Exploring the Impact of Mobile Devices on Format and Presentation of Medical Information Provided by Pharmaceutical Companies

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BACKGROUND

- Medical information departments within pharmaceutical companies provide product-specific information to healthcare professionals (HCPs) in response to unsolicited inquiries.
  - Information can be retrieved from traditional communication channels (e.g. call centers) in addition to newer technologies (e.g. websites and mobile applications).
- Prior research shows that pharmaceutical companies support Medical Information (MI) websites and mobile apps targeted to HCPs that are separate from branded drug websites.[1]
- There is currently no research on the impact of mobile technologies on the presentation and format of information disseminated from pharmaceutical companies.

OBJECTIVES

- **Primary Objective**
  - To assess how mobile technology affects the presentation and format of information provided by a pharmaceutical company to HCPs.
- **Secondary Objectives**
  - To assess if HCPs can access and request medical information on a mobile device that is comparable to traditional methods (i.e., computer).
  - To learn what capabilities HCPs require from mobile medical information services to access and request information on mobile devices.
  - To survey HCPs preferences on the presentation and format of medical information accessed on mobile devices.

METHODS

MI website/mobile app assessment

- Medical information documents available on HCP-specific medical information websites were assessed.
  - Treatment options available from Janssen and other pharmaceutical companies for the top 10 leadings causes of death in the US[2] were identified for the analysis:
    - Diseases of the heart, malignant neoplasms, cerebrovascular disease, diabetes mellitus
- Healthcare professional MI websites identified from the list of therapeutic options were accessed on the following mobile devices:
  - iPhone® (iOS™)
  - iPad® (iOS™)
  - Kindle Fire™ (Android™)
- A standardized rubric compared the functions and appearance of MI websites and apps on mobile devices to those on a computer:
  - Mobile platform
  - Access to information
  - Search capabilities
  - Navigation
  - Format of search results
  - Format of response

Survey

- Based on the assessment results, an internet based survey was developed to collect HCPs' preferences on the delivery, format, and presentation of MI.
- Population
  - HCPs who contacted Janssen's Medical Information Center (MIC) for medical information and requested a hardcopy of the information (fax, e-mail, postal mail).
- Survey announcement placement:
  - Medical information request (MIR) cover sheets across all Janssen products;
  - E-mail body for e-mail MIRs.
- This research was approved by the Rutgers University Institutional Review Board.

RESULTS

MI website/mobile app assessment

- Twenty pharmaceutical and biopharmaceutical companies were identified for analysis.
  - Note: Janssen was included in the analysis.
- Nine HCP medical information websites and one mobile app were identified from these 20 companies.
  - Note: The one mobile app identified was available on the iPhone® and iPad®, but not on the Kindle Fire™.
- One standard response document was attempted to retrieve using the three mobile devices.

RESULTS (con't)

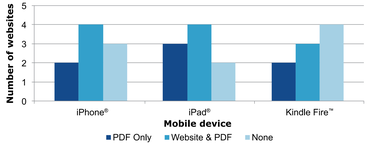
MI website/mobile app assessment

Table 1: Medical information website platforms

	iPhone®			iPad®			Kindle Fire™		
Company	MFW	MW	MA	MFW	MW	MA	MFW	MW	MA
A	✓			✓			✓		
B	✓			✓			✓		
C	✓			✓			✓		
D	✓			✓			✓		
E		✓	✓		✓	✓	✓		
F	✓			✓			✓		
G	✓			✓			✓		
H		✓		✓			✓		
I	✓			✓			✓		

MFW – mobile friendly website; MW – mobile website; MA – mobile app

Figure 1: Format of medical information



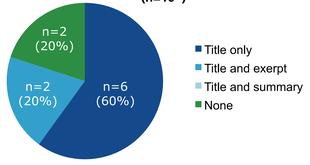
- Information was formatted as "PDF" for the one mobile app.
- None of the websites had "website only" as a format option.

Table 2: Display of medical information

Company	Paragraph	Table	Outline
A	✓		
B	--	--	--
C	✓	✓	
D		✓	
E	✓	✓	
F	✓	✓	
G	--	--	--
H	✓	✓	
I	✓	✓	✓

Companies B and G did not provide response documents for analysis.

Figure 2: Display of search results (n=10*)



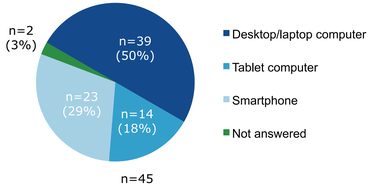
- *Includes 9 websites and 1 mobile app.
- Displays were the same across all devices.
- "Title and summary" were not an option for any website/mobile app.

RESULTS (con't)

Survey

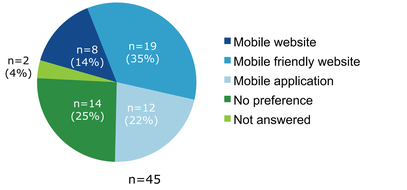
- Timeframe: September 19, 2013 – January 31, 2014
- Total e-mail, print, and/or fax MIR fulfillments: 12,436
- Total survey respondents: 45

Figure 3: What do you currently use to access medical information websites?*



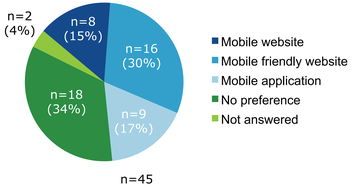
*More than one response could be selected.

Figure 4: What is your preference for obtaining medical information on a smartphone?*



*More than one response could be selected.

Figure 5: What is your preference for obtaining medical information on a tablet computer?*

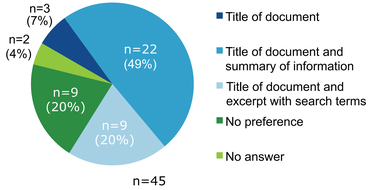


*More than one response could be selected.

RESULTS (con't)

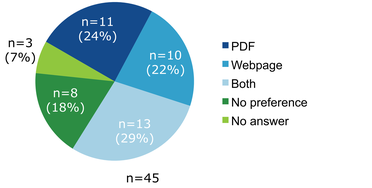
Survey

Figure 6: How would you prefer search results to be displayed for response selection on a mobile device?*



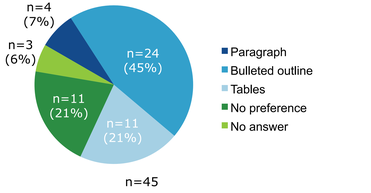
*Only one response could be selected.

Figure 7: How would you prefer information to be formatted when obtained on a mobile device?*



*Only one response could be selected.

Figure 8: How do you prefer medical information to be displayed on a mobile device?*

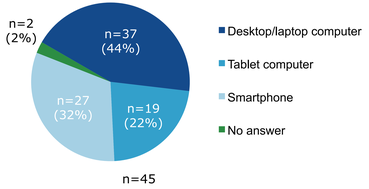


*More than one response could be selected.

RESULTS (con't)

Survey

Figure 9: From what device(s) do you anticipate using to access medical information websites in the future?*



*More than one response could be selected.

DISCUSSION

- HCPs generally prefer a mobile friendly website platform for medical information websites, which coincides with current practices.
- While HCPs generally prefer search results to include a summary of information, this is not currently done.
  - A summary is typically provided in the actual response document, but not with the search results.
- About half of the HCPs surveyed prefer medical information to be formatted as bulleted outlines, but paragraphs and tables are the most frequently used.
- HCPs anticipate that their use of tablet computers and smartphones will increase.

LIMITATIONS

- MI website/mobile app assessment
  - Not every pharmaceutical company was identified, therefore not every MI website and mobile app have been evaluated.
  - The display of information cannot be generalized to all documents because only one standard response document was evaluated per website/mobile app.
- Survey
  - HCPs who received a "verbal only" fulfillment from Janssen's MIC did not receive an invitation to take the survey.
  - HCPs had to manually input the survey link if they received a print or fax fulfillment.
  - The response rate was very low [45/12436 (0.36%)].

CONCLUSIONS

- This is the first study to analyze the formatting and presentation of medical information on mobile devices, and to compare current practices with HCP preferences.
- HCPs generally had no preference for a platform to obtain medical information (mobile website, mobile friendly website, mobile app).
- Medical information should be presented as outlines and tables on both webpages and PDFs.
- The findings of this research may enhance current practices for delivering medical information via mobile technologies to HCPs.
- Future research assessing the format and presentation of information provided by all pharmaceutical companies on additional devices can be explored.

REFERENCES

1. Ross M, Hermes-DeSantis E. WWW what? Evaluation of medical information websites for healthcare professionals provided by the pharmaceutical and biopharmaceutical industry [Poster]. ASHP Midyear Clinical Meeting. Orlando, FL. December 8-12, 2013.
2. National Center for Health Statistics. Health, United States, 2011: With Special Feature on Socioeconomic Status and Health. Hyattsville, MD. 2012.

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