and evolving education.

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