Usability Testing of Medical Mobile Apps

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Background:

Technology has played a significant role in the evolution of healthcare industry.[1] Mobile medical applications are one of the many tools that contributed to the progress. The use of such applications with the aim of tracking and improving health outcomes is referred to as mHealth.[2] These applications are increasingly used in clinical practice and education because they facilitate access and use at point of care. A recent survey by d4 (independent United Kingdom-based charity with a focus on mobile technology for healthcare professionals) found that up to 80% of health professionals used smart phones (phone enabled for internet or email use) at their work space. In fact, since its launch in 2008, the Apple App Store (Apple, CA, USA) has seen number of people using medical apps to rising up to more than 1,000,000 from just above 20000.[3] From medical calculators, to clinical decision making tools, to drug interaction services, medical apps can be used for a plethora of reasons throughout patient encounters.

Throughout the early twenty first century, researchers have sought to study benefits of these applications as a way to increase communication, improve access to medical literature, and streamline productivity and clinical workflow.[4] However, the increasing popularity of applications bring with it the challenge of increased complexity. In order to mitigate risks associated with technical innovations to individual and public health, FDA issued a series of regulatory policies in 2013, entitled “Mobile Medical Applications: Guidance for Industry and Food and Drug Administration Staff”. These guidelines do not only define acceptable uses of mobile apps but also outline safety and efficiency requirements.[5]

Motivation

The rapid expansion of mobile medical apps requires researchers to conduct usability testing and then evaluation of the apps in order to regulate the quality and accuracy of the knowledge content within it, and to rule out their efficiency and user satisfaction.[6] Researchers also need to make sure that the use of medical mobile apps are improving the patient provider encounter and patient outcomes in the long-run, reducing the cost of care by reducing unnecessary procedures and tests, and avoiding incorrect diagnoses, incorrect dosing, and eliminating prescribing medications that interact with each other.

UNC Hospitals is a teaching institution that prides itself on patient care and service at the point-of-care. With an abundance of medical errors due to preventable mistakes in health care, UNC hospitals has emphasized safer hand-offs and increased communication over the past few

years. The use of mobile clinical decision support and reference tools for information gathering is not only a contributing factor but must be a priority to increase efficiency and prevent errors at the point-of-care stage.

Our project is testing the usability of medical apps at UNC in mostly in-patient environment for physicians and residents. While our study focuses on two specific applications, our findings can be applied to any tool (mobile or not) with the same functionality.

Selected Apps and Functions:

For better testing of usability, we focused on identifying functions that are most often used. According to the literature, drug calculators and medical references are the two most frequently used functions of mobile medical apps. In addition to this, we found that Epocrates is amongst the eight most preferred apps for drug calculations, while UptoDate is the first on the list of preferred apps for medical references. [7] Another important criterion for selection of apps was its accessibility. In order for us and our diversified user group to be able to complete tasks, we needed apps that came without any subscription charges. Hence, our project aimed to study these two apps and their selected function.

We began with the expectation that our user group will be familiar with these apps and functions. However, we also assumed that they may face difficulty using the drug calculator since it had a lot of numbers to be correctly entered. On the other hand, we thought that users will find the medical reference app very easy to use, especially because it has a generic search bar to begin with.

Target User Group:

The users for the study are UNC care providers and the selection is random and unbiased. Specialties of the health care providers include cardiology, anesthesiology, internal medicine, and pediatrics. Based on our conversations with the user group, Epocrates and UpToDate or similar tools are used on a regular basis (approximately 3-4 times a day). Given the user group's daily roles and vast experience in the clinical care of patients, these systems have high impact for the quick referencing and decision-making required of their jobs.

The users have medical degrees from U.S. accredited universities, some are medical students and some have additional master's degrees in relevant areas such as health administration, clinical informatics, and public health.
Since the care providers were selected randomly for the usability study, our user group is very diverse ranging from non-experienced users to highly experienced users.

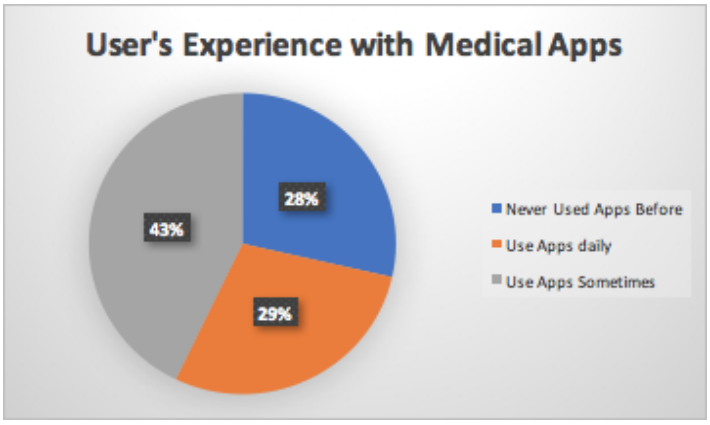


Figure 1. Percentages of users with frequent, some, or no experience with medical applications.

Fig. 1 shows the percentage breakdown of the user's prior experience with the usage of mobile apps. 28% users never used mobile apps in clinical settings and 43% of users mentioned that they have some previous experience with medical apps usage. However, only 29% users mentioned that they use the mobile apps daily and are very familiar with them.
On further breaking up the experience of users with epocrates dose calculation feature and medical reference feature of UpToDate, it is very interesting that all the users were new users for epocrates dose calculation feature. This helped us test the appropriate learnability, usability and capabilities of the mobile app feature. **Fig. 2** shows that 100% of the users never used the epocrates dose calculation feature before.

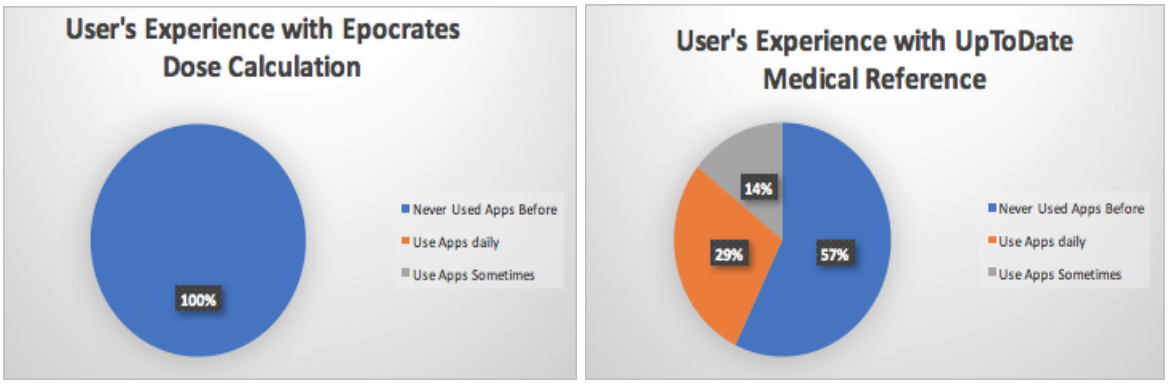


Figure 2. Percentages of users with frequent, some, or no experience with medical applications.

The UpToDate medical reference feature is one of the commonly used feature and we had a diverse experienced user group for the usability testing of that feature. 57% of our users were first time medical reference users, 14% said that they use this feature sometimes and 29% of the users were very frequent users of UpToDate medical reference.

Workflow (Scenarios):

Overview:
Epocrates and UpToDate are common medical applications often used for medical reference and information gathering, as well as patient monitoring.
Scenario 1: ***Pediatric Dose Calculation:***

Evaluate Task: Identify the correct amoxicillin dose for the patient's age and weight

Case subject : 1 year old child
Chief Complaint: Irritability, crying, vomiting, fever, not feeding
Diagnosis: Otitis media
Prescription Drug: Amoxicillin
Child weight: 22 pounds
Dosage: 40 mg/kg/day (divided twice a day/12 hourly)
Suspension Strength: 400 mg/5 mL.
Calculate the dosage for amoxicillin suspension using the dose calculator?

Tasks:

1. Open Epocrates on the iPad
2. Click on the "Drug" Icon for dose calculation
3. Type the drug name in Search Bar
4. Find the "Peds dosing" option from the Sections button
5. Choose the most appropriate diagnosis option from the list (acute otitis media in this scenario)
6. Enter dose amount
7. Enter weight of the child
8. Enter frequency, form of drug and strength in correct format

Scenario 2:

Adult Diagnosis:

A 23 year old, 5 weeks pregnant female (5 foot 4 inches, weighing in at 121 lbs) is at the cardiologist's clinic after being referred by her gynecologist.
Chief Complaint: Tachycardia , arrhythmia, weight loss (14 lbs in 6 months)
Physical Examination:

- HR: 109/min
- BP: 120/78 mmHg
- Temp: 98.7 F
- CBC: normal
- Slightly enlarged thyroid (no nodules detected)

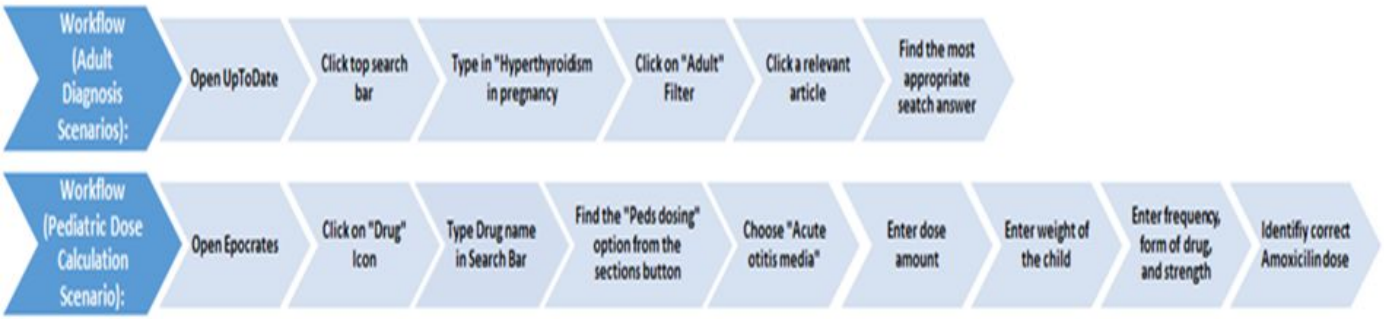
- Warm, moist, smooth skin

Most likely diagnosis: hyperthyroidism
Evaluate Task: What are the two therapies not recommended for pregnant women diagnosed with hyperthyroidism?

Tasks (UpToDate):

1. Click top search bar
2. Type in “hyperthyroidism in pregnancy”
3. Click on the Adult filter.
4. Click an article
5. Find the most relevant search answers

Workflow Diagrams:



Methodology:
Data was collected using a biphasic, single interaction approach. Users were requested to perform predefined scenario tasks. Each user was asked to fill a questionnaire (Qualtrics), for which the responses were recorded and analysed in qualtrics. To ensure uniformity of the tool, they were required to use pre-installed applications (Epocrates and UpToDate) on a tablet. The screen recording application used on the iPad was AirShou, which used the AirPlay Mirroring Apple feature to record screens as the users completed the scenario. The time taken by each user to perform specific task(s) was measured with the help of the application.

Before conducting the desired usability testing, we conducted a pre testing of our scenarios and survey questionnaire. We first tested our scenarios in a pre-test context. we randomly selected 8 UNC health care providers and requested them to complete the scenarios and survey that we designed initially and asked them to provide their valuable feedback.. With the help of pre-test user’s feedbacks and inputs, we modified our usability scenarios and survey questionnaire for the final usability testing.

The scenario and survey data from our defined users was collected in the similar manner and the analysis was compared to the baseline defined by the average time taken by our group members (experts) to complete the tasks.

Survey Quantitative Variables:

The data collected from the qualtrics survey questionnaire was stored and certain calculations are made:

- **Perceived Usefulness**
- **App Reliability**
- **Subjective Learnability**
- **Overall User Satisfaction**

Survey Qualitative Variables:

With the help of observing the users perform the tasks of the scenarios, various other data variables were collected and analyzed:

- **Observations about pathways participants took**
- **Problems experienced**
- **Comments/recommendations**
- **Other positive and negative comments about Healthcare Mobile Apps**
- **Recommendations made**

Scenario Quantitative Variables:

The data collected from the scenario pre-test was stored and certain calculations were made:

- **Total time taken to complete scenario**
- **Time taken to complete each step of scenario**
- **Number of taps per step**

Scenario Qualitative Variables:

With the help of observing the users perform the tasks of the scenarios, questions and points of confusion regarding the application were analysed:

- **Questions**
- **Comments/recommendations**

Results and Data Analysis:

Users' efficiency (Time on Task) was calculated by observing how long the user took to complete a particular task and by comparing it with the set base time-limit for each scenario. The time taken

by the user to complete the scenario was recorded with the help of the time capturing software installed in the tablet. The data analysis categorized the results according to user demographics like user education level (physician/resident) and speciality.

Phase 1: Pre-test Analysis

***Task Times*:** Six health care providers (or providers-in-training) were selected randomly from UNC Hospitals to complete Scenario 1, the pediatric dosing calculation, within Epocrates and the time taken by each user to complete the scenario are presented below:

The steps provided to the users for the scenario 1 pre-test were as follows:

1. Open Epocrates
2. Click on the “Drug” Icon for dose calculation
3. Type and select the drug name in Search Bar
4. Choose the “Peds dosing” option from the list
5. Choose the most appropriate diagnosis option from the list (acute otitis media in this scenario)
6. Enter dose amount
7. Enter weight of the child
8. Enter the frequency of dosage
9. Enter strength of drug
10. Note down the drug dosage

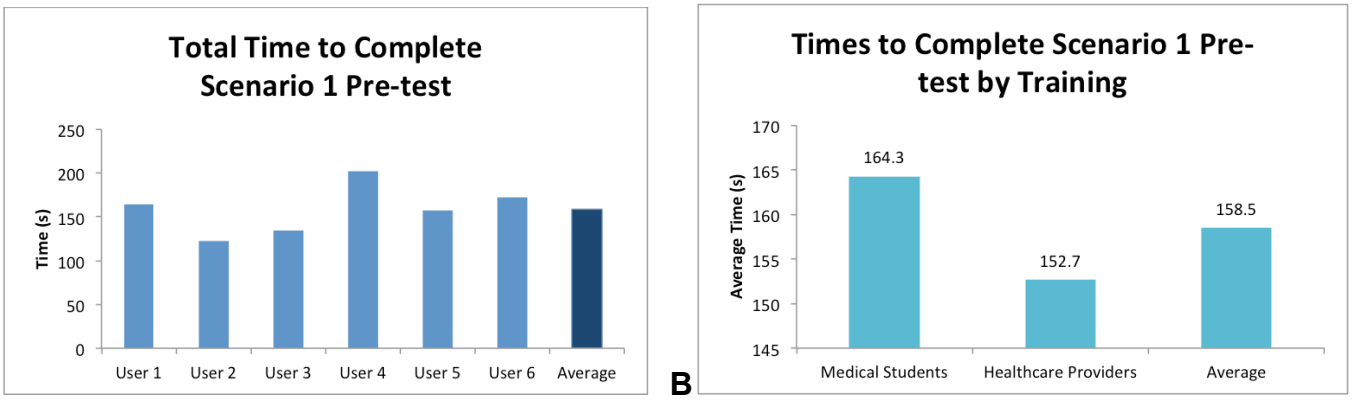


Figure 3. A) The total time for each user to complete the task was calculated, along with the average for the users, and B) The average time to complete each task by amount of medical training was determined.

Based on the data collected from the recorded user scenarios, **Fig. 4A** shows average taps per step and **Fig. 4B** average time per step.

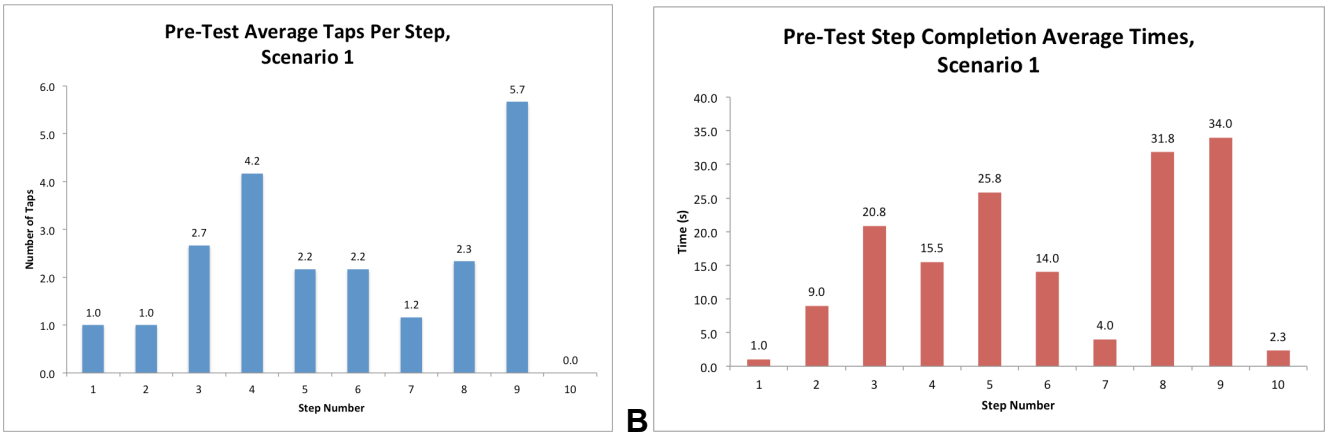


Figure 4. A) The average number of taps per step for each of the users was determined by analyzing the screen recordings as well as B) the average amount of time for step completion.

According to the data in **Fig. 2,** the following steps caused maximum delay in task completion:

5. Choose the most appropriate diagnosis option from the list (acute otitis media in this scenario)
8. Enter the frequency of dosage
9. Enter strength of drug

The following steps required the most taps:

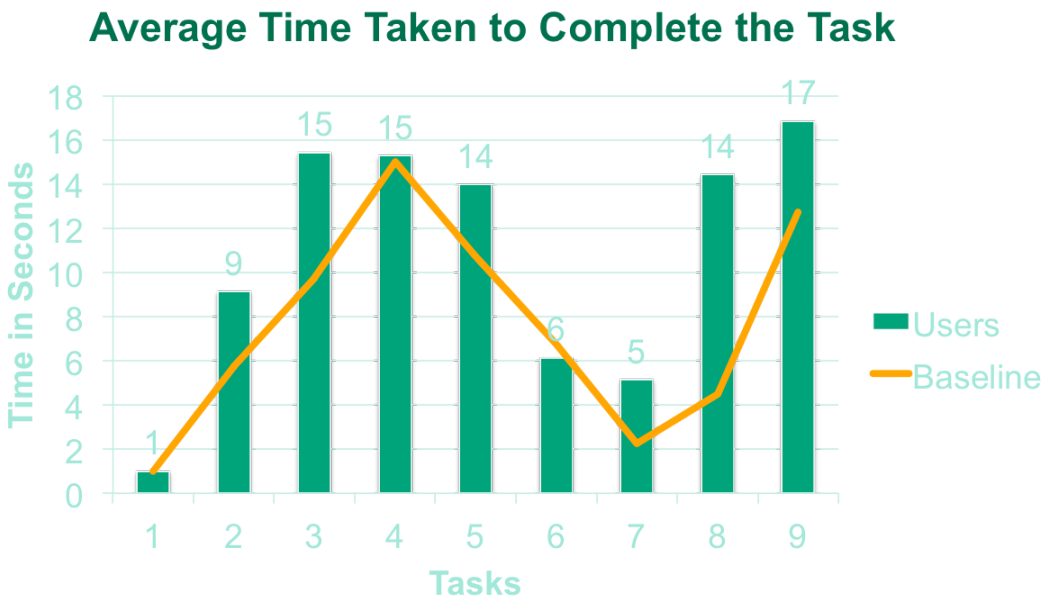
3. Type and select the drug name in Search Bar
4. Choose the "Peds dosing" option from the list
9. Enter strength of drug

Upon further analysis, user comments for Epocrates reflected much hesitation and confusion in searching for and understanding the pediatric dosage (step 3), dose strength (step 9), and frequency (step 8) as it was given in Epocrates. While some of the comments were attributed to the application design itself (e.g. "What does Frequency q mean? Why can't it be per day?" or "I don't know where the Peds Option is"), others were aimed at access to information within the written paragraph-style scenario (e.g. "Okay dose divided twice a day would be 20?" or ""What's the strength?"). In order to eliminate delays caused by scenario design, the scenarios were redesigned in bullet form and steps were clarified for instructions. The UpToDate scenario, based on feedback from the user group, was redesigned to extract a specific piece of medical information, rather than using it to create a differential diagnosis.

Phase 2: Application Design Usability

Once the scenarios were updated and re-created, a more accurate usability test was conducted in the second phase of this study. A baseline of each scenario was created for comparison.

Fig 5 (Epocrates) and **Fig. 6** (UpToDate) show the average times to complete each step of the task as compared to the baselines created by scenario experts.



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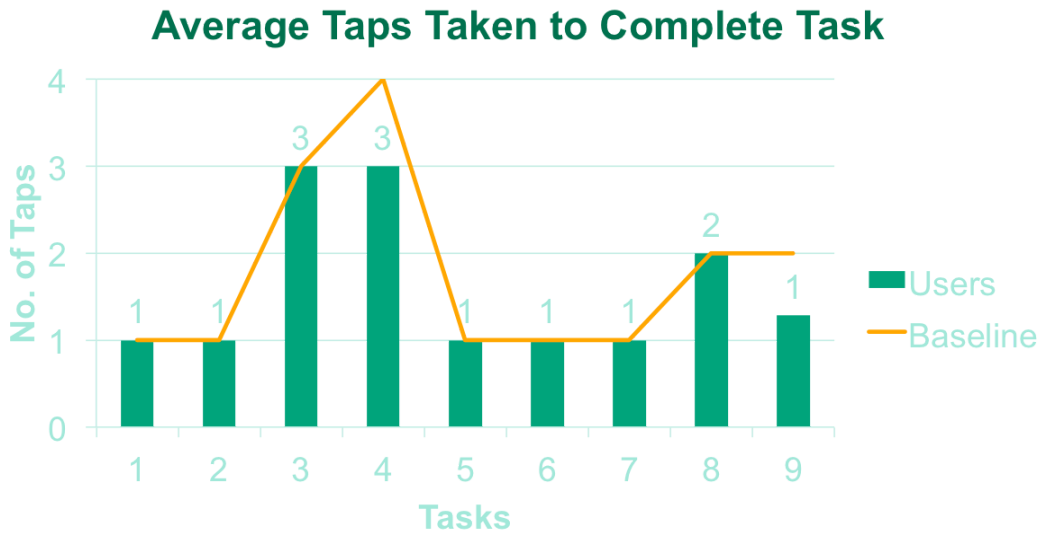

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Figure 5. A) Epocrates The average time for each user to complete each step was calculated and compared to the baseline, and B) the average number of taps to complete each task by amount of medical training was determined and compared to the baseline.

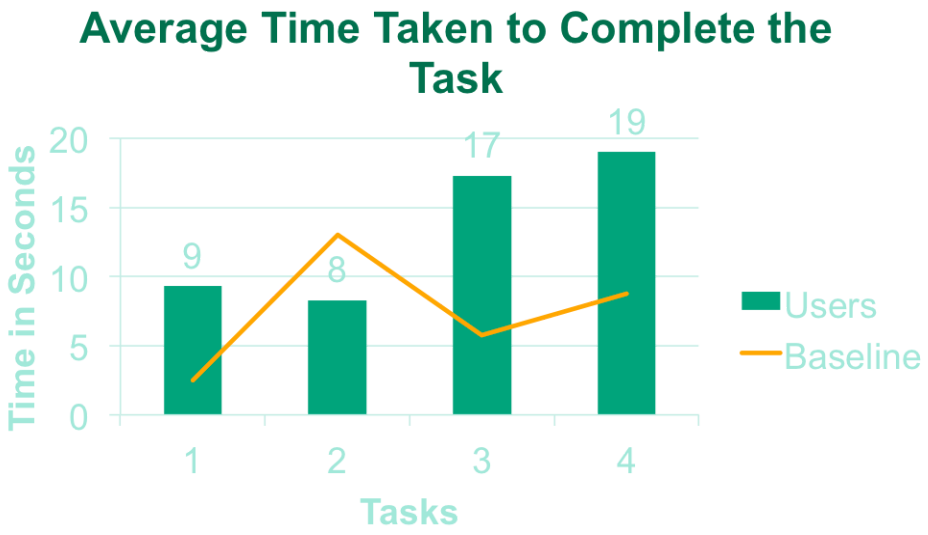
According to the data in **Fig. 5,** the following steps in Epocrates caused maximum delay in task completion based on discrepancy with the baseline:

3. Type and select the drug name in Search Bar
8. Enter the frequency of dosage
9. Enter strength of drug

The following steps required the most taps:

3. Type and select the drug name in Search Bar
4. Choose the "Peds dosing" option from the list

These steps in Epocrates seemed to cause the most confusion and hesitation due to unclear definitions and abbreviations within the dose calculator, as well an inefficient navigation system to reach the required calculator.



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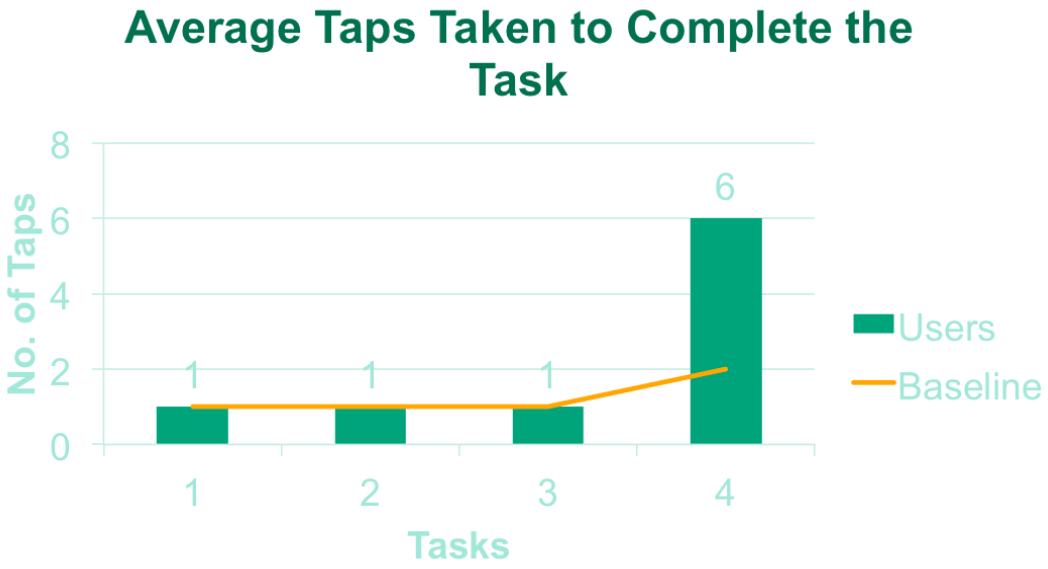

B

Figure 6. A) The average time for each user to complete each step was calculated and compared to the baseline, and B) the average number of taps to complete each task by amount of medical training was determined and compared to the baseline.

According to the data in **Fig. 6,** the following steps caused maximum delay in task completion based on discrepancy with the baseline:

> *3. Choose an article that seems most relevant.*
> *4. Find the two therapies for hyperthyroidism that are not recommended for women. You may use the side navigation if necessary.*

The following step required the most taps:

> *4. Find the two therapies for hyperthyroidism that are not recommended for women. You may use the side navigation if necessary.*

The reason these steps in UpToDate may have caused such a discrepancy in user versus baseline results is inconsistencies in the article features related to the topic. If the user chose a different but related article, the task was much more difficult to complete and required far mor effort.

These results were used to make system recommendations for application design for both UpToDate and Epocrates.

Survey results:

Seven care providers were selected randomly from UNC Hospital and they were requested to complete the dose calculation and medical reference scenarios for epocrates and UpToDate mobile applications respectively. Followed by the scenarios, the care providers were handed over the qualtrics survey and the results were recorded for further analysis. The survey was designed to test the usability, learnability, reliability and satisfaction of the app features and results were recorded separately for dose calculation feature of epocrates and medical reference feature of UpToDate.

Usefulness:

To test the usefulness of the dose calculator and medical references feature of the mobile apps, following points were put forward in the survey:

- App helps me be more effective in my job
- Apps make my job easier
- App saves me time when I use them

The users were asked to rate their experiences for dose calculators and medical references separately and the corresponding results were summarized in the charts.

Although the previous user experience with both the features was different, it was inferred that all users found the apps useful up to some extent.

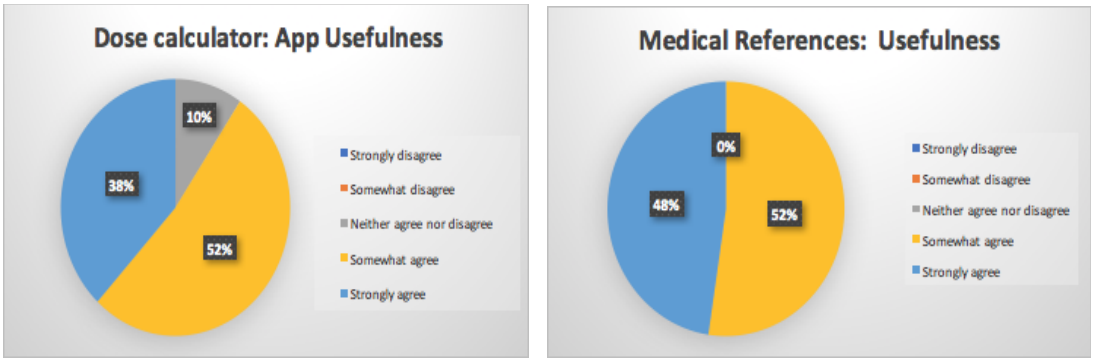

Fig 7. *Usefulness results of Epocrates dose calculator and UpToDate medical reference*

App Capabilities:

To test the reliability or capabilities of the dose calculator and medical references feature of the mobile apps, following points were put forward in the survey:

- The app's speed is appropriate
- I can trust the results
- App is designed for all levels of users

The users rated their experiences for dose calculators and medical references separately and the corresponding results were summarized in the charts.

Although, 72% of the dose calculator users agreed that they can trust the results and were happy with both app features capabilities, there were some users who were not happy with the reliability of the app's result. Since the dose calculator uses numeric entries and deals with numbers and units where users have to be very precise at each step, the reliability and trust was seen less likely as the users thought that there are more chances of errors in such cases. 19% of the users were not very sure with their answers and 9% of users disagree with the reliability of the dose calculators.

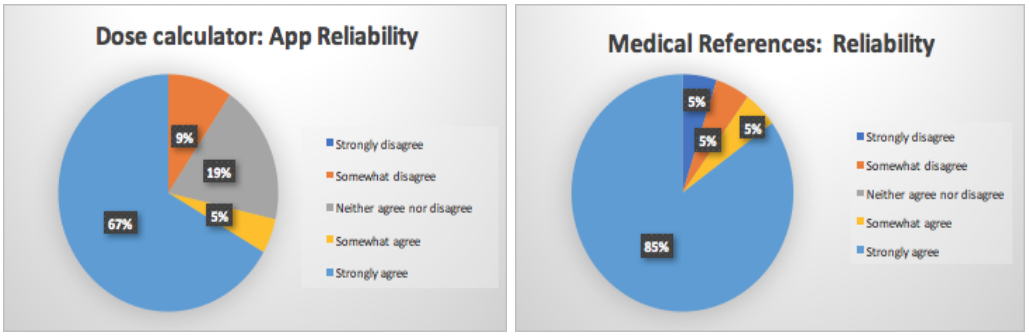

***Fig 8**. App feature reliability results of Epocrates dose calculator and UpToDate medical reference*

Similar to the dose calculator's results, large chunk of users (90%) agreed that the medical reference feature results are reliable and the app is highly capable of providing accurate results. However, small percentage of population (10%) disagreed with the app capabilities.

Ease Of Learnability:

To test the learnability of the dose calculator and medical references feature of the mobile apps, users experience was rated on the basis of following questions in the survey:

- I learned to use the features of the app quickly
- I easily remember how to use this app
- Performing tasks is straightforward

The users were asked to rate their experiences for dose calculators and medical references separately and the corresponding results were summarized in the charts.

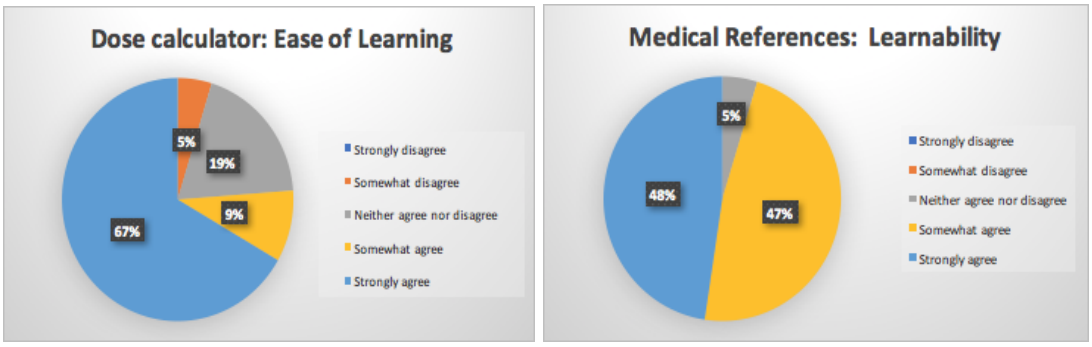

Fig 9. *App feature learnability results of Epocrates dose calculator and UpToDate medical reference*

Although mostly users found the app features easy to learn, 5% of users said the dose calculator usage was not easy for them and it was difficult for them to learn and perform the tasks. Also, 19% of the people were confused and did not agreed or disagreed in the survey results.
In comparison to dose calculators, people found the medical reference usage easy as the search was more generic with the search bar.

Overall Satisfaction:

To test the learnability of the dose calculator and medical references feature of the mobile apps, following questions were put forward in the survey:

- I am satisfied with this mobile app feature
- I would recommend this app to my friends
- The app works the way I want it to work

The users were asked to rate their experiences for dose calculators and medical references separately and the corresponding results were summarized in the charts.

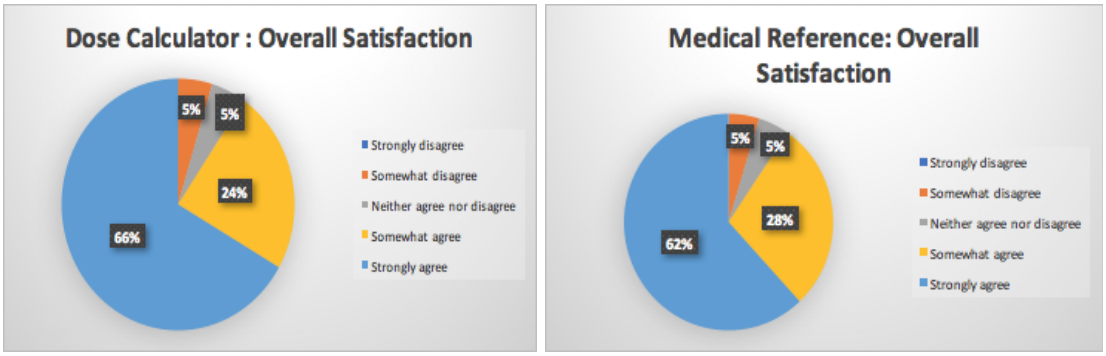

Fig. 10. *User satisfaction results for Epocrates dose calculator and UpToDate medical reference*

Although the user's experience with both the features was different in the beginning , the overall satisfaction rate for both the apps was very high. 90% users agreed that they are very satisfied and happy using the dose calculators and medical reference apps features and around 5% people were somewhat dissatisfied with the apps.

Strengths:

One of the strengths of this project was that our survey accommodated and was applicable to many medical apps that a physician might be using. This allowed for the accurate collection of responses (no one felt like they didn't have a field specific for their answer). Our user group was also random and diverse (different age groups and different specialities) which allowed for a representative sample of medical app users. Another strength was that our case scenarios were general and created keeping in mind the adult/pediatric doctors/ residents from all specialities. Most of the users were able to answer and complete the case scenario tasks. These scenarios were also fine tuned after two testing phases. An initial testing phase provided the feedback that we needed to eliminate the paragraph/ story format and replace it with the more succinct bulleted format that improved user readability. Our data collection method was also robust. The screen capture technology (AirShou) was great and resulted in a method collection strategy that was consistent and captured many data points that we later used in our analysis. Finally, only one person conducted all of the case scenarios/ survey interviews in the hospital and she used the same introductory script each time. In this way each interaction with the user was standardized and eliminated any biases that might have helped a user with their case scenario (and thus skewed results). The same aforementioned person then measured all of the times and taps for each step from AirShou which again, kept measurements consistent.

Weaknesses:

One weakness was that some of our users were never able to complete the medical reference scenario due to lack of time. Those users were in a rush to get back to their clinic duty but if they had had more time, they probably would have been able to complete the task. Another weakness was that the data was collected in UNC hospital's Starbucks which is not the ideal usability testing environment with the crowds and functional purpose of a busy coffee shop. We should have also surveyed whether users had used a dose calculator and a medical reference functionality before our usability study. We had only asked if they had used general medical app functionalities. Another weakness was that some functionalities of the apps were different or not available in the free versions of the mobile apps. It was difficult for us to get access to the paid versions of the medical reference and dose calculator functionalities in our chosen medical apps.

Recommendations:

After conducting the usability testing of the epocrates dose calculation and medical reference feature of UpToDate, we have several application design recommendations. The search bar in UpToDate needs to be enlarged and centered in the mobile app. Several users who took several seconds simply looked for it in the adult diagnosis scenario. The search engine algorithm in UpToDate may also be improved to be more consistent. Even though the cookie/ browser history

was deleted after each user, the search for “hyperthyroidism in pregnancy” produced different articles for some users. This may be a system glitch that must be fixed to ensure that all users are accessing the same medical material in a medical reference. In addition, age abbreviations need to be clarified in the Dose Calculator in Epocrates. There was significant confusion regarding the pediatric age categories of “mo” and “yo”. A few users misread the category of “2mo-5yo” to mean “2 month old - 5 month old” (should read “5 year old”). Finally, the “sections“ button in Epocrates needs to be larger and relabeled.

The following recommendations are for future usability studies for medical mobile apps. Further usability studies will need funding to acquire the full functions of the medical app and its subsequent usability testing. The usability test needs to happen with the full functionalities that users use in their clinical setting in order to get a more accurate idea of how these mobile apps are used and of their usability. We also recommend pre-surveys be conducted to discover the medical app functionalities that are used most frequently by providers. This helps tailor the scenarios and tasks accordingly for usability testing. Usability tests need to be conducted in an appropriate usability environment (preferably point of care in an inpatient setting), not in a Starbucks. Finally, medical mobile apps need to be tested for meeting meaningful use guidelines. Many mobile app functionalities, like the dose calculator have mandated meaningful use guidelines in their EHR counterpart. However, currently these guidelines do not regulate or apply to mobile apps making it even more important for usability testing to test the accuracy, functionality, and usefulness of these mobile app functions.

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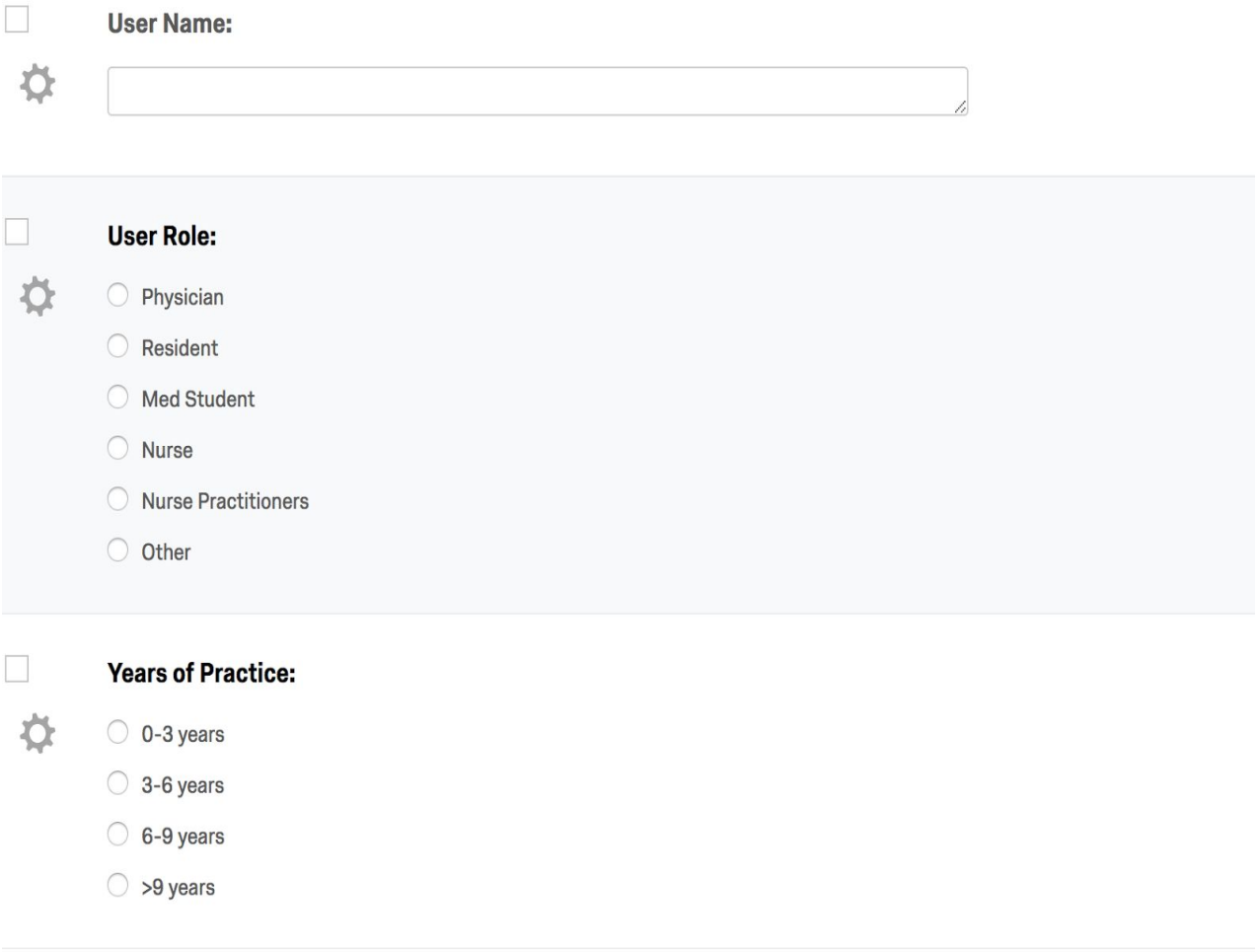
Appendix:

Qualtrics Survey for Mobile App Usability Testing :



	Never Used Apps Before	Use Apps Sometimes	Use Apps daily
Previous experience with Mobile Apps (in general) at point of care	○	○	○

Epocrates App

	Never Used Apps Before	Use Apps Sometimes	Use Apps daily
Previous experience with Epocrates App for dose calculation	○	○	○

UpToDate

	Never Used Apps Before	Use Apps Sometimes	Use Apps daily
Previous experience with UpToDate App for medical refernces	○	○	○

. *Dose Calculator Mobile App Usability Testing Questionnaire:*

Q1. Usefulness of Dose Calculator Apps

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Dose Calculators will help me be more effective in my job	○	○	○	○	○
Dose calculators will make my job easier	○	○	○	○	○
Dose calculator saves me time when I use them	○	○	○	○	○

Q2. Ease of Learning Dose Calculator Apps

Q2. **Ease of Learning Dose Calculator Apps**

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I learned to use dose calculator quickly	○	○	○	○	○
I easily remember how to use dose calculators	○	○	○	○	○
Performing tasks is straightforward	○	○	○	○	○

Q3. **Dose Calculator Capabilities**

Q3. **Dose Calculator Capabilities**

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Dose Calculator app's speed is appropriate	O	O	O	O	O
I can trust the results	O	O	O	O	O
Dose calculator is designed for all levels of users	O	O	O	O	O

Q4. **Overall Satisfaction for Dose Calculator App**

Q4. **Overall Satisfaction for Dose Calculator App**

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I am satisfied with this dose calculator app	○	○	○	○	○
I would recommend this dose calculator app to my friends	○	○	○	○	○
The dose calculator works the way I want it to work	○	○	○	○	○

. ***Medical Reference Mobile App Usability Testing Questionnaire:***

Q5. **Usefulness of Medical Reference Apps**

Q5. **Usefulness of Medical Reference Apps**

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Medical Reference apps will help me be more effective in my job	○	○	○	○	○
Medical Reference apps will make my job easier	○	○	○	○	○
Medical Reference apps saves me time when I use them	○	○	○	○	○

Q6. **Ease of Learning Medical Reference Apps**

Q6. **Ease of Learning Medical Reference Apps**

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I learned to use medical reference apps quickly	○	○	○	○	○
I easily remember how to use medical reference apps	○	○	○	○	○
Performing tasks is straightforward	○	○	○	○	○

Q7. **Medical Reference Capabilities**

Q7. Medical Reference Capabilities

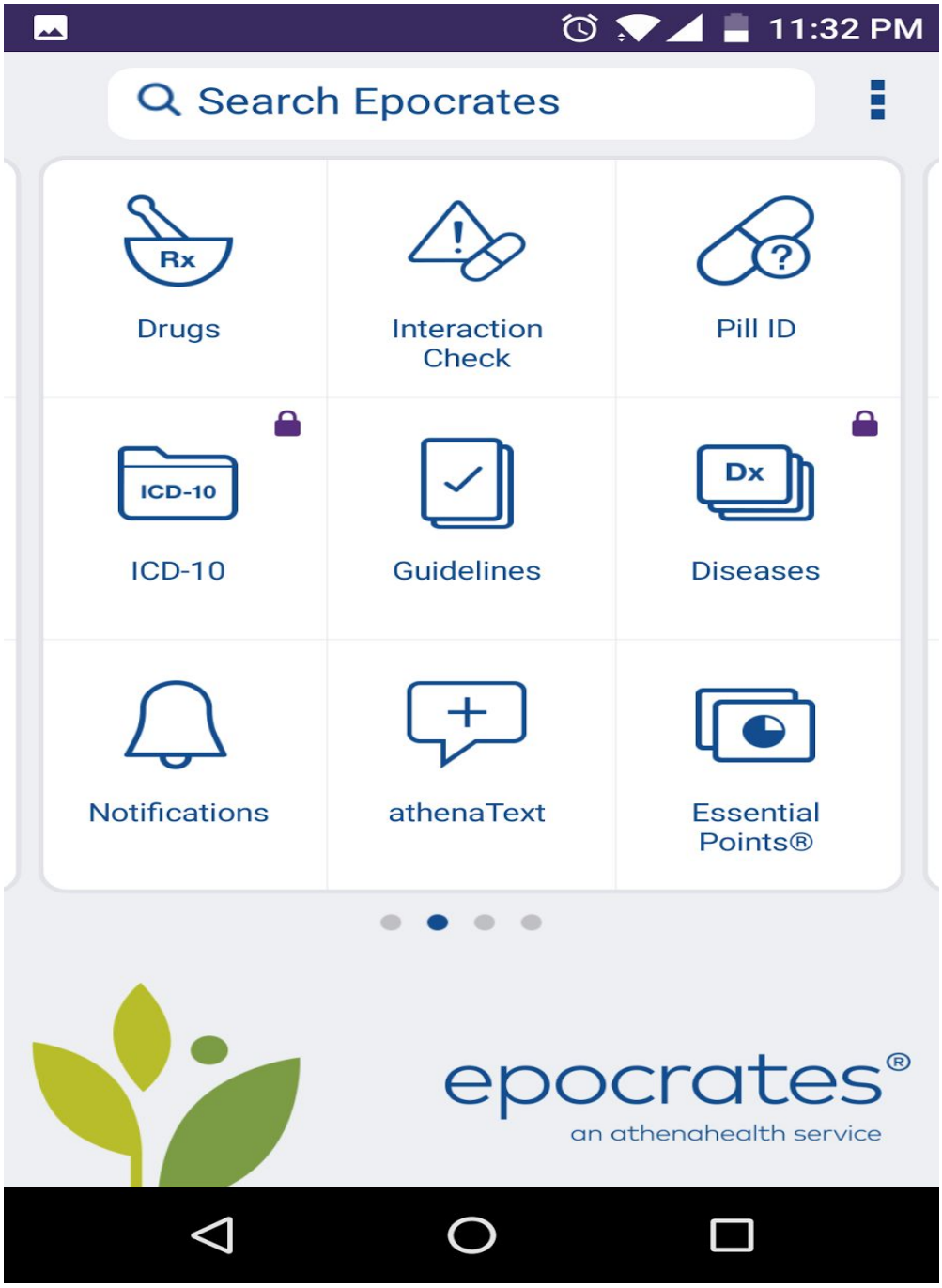
	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Medical Reference app's speed is appropriate	O	O	O	O	O
I can trust the results	O	O	O	O	O
Medical Reference app is designed for all levels of users	O	O	O	O	O

Q8. Overall Satisfaction for Medical References

Overall Satisfaction for Medical References

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I am satisfied with the medical reference app	○	○	○	○	○
I would recommend this medical reference app to my friends	○	○	○	○	○
The medical reference app works the way I want it to work	○	○	○	○	○

Screenshots of mobile app scenario:



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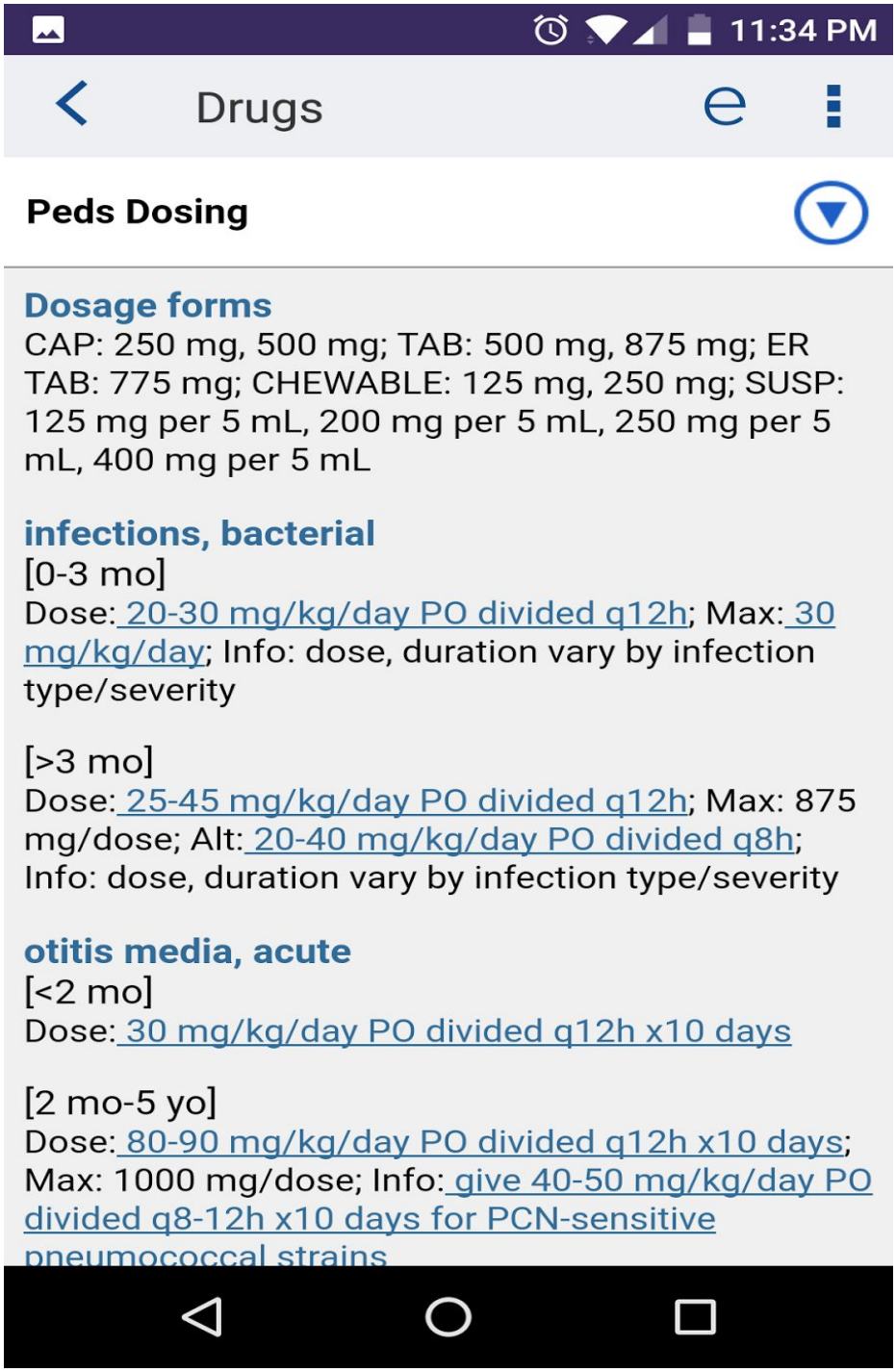
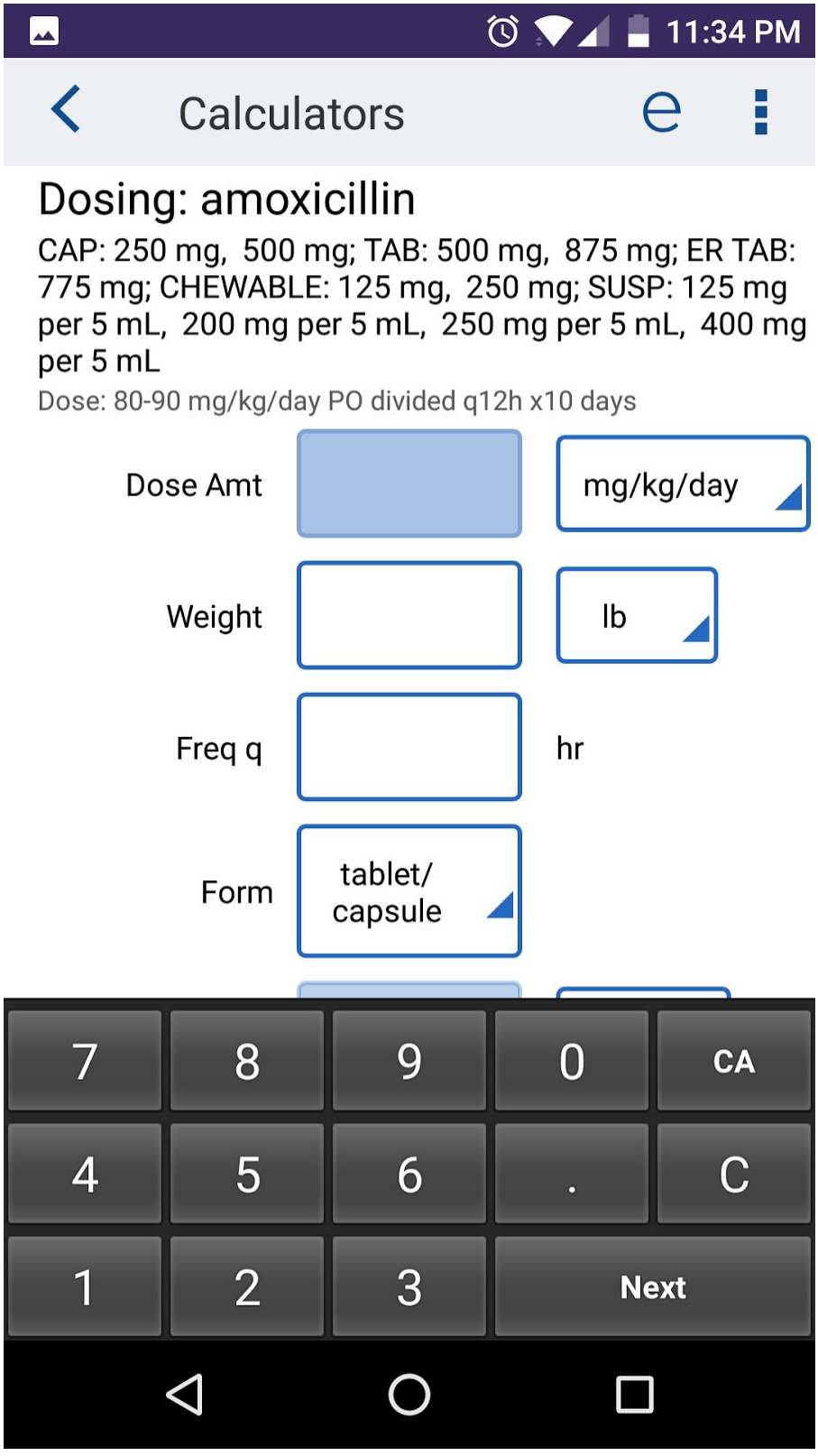

11:34 PM
Drugs
Peds Dosing
Dosage forms
CAP: 250 mg, 500 mg; TAB: 500 mg, 875 mg; ER TAB: 775 mg; CHEWABLE: 125 mg, 250 mg; SUSP: 125 mg per 5 mL, 200 mg per 5 mL, 250 mg per 5 mL, 400 mg per 5 mL
infections, bacterial
[0-3 mo]
Dose: 20-30 mg/kg/day PO divided q12h; Max: 30 mg/kg/day; Info: dose, duration vary by infection type/severity
[>3 mo]
Dose: 25-45 mg/kg/day PO divided q12h; Max: 875 mg/dose; Alt: 20-40 mg/kg/day PO divided q8h; Info: dose, duration vary by infection type/severity
otitis media, acute
[<2 mo]
Dose: 30 mg/kg/day PO divided q12h x10 days
[2 mo-5 yo]
Dose: 80-90 mg/kg/day PO divided q12h x10 days; Max: 1000 mg/dose; Info: give 40-50 mg/kg/day PO divided q8-12h x10 days for PCN-sensitive pneumococcal strains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Calculators
Dosing: amoxicillin
CAP: 250 mg, 500 mg; TAB: 500 mg, 875 mg; ER TAB: 775 mg; CHEWABLE: 125 mg, 250 mg; SUSP: 125 mg per 5 mL, 200 mg per 5 mL, 250 mg per 5 mL, 400 mg per 5 mL
Dose: 80-90 mg/kg/day PO divided q12h x10 days
Dose Amt
mg/kg/day
Weight
lb
Freq q
hr
Form
tablet/ capsule
7
8
9
0
CA
4
5
6
.
C
1
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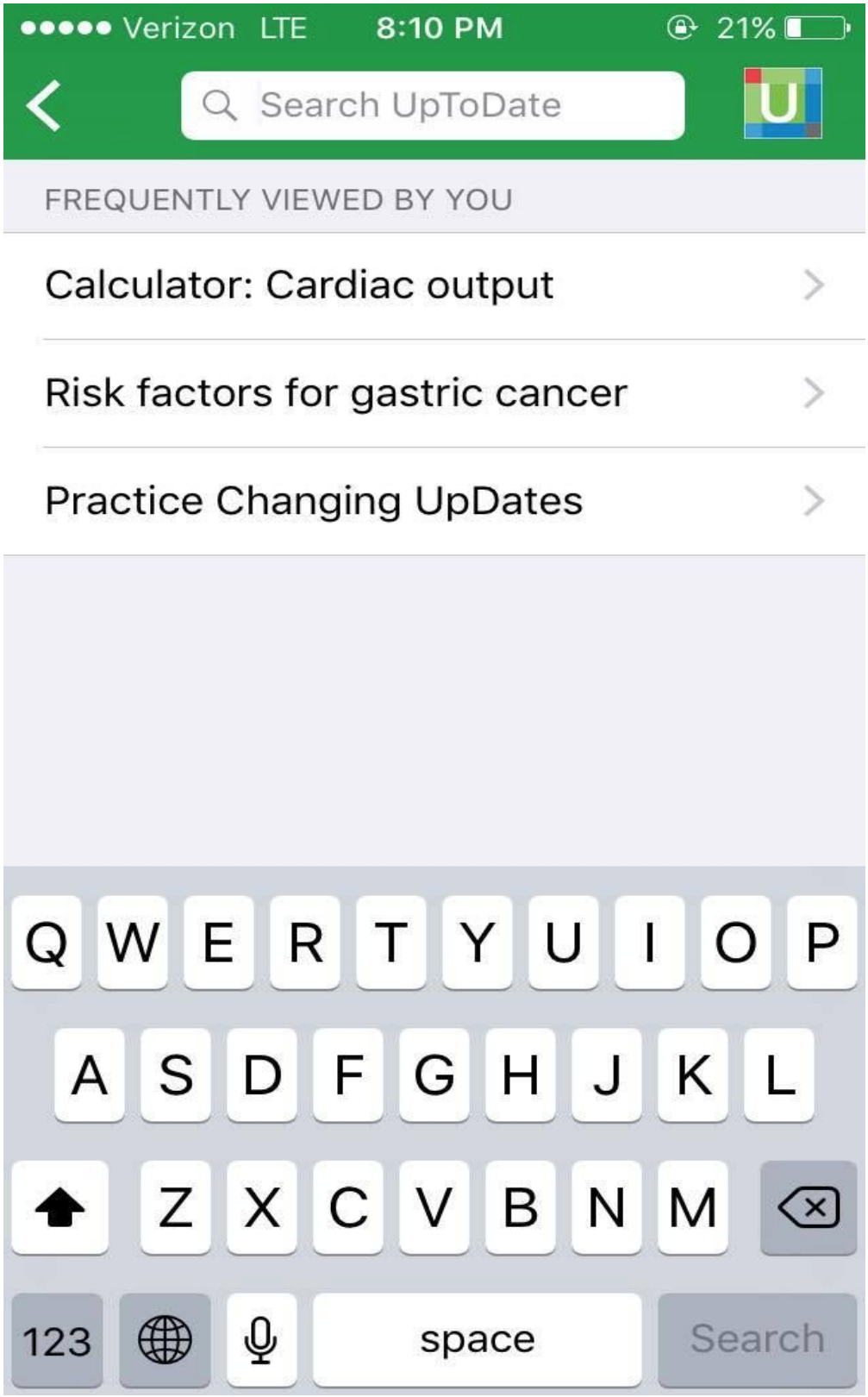
Next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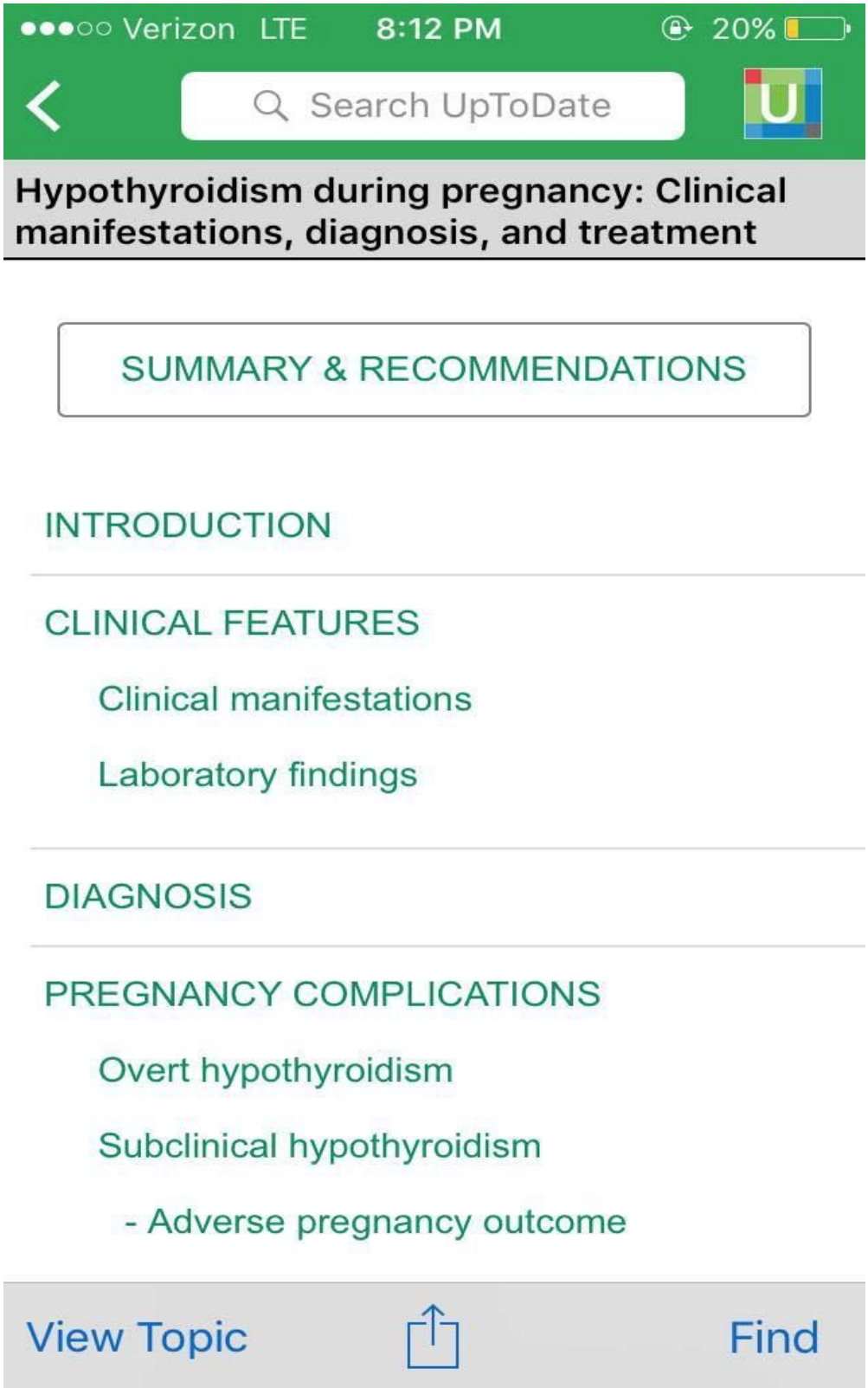
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