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VA Mobile Discussion Series

Product Effectiveness

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VA
HEALTH
CARE

Defining
EXCELLENCE
in the 21st Century

Product Effectiveness (PE) Overview

- PE, within the VHA Office of Organizational Excellence - Quality, Safety and Value (QSV), performs independent measurement and analysis on product and process improvements from a business value perspective to ensure they are effective, efficient, and valuable to the organization and all of its stakeholders, including Veterans.
- PE provides independent measurement services to support strategic decision making.

How We Support Connected Care

- Develop immediate and long-term measurement and data collection strategies and approaches in collaboration with subject matter experts, project teams, and field staff:
 - ☐ Develop measurement plans, benefit outcomes, measures, and metrics
 - ☐ Evaluate current, transition, and future state programs and projects, as applicable
 - ☐ Conduct comprehensive assessments that include all available data (quantitative/qualitative)
 - ☐ Provide briefings and/or reports on findings
 - ☐ Specific focus on benefits to the enterprise, satisfaction, and lessons learned

Purpose for Assessing

How Do You Know...

- ...your product functions properly?
- ...that it yields the benefits you expect (e.g., impacts to overall productivity, and patient care)?
- ...that end-users are using it effectively?
- ...that the systems are reliable?
- ...that you've maximized your investment?

Assessment Approach

- The scope of PE's involvement in app assessments typically involves:
 - ☐ Design of survey questionnaires
 - ☐ Development of the final content in a web-based survey tool
 - ☐ Drafting email announcements for survey recipients
 - ☐ Sending email with link to participants
 - ☐ Hosting, collecting and monitoring results
 - ☐ Data Analysis
 - ☐ High-level reporting of results



ASSESSMENT OVERVIEW 1: MOBILE HEALTH PROVIDER PROGRAM

Assessment Overview: Mobile Health Provider Program

- The Program distributed Apple iPad tablets to VA care teams to provide them access to patient and operational information beyond the traditional workstation.
 - These devices are intended to provide employees with the ability to communicate and access clinical data while they are mobile, whether inside or outside the medical facility.
 - Initially rolled out to the Tennessee Valley HCS (Nashville/Murfreesboro), Washington DC VAMC and Orlando VAMC, and subsequently rolled out to 15 additional sites for a total of approximately 7,000 iPads across 18 facilities.
- PE conducted an independent evaluation at the request of Connected Care.
 - PE's goals were to understand initial end-user experiences, impacts to overall productivity, and patient care.
- PE's approach included developing a comprehensive measurement plan and collecting data in support of that plan. Data collection included all 18 sites.
 - Data was collected between March 2014 and June 2015 and included a web-based questionnaire (n=1806), in-person and remote structured interviews, and system utilization reports from the AirWatch Mobile Device Management tool.

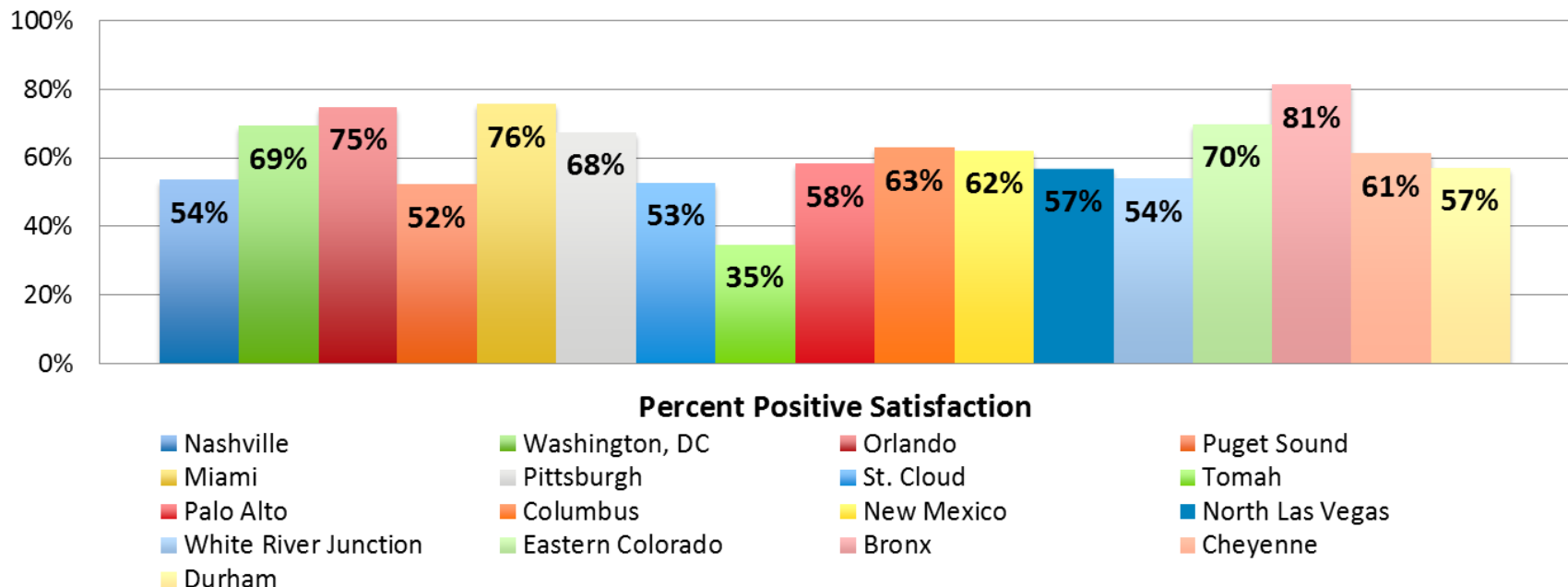
Assessment Overview: Mobile Health Provider Program - iPad Questionnaire

- Based on the metrics identified in the measurement plan, the PE Team, in coordination with Connected Care stakeholders, designed a web-based questionnaire to capture feedback from end-users at the participating facilities.
 - PE coordinated with Connected Care throughout the deployment to ensure the questionnaire remained up to date and relevant based on program changes.
- The questionnaire included the following categories:
 - User Demographics
 - iPad Usability
 - Clinical Impacts
 - Utilization
 - General Satisfaction with the Device and Deployment Process
- PE coordinated with a point of contact from each of the facilities to assist with emailing the questionnaire link directly to end users.
 - The questionnaire was typically administered 1-2 months following the deployment of the iPads at each respective facility and stayed open for approximately three weeks.

Assessment Overview: Mobile Health Provider Program - Key Strengths - Overall Satisfaction

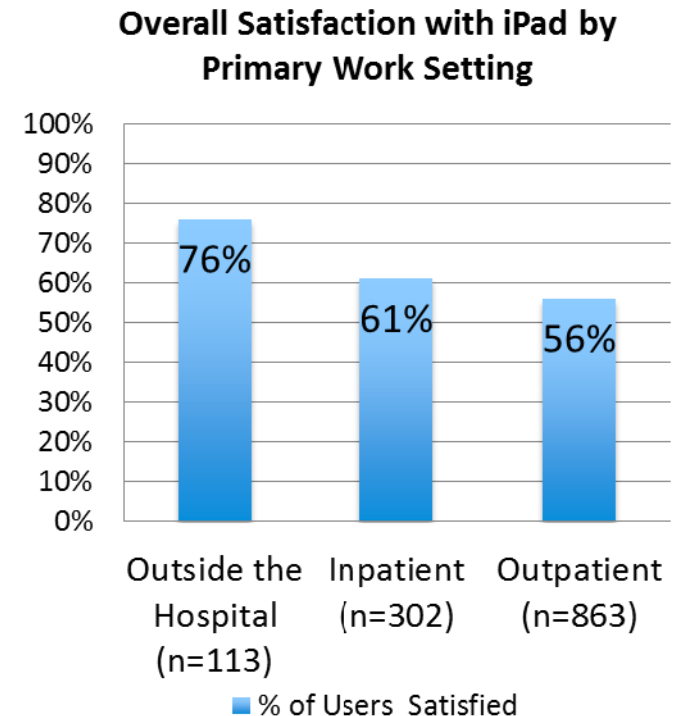
- Overall, 91% of respondents indicated they like that the VA is providing new and innovative tools, 61% of respondents are satisfied with using iPads in their work setting and 64% would recommend an iPad to a colleague for use in a clinical environment.
 - End-users are most enthusiastic when the iPad provides access to information not previously available (primarily VistA/CPRS while mobile or outside of the hospital).
 - Respondents identified challenges with the iPad, including VistA/CPRS access, the need for additional clinical applications and additional training.

Overall Satisfaction with using iPad by Facility



Assessment Overview: Mobile Health Provider Program - Key Strengths – Mobility and Access to Information

- Access to information in a setting where it was previously not available (mobile and/or remote users) was cited as one of the biggest benefits of the iPad.
 - A nurse indicated the iPad helps make *“quick decisions concerning patient movement from an acute bed to an ICU [intensive care unit] bed”* rather than having to locate a workstation.
 - A social worker indicated the iPad allows *“access to patient records from outside of the hospital”* which enables them to *“stay out with patients, increasing the amount of direct patient care time.”*
 - A pharmacist indicated it is *“extremely useful to be able to access CPRS while on daily rounds with the medical teams.”*
- Most respondents indicated they are using the iPads not only in the facility, but also at their homes and elsewhere.
 - 78% of respondents indicated they are using the device at the facility, 75% are using the iPad at home, and 41% are using the device at places other than work and home.



Assessment Overview: Mobile Health Provider Program - Key Strengths – Current Identified iPad Uses

Participants reported a number of helpful uses for the iPads, which generally fall into the following categories and typically included more mobile, or remote users:

- Access to information while **away from the medical facility**, including logging in from home, a patient's home, or non-VA facilities



A home based primary care nurse can access a patient's chart and upcoming appointments (via Citrix), or review online drug references



A hospitalist uses iPad to view CPRS in wards with limited number of workstations and/or COWs

- Access to information **while at the medical facility, but not at a workstation** (e.g., patient rounds, attending meetings, or when no workstations are available)



Clinician uses tablet to obtain information on available beds in the hospital and CLC without having to stop at the nearest PC.

- Using Citrix for **remote access** to not only VistA and CPRS, but other internal applications, for example: BMS, EDIS, VistA Imaging, and the intranet

Assessment Overview: Mobile Health Provider Program - Key Strengths – Current Identified iPad Uses, Continued

- Mobile **access to VA email**, both within and outside of the medical facility



A nurse manager accesses email on his iPad during a meeting.

- **Patient education:** while at bedside, chair side in an outpatient clinic, or at a patient's home



A nurse reviews MD's plan of care with a patient.

- **Continuing education** and research purposes, for example: Talent Management System, reviewing journals, eBooks, and other resources

A provider catches up on training and medical journals at home



- Clinical **resource and reference applications**, including Micromedex and UpToDate

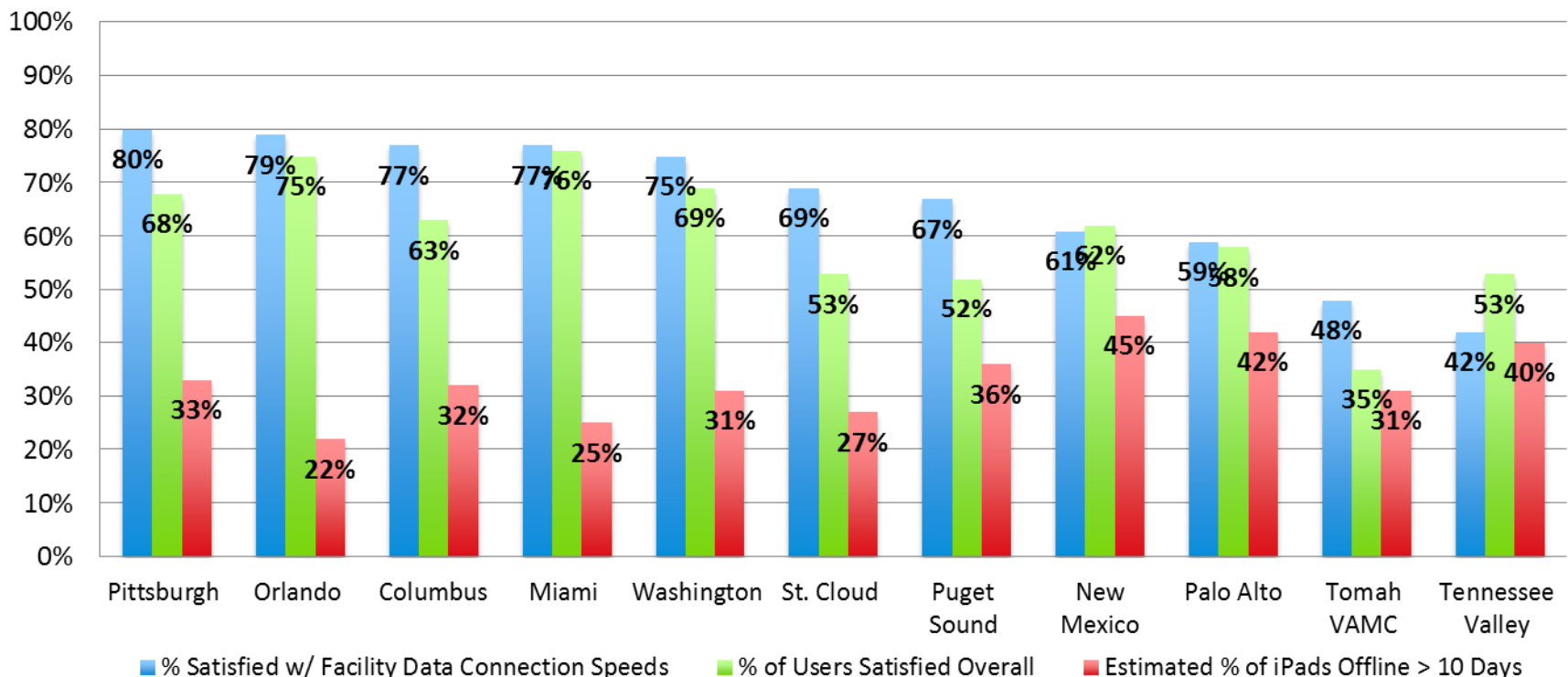


A clinical pharmacist reviews new drug information while on rounds.

Assessment Overview: Mobile Health Provider Program - Utilization: Satisfaction with Data Connectivity at the Facility vs Overall Usage

- In general, satisfaction with the data connectivity at the facility trends with user's overall satisfaction, as well as with increased utilization of the iPads (or shown by fewer iPads offline in the figure below).

Satisfaction with Data Connectivity at the Facility vs Overall Usage



Assessment Overview: Mobile Health Provider Program - Opportunities for Improvement - VistA/CPRS Access

- While 47.3% of respondents are satisfied or very satisfied with their ability to access Vista through Citrix on the iPad, the most often cited frustration was regarding accessing VistA/CPRS through Citrix.
 - Users voiced concern with the multistep login process required for VistA/CPRS.
 - Logins timed out after a very brief time of inactivity, requiring users to repeatedly log back into needed systems.
 - Users in work settings that provide more streamlined access to VistA/CPRS than the iPad preferred to access these applications using their previous methods.
- When respondents were asked about desired additional functionality for the current iPad, they generally suggested the following:
 - Improved ability to access and transcribe in VistA/CPRS.
 - Improved ability to open and review encrypted email.
 - Access to the Microsoft Office Suite, including integration with Lync and calendar.
- Respondents are longing for more clinical functionality on the iPad; specifically, a mobile optimized VistA/CPRS access (i.e., Patient Viewer mobile app).
 - Streamlined access through the Patient Viewer app has the potential to vastly improve the perceived impact, value, and utilization of the iPad to clinical users.



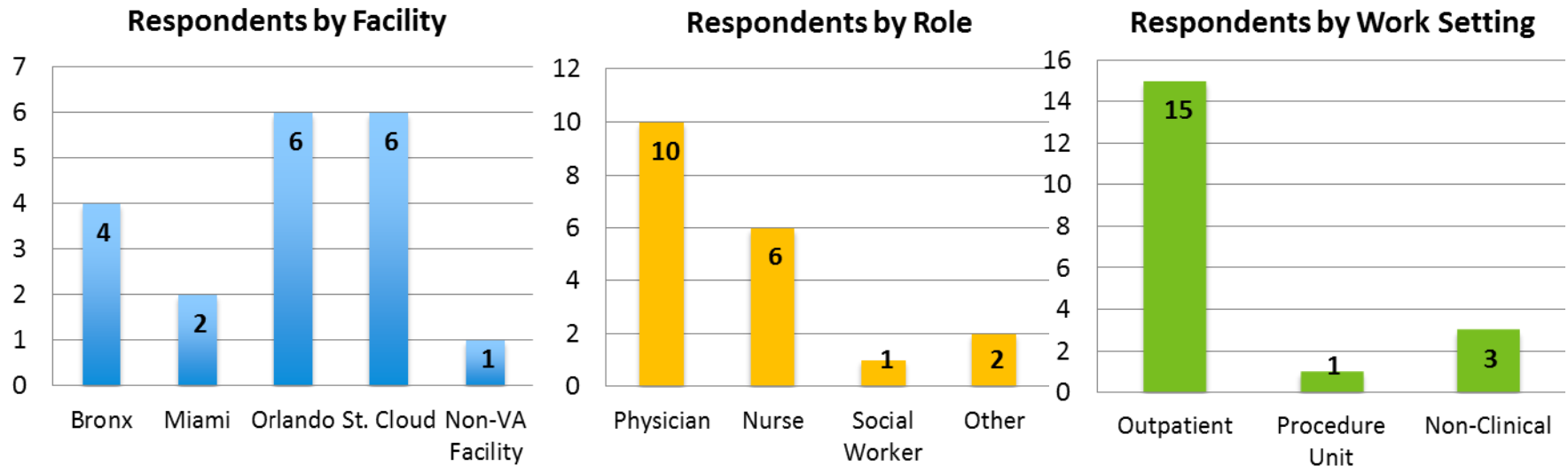
ASSESSMENT OVERVIEW 2: PRECONCEPTION CARE APP

Assessment Overview: Preconception Care

- To help evaluate to the Preconception Care and Caring4Women Veterans Apps during field testing, the Women's Health Services requested PE administer a web-based questionnaire to end users participating in the field testing.
 - PE reviewed and updated previously developed Preconception Care and Caring4Women Veterans App questionnaires, administered a web-based questionnaire to field testers, analyzed the questionnaire data, and developed key findings summary presentations.
 - The questionnaires opened November 6, 2014 and closed December 1, 2014.
- The analysis aims to identify key strengths and areas of improvement for the apps to drive enhancements and modifications to the apps prior to national release.
 - Additionally, the analysis will help inform future evaluations of web and mobile applications released by Connected Care and other program offices.

Respondent Demographics – Preconception Care App

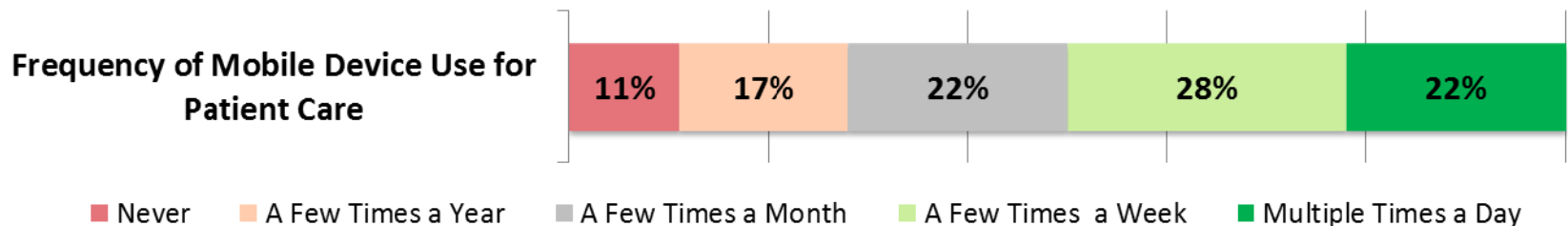
- 19 of an estimated 40 testers responded to the Preconception Care App field test questionnaire, most of whom are physicians and nurses in the outpatient work setting



- Five of the 19 respondents are designated women's health providers, while approximately half of the respondents indicated that less than 25% of their patients are women.
- The majority of respondents tested the app on their computer (74%), while 42% tested on tablets and 16% tested on smartphones (respondents tested on multiple devices)
 - Internet Explorer (47% of respondents) and Safari (42%) were the most used browsers to test the app, while Firefox (11%) and Chrome (5%) were used more infrequently .

Respondent Mobile Device Use – Preconception Care App

- 50% of the respondents use a tablet device to support their patient care activities, while 17% use a smartphone.
 - 39% do not use a mobile device at all to support patient care activities.
- Approximately half of the respondents are using mobile devices to support patient care on a weekly basis, while the remaining respondents are using them a few times a month or less.



Key Findings – Preconception Care App

- In general, respondents are satisfied with the Preconception Care App and would recommend to colleagues.
 - 80% of respondents are satisfied/very satisfied with the app, while 81% would recommend the app to a colleague.
 - The app seems to be less useful to those who indicated they are designated women's health providers, than the respondents who are not designated women's health providers.
 - One tester noted the app "*provide(s) easy to find/read information*" and is "*very helpful.*"
- Field testers noted numerous positive aspects and impacts of using the app.
 - The *Birth Control Methods*, *Concurrent Health Issues*, and the *Lifestyle Factors Checklist* are the most useful sections of the app (the *Men and Preconception* section is the least useful).
 - Three quarters of respondents agree that the app helps them better identify and understand preconception care, connect patients with the appropriate resources, and improve ability to educate patients .
- When asked about areas of improvement, respondents desired flexibility in the app to be able to adjust for specific patient needs or risks, the desire to integrate and/or incorporate parts of the app into CPRS, and requested several areas of information to be added to the app.

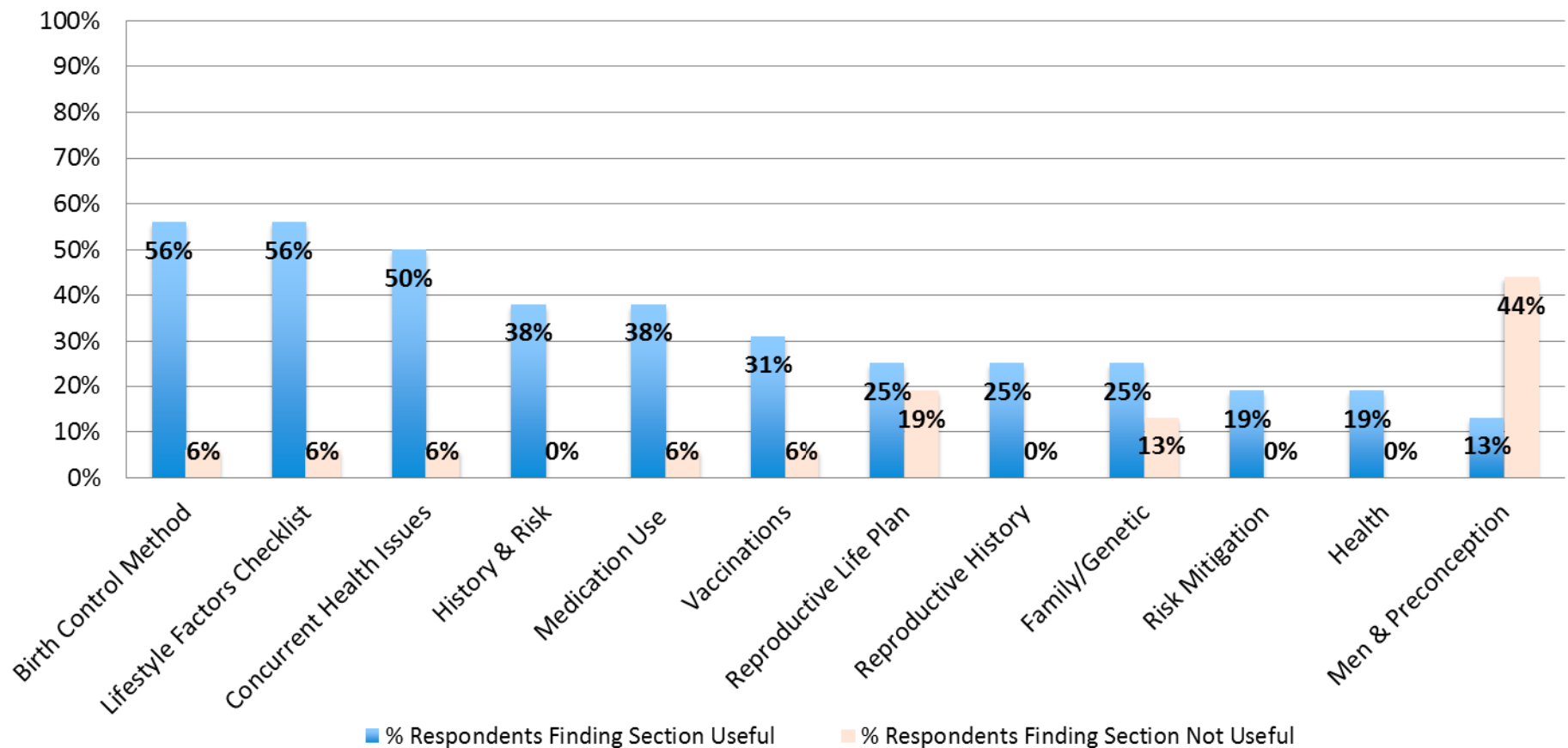
Preconception Care App Ease of Use and Navigation

- Almost all respondents (94%) felt the app is intuitive and easy to use.
 - *“Very easy to navigate for the consumer”*
 - *“Navigation to find type of information you are looking for was good”*
- However, some respondents did highlight areas of improvement related to app navigation.
 - **Reduced Scrolling** – One of the respondents who tested the app on a smartphone suggested reducing the amount of scrolling required to navigate the app and improving the display of information with bullets.
 - **Improved Navigation Buttons** – One respondent noted that some of the navigation buttons seem redundant, as they are extremely close together on several of the app sections.
 - **Improved App Navigation** – One tablet user noted they tried to navigate within the app using the “back” button in a browser, which does not work within the app itself.
- The majority of respondents found the Preconception Care App User Manual and Quick Start Guide to be useful.
 - 87% of respondents found the User Manual useful, while 73% found the Quick Start Guide useful.

Usefulness of Preconception Care App Sections

- Respondents were asked what sections of the app they found most useful and what sections of the app they found the least useful

Most Useful vs. Least Useful App Sections

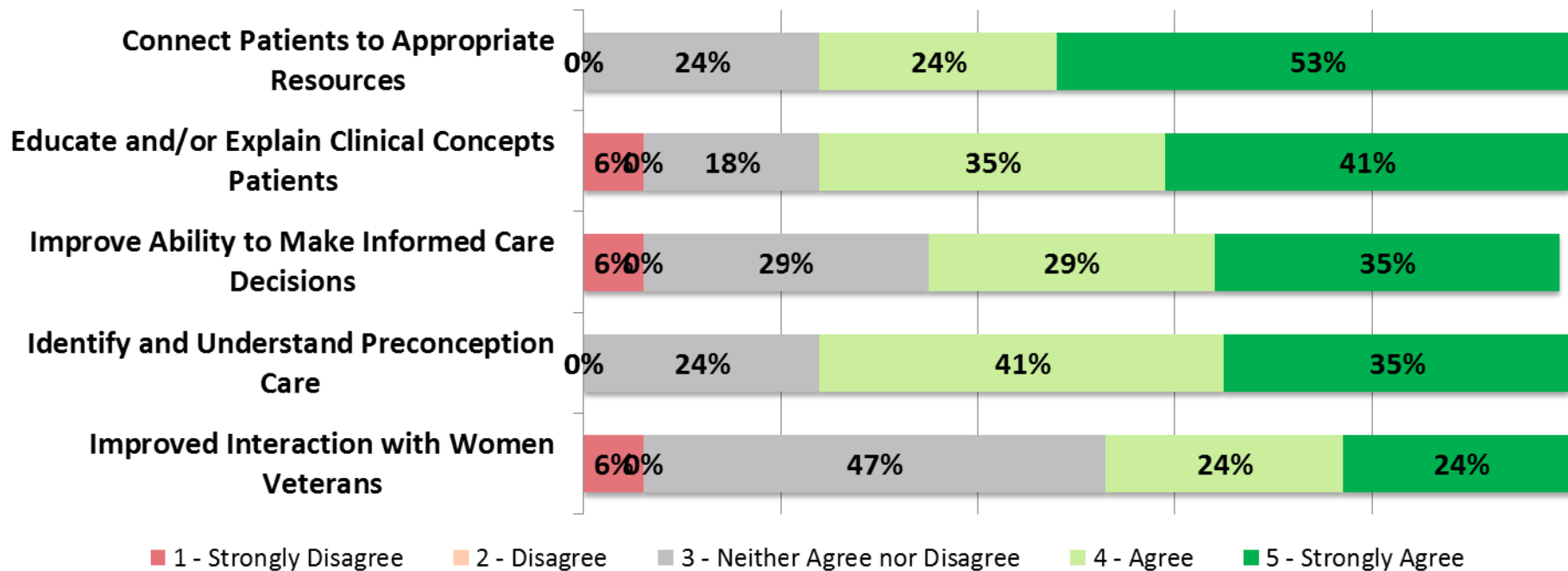


Usefulness of Preconception Care App Sections Cont'd

- Respondents found the following sections to be the most useful:
 - Birth Control Methods
 - *“Very detailed and practical content”*
 - *“Pregnancies per year numbers are valuable for contraceptive effectiveness, like organization of methods into most effective to least effective”*
 - Concurrent Health Issues
 - *“Very good review of illnesses that could be problematic during pregnancy”*
 - *“I liked the global thoughts how all of these interrelate”*
 - Lifestyle Factors Checklist
 - *“This was really my favorite because it can be used for any part of the woman's health care at any age”*
- Respondents found the following sections to be the least useful:
 - Men and Preconception
 - *“Should have more information about resources available for male veterans. Some couples are dual military so it helps to have all the information in one spot”*
 - *“It is rare for men to ask about preconception plans”*
 - Reproductive Life Plan
 - *“I was disappointed in this because it was too generic”*

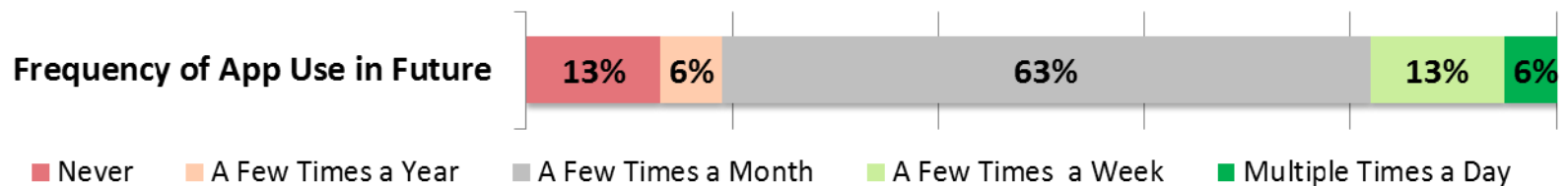
Impact of App on Patient Care Activities

- Respondents found the app to be very informative in communicating key concepts of preconception care to staff, educating and/or explaining clinical concepts to patients, and connecting patients with the appropriate resources



Future Use of the Preconception Care App

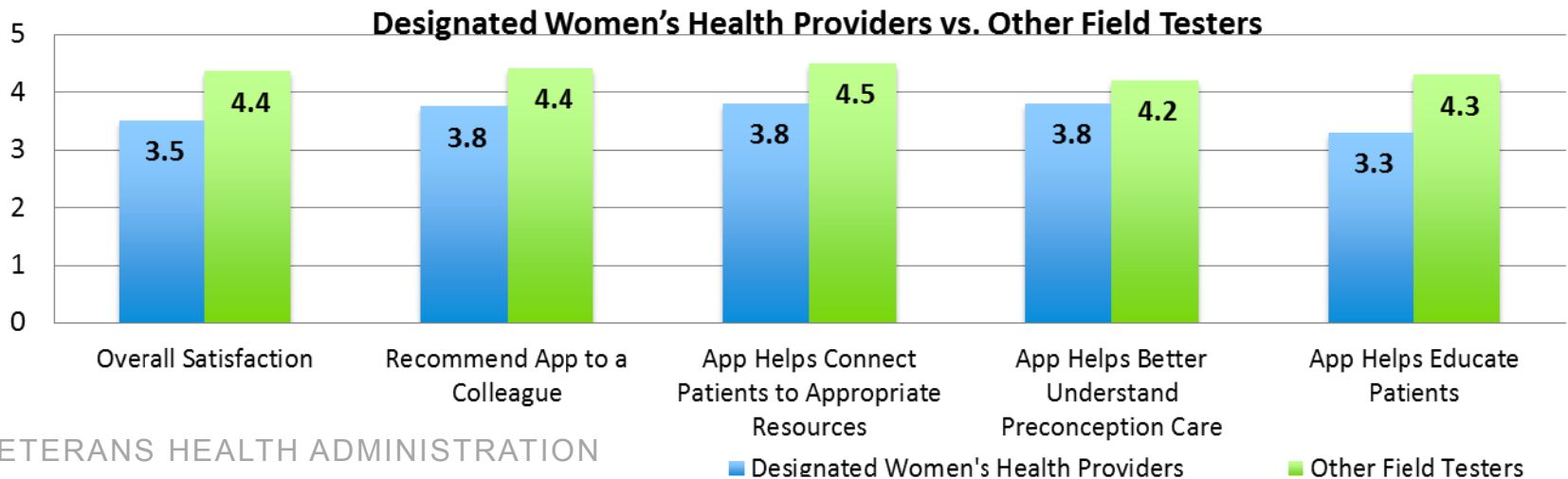
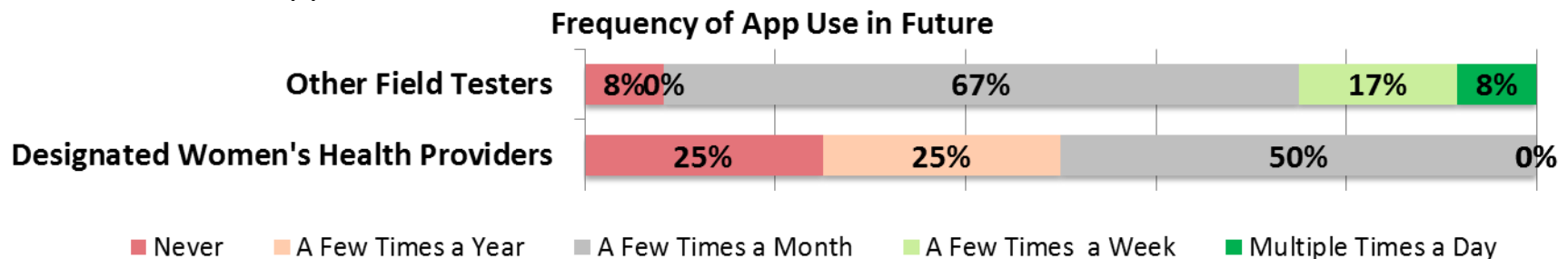
- Over half of the respondents (63%) plan to use the app a few times a month going forward



- For those planning to use the app in the future, three quarters planned to use the app for reference material before or after seeing a patient, while half planned to use the app as self-training education material
 - 75% of Respondents - *As reference material before or after seeing patients*
 - 50% of Respondents - *As self-training education material*
 - 44% of Respondents - *For patient education*
 - 31% of Respondents - *During direct patient care*
 - 6% of Respondents - *During outreach events to promote app for Non-VA providers*

Designated Women's Health Providers vs. Other Field Testers

- The questionnaire data suggests that the Preconception Care App is more useful to non-designated women's health providers than those respondents who identified themselves as designated women's health providers.
 - Designated women's health providers had lower overall satisfaction and less expected future use of the app,



Areas of Improvement

When asked what additional features and/or information they would like to see in the next version of the Preconception Care App, respondents generally requested additional information be included in the app, including the following:

- Respondents desired flexibility in the app to be able to adjust for specific patient needs or risks, as well as the desire to integrate or incorporate sections into CPRS.
 - *“Would really like to see an initial “risk screen” to hone the patient specific information”*
 - *“Would like to integrate into CPRS/patient chart”*
 - *“Can lifestyle factors checklist be formatted for questions to be answered and documented in CPRS?”*
- Respondents also desired modified and/or additional information or resources to be included in the app, including the following free response comment requests:
 - *“More resources for the life resources plan”*
 - *“This app does not include information regarding aspects of in vitro fertilization or intrauterine insemination. In addition, there is no information regarding using adoption as a family planning resource”*
 - *“Left out IVF, ICSI, surrogate pregnancy, etc.”*
 - *“Lactation information”*



QUESTIONNAIRE TOOLKIT

PE Developed a Toolkit to Assist Program Teams

Product Effectiveness Application Survey Framework

- The framework offers basic guidance to program and project teams to rapidly respond to requests for gathering user experiences with VA apps being tested.
 - ❑ Offers basic information about the types of activities involved in app survey support and a basic structure for survey design, analysis, and reporting.
 - ❑ The intent of this framework is to help app development teams plan and execute rapid-turnaround surveys of VA apps using a process that is easily repeatable with focused areas of customization.

Survey Question Bank

- Templates with survey questions are offered for two (2) types of questionnaires:
 - ❑ 1) those that are used to support clinical care and 2) those that support administrative activities. Terms in italics indicate an area to customize to the specific app and engagement under consideration.

Toolkit Overview

- The toolkit provides a guided approach to developing questionnaires

1 Overview

1.1 Product Effectiveness Application Survey Framework

This Product Effectiveness (PE) Application (App) Survey Framework offers basic guidance to the Office of Connected Health to rapidly respond to requests to gather user experiences with VA apps that are being tested. This framework offers basic information about the types of activities involved in app survey support and a basic structure for survey design, analysis, and reporting. The intent of this Framework is to help app development teams plan and execute rapid-turnaround surveys of VA apps using a process that is easily repeatable with focused areas of customization.

1.2 Scope of Surveys

The goal of this framework is to establish repeatable processes and leverage existing documentation to support rapid turn-around App survey support. The scope of PE's involvement in app survey engagements typically involves:

- Design of survey questions
- Development of the final content in a web-based survey tool
- Drafting email announcements for survey recipients
- Sending email with link to participants
- Hosting, collecting and monitoring results
- Data Analysis
- High-level reporting of results

The level of effort to support an app survey is influenced by:

1. The amount of information/documentation available to support the design of questions, and
2. The total number of questions asked (i.e., survey length).

1.3 Assumptions

This approach focuses primarily on the design and development of content, and does not address the logistical support required to send the survey web-links to the participants. Links are typically to the appropriate program/project team for distribution to their desired target audience. This approach also assumes that the population of testers is known and reachable and there is sufficient documentation to inform the design of the survey questions.

2 Activities

Design and development of app surveys include several activities, some of which are supported by templates (denoted with a *). The types of activities to do in support of gathering feedback on apps include:

- **Convene Meetings** – Coordinate with project team members to discuss their information needs and goals from the survey, and known characteristics of the testers. This typically involves an initial meeting and one or more content draft review meetings.
- **Review Background Materials** – Gather and review documentation about the app features, functions, and anticipated flow. At a minimum, sufficient documentation must exist about the features and functions of the app, including the core tasks it is designed to support and sequence of actions.
- **Design Survey Content*** – Draft survey questions that capture:
 - Select demographics
 - Satisfaction with and usage of app features
 - Potential impacts and outcomes from the app
 - Overall satisfaction
- **Develop Survey** – Build and test the survey in a web-based tool and prepare link for distribution.
- **Prepare Communications*** – Draft message content for the project team to use when sharing the survey link.
- **Provide a Link** – Deliver a survey link to the project team.
- **Monitor Responses** – Query web-based tool during the survey fielding period.
- **Analyze Data** – Prepare simple frequencies of responses to each survey item.
- **Summarize findings*** – At survey conclusion, prepare a briefing of highlights that summarizes the data and basic interpretation of the findings.

There is some flexibility in the specific number and scope of activities, depending upon the app itself.

2.1 Tools & Templates

To enhance the speed of responding to requests, a set of templates are offered that contain a "bank" of standard questions:

- Survey question banks
 - Administrative Apps
 - Clinical Apps
- Communications templates
 - Announcements
 - Reminders
- Reporting templates

The content of each template is offered in the following sections and is intended to serve as a starting point to facilitate rapid design and development.

2.2 Survey Question Bank

Templates with survey questions are offered for two (2) types of surveys: 1) those that are used to support clinical care and 2) those that support administrative activities. The following templates offer questions for each type of app. Terms in *italics* indicate an area to customize to the specific app and engagement under consideration.

The Toolkit Provides Sample Questionnaire Topics

<Name of App>

11. Please rate the usefulness of the following <name> App functions? (1=not at all useful; 2=not very useful; 3=unsure; 4=useful; 5=very useful)

<offer a list of core functions that the app supports, such as "searching for X," "sorting results," "filtering results," "downloading results," "Submitting a request," and others>

13a. please briefly explain why the item(s) you rated as "useful" or "very useful"? (Free Response)

12. Please select your level of agreement with the following aspects of the <name> App: (Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree and n/a- I did not use this feature) *the options listed are notional, and the types of items can address the ease of use with specific features, accuracy of information, etc.

- a. The App has an intuitive layout and design.
- b. I was able to adjust the screen view, as needed, to enhance readability.
- c. The navigation was simple to use.
- d. The search results were returned quickly.
- e. It was easy to filter the results.
- f. I was able to successfully download <type> data.
- g. I think the information in the <name> App is an accurate.

14a. Please describe any problems or challenges you experienced with the <name> App: (free response)

13. Please select your level of agreement with the impacts and outcomes of the <name> App: (Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree)

- a. The App has improved my ability to make more informed patient care decisions.
- b. The App has improved my interaction with patients.
- c. The App provides me with information or capabilities that were previously not available to me.
- d. The app provided me with the information when and where I needed it

6. Please select your level of agreement with the following aspects of the <name> App: (Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree add n/a) *the options listed are notional, and the types of items can address the ease of use with specific features, accuracy of information, etc.*
 - a. The App has an intuitive layout and design.
 - b. I was able to easily access the app.
 - c. The navigation was simple to use.
 - d. The app was stable while I was using it.
 - e. It was easy to <name a function; repeat for multiple functions>.

- 6a. Please describe any problems or challenges you experienced with the <name> App and your recommendation to fix the problem. (free response)

7. Please select your level of agreement with the potential impacts and outcomes of the <name> App: (Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree)
 - a. The App can improve my ability to <state an app-specific outcome>.
 - b. The App can improve my interaction with <providers; patients; others>.
 - c. The App provides me with information or capabilities that were previously not available to me.
 - d. The app provided me with more flexibility in <state an app-specific outcome>.

8. Using the <name> App will save a substantial amount of time compared to <state previous method of doing the task the App is designed to support>.
 - a. Strongly Agree
 - b. Agree
 - c. Neither Agree nor Disagree
 - d. Disagree
 - e. Strongly Disagree

9. Overall, how satisfied are you with the <name> App?
 - a. Very Satisfied
 - b. Satisfied
 - c. Neither Satisfied nor Dissatisfied
 - d. Dissatisfied
 - e. Very Dissatisfied

10. I would recommend the <name> App to other <state potential users e.g., Veterans, schedulers, case managers>.
 - a. Strongly Agree
 - b. Agree
 - c. Neither Agree nor Disagree
 - d. Disagree
 - e. Strongly Disagree

11. What features and/or information would you like to see in the next version of this app?
 - a. Free Response

References

- Assessment Toolkit



Assessment
Toolkit

- Maximizing your IT Investment VeHU Session



Maximizing your
IT Investment

Questions

Product Effectiveness Key Points of Contact:

Jennifer Ford – Director

Ferenc Ayer – Program Manager

Please contact Ferenc.Ayer@VA.gov with any questions regarding this presentation.

Thank you!

What future topics would you like to discuss?

Let us know by providing feedback
at the link below:

<https://www.surveymonkey.com/r/TGBWM5S>