



OSEHRA

Open Source Electronic Health Record Alliance

Open Source Technical Support and Working Group Services for VA VistA

**Prioritization Description Document
For VA Open Source Intake Candidates**



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1. Introduction

1.1. Executive Summary

The purpose of this Prioritization Description Document (PDD) is to compile and document the analysis findings for the open source software (OSS) intake candidates identified during the quarter. The candidates reviewed in the third quarter (Q3) document are listed below:

- **bbClear** - open-source framework for rendering more user-friendly health records.
- **Veteran Appointment Notification System (VANS)** - web-based application that enables schedulers to preview, edit, and send appointment letters electronically.
- **Maternity Tracker** - assists the coordination of maternity care between VA and non-VA providers to support optimal care of pregnant Veterans.
- **Complex Orders "Then" Conjunction** - corrects an existing issue within VistA related to start date calculations for complex pharmacy orders.
- **Patient Search Tool** - allows users to search any field, including free text, within a patient's chart.
- **On-the-Fly Alerts** - allows users to generate message-based alerts to improve staff communication and task management.
- **Enhanced Problem List** – implements problem list categories, a “resolved” problem status, and ICD-10 problem code prompts in CPRS.

Including 5 of the 7 the candidates listed above, a total of 12 OSS candidates have been recommended for intake to date. In addition to the seven candidates listed above, three OSS candidates were recommended during the first quarter and four candidates were recommended during the second quarter. All candidates were rated using a high / medium / low scale in the categories of Veteran Experience, Speed to Implement, and Level of Risk.

1.2. Overview

The PDD incorporates findings from the OSS and Product Selection Criteria analysis and the SWOT analysis. The PDD then expands the assessment with additional analysis across multiple areas. A high level business case is outlined for each intake candidate. Ultimately, this document serves to position the candidates for the VA intake assessment process. To facilitate the intake process, suggested Epic statements are included for each candidate. VA uses Epics to define user needs and initiate the project planning phase of the Veteran Focused Integration Process (VIP).

The PDD includes multiple analysis elements for the intake candidates, including the following:

1. Provides a mapping and functional description of open source software features proposed for VA VistA intake as they correlate to defined VA VistA 4 Feature Sets (FS).
2. Elaborates how the alternatives for the same VistA feature set compare to one another.
3. Identifies and estimates the scope of additional development needed to meet VA requirements.
4. Provides supporting technical detail regarding supported and/or required/missing components (such as client and server operating systems, database managers, application program interfaces, etc.).
5. Provides recommendations regarding any required/missing components necessary for full operation of VA VistA that may be addressed through either open source or other channels.
6. Identifies the level of maturity and supportability requirements associated with the intake of the respective open source code.
7. Identifies any licensing implications affecting intake.
8. Identifies risks (technical, operational, programmatic) for each open source alternative.
9. Identifies proposed mitigation strategies for risks associated with VA VistA intake that may affect deployment at VAMCs nation-wide.

2. Approach

Several deliverables converge to create the PDD. The approach to developing this PDD included four main steps:

1. Incorporate the Q3 Gap Analysis findings into the PDD as appropriate
2. Incorporate the Q3 Product Selection Criteria content into the PDD as appropriate
3. Incorporate the SWOT content for each candidate
4. Organize the analysis into a business case summary and sequence:
 - o Overview
 - o Rationale / Summary of Business Case
 - o Fit to Requirements / Benefits
 - o Costs
 - o Risks
 - o Epic Statements

The PDD then summarizes and provides prioritization guidance for all the OSS items recommended to date.

3. Analysis of bbClear

3.1. Overview and Rationale

An overview of the bbClear open source candidate is presented in Table 1.

PDD Element	bbClear
Overview	
Overview of Open Source Intake Candidate	bbClear is an open-source framework for rendering more user-friendly health records. It allows for the creation of a printed or electronic health record that is more helpful for patients, their families, and caregivers. bbClear creates self-contained HTML documents that can parse and display the contents of common XML-formatted health records. bbClear includes a standard formatting theme which may be customized.
Recommendation	
Recommendation	The recommendation for bbClear is to proceed with OSEHRA Certification and consideration for intake.
Rationale	
Rationale / Summary of Business Case	The primary benefit associated with intake of bbClear is an improved patient experience with little to no additional effort required by the provider. It builds upon the data available through Blue Button, but presents it in a way that is more easily understood by the Veteran. The code is a strong technical fit with VistA.
Assessment of Alternatives	The alternative to bbClear is to continue with the text-based patient record available to Veterans as a printed document or electronically through My HealthVet Blue Button. The Blue Button output is a text file format, which can be difficult for patients to navigate and understand, especially as the number of health problems included in the Veteran's record increases.

Table 1. Overview and Rationale

3.2. Fit to Requirements / Benefits

bbClear is evaluated based on the fit to requirements and benefits offered by the candidate in Table 2.

PDD Element	bbClear
Fit to Requirements / Benefits	
Fit with Roadmap	The functionality provided by bbClear is not specifically referenced in the Roadmap, but is also not in conflict with it.
Mapping to Feature Sets	Feature Set 3's "eHMP Development" covers a broad range of requirements that align most closely with the functionality provided by bbClear, including "patient goal management" and "after visit summary/patient education."
Functional Fit with Requirements	bbClear enhances the patient experience by making the patient health record more understandable to the patient, which is of value to Veterans, their families, and caregivers. The added functionality marginally addresses an identified gap (VA's stated desire for an EHR with analytics, cloud, and patient experience capabilities ¹).
Technical / Architectural Fit with VistA	bbClear has a strong technical and architectural fit with VistA as it was built upon the VA developed Blue Button tool. It is dependent on the Python programming language, which is approved for use at VA in the Technical Reference Model (TRM). bbClear's output file can be further customized using the TRM approved tool, Compass. bbClear will require patient data to be in a compatible format (C-CDA or VA-C32 XML). Both C-CDA and C32 are standards-based health summary document formats, used by the VA.
Business Benefits to VA	bbClear enhances the Veteran experience by providing health records in a format that is more easily understood by the patient. It allows health care providers to create a printed or electronic health record that is more patient-friendly than the text-based output available through Blue Button, which may promote patient engagement and satisfaction.

Table 2. Analysis of Fit to Requirements / Benefits

¹ Sullivan, T. (2016, April 14). CIO LaVerne Council says VA needs new EHR with analytics, cloud, patient experience capabilities. Retrieved June 07, 2016, from <http://www.healthcareitnews.com/news/cio-laverne-council-says-va-needs-new-ehr-analytics-cloud-patient-experience-capabilities>

3.3. Costs

An overview of the costs associated with intake of bbClear is presented in Table 3.

PDD Element	bbClear
Costs	
Size and Scope of Any Additional Development	There is no additional development effort required for intake of bbClear. The format of the output file has the ability to be customized, if desired, but would require effort from a technical resource.
Supported and / or Required / Missing Components	bbClear uses the TRM approved Python language. Customization of the output file's format is performed through Compass, which is also approved for use in the TRM.
Recommendations for Required or Missing Components	No current constraints due to required components; the dependent software has been approved for use by VA.
Level of Maturity and Support Requirements	This code has not been reviewed or certified by OSEHRA. The code was released to the open source community via GitHub in 2013. There are some unresolved issues / questions noted on GitHub. No additional supportability or maintenance requirements associated with intake of this code have been identified (see risks).

Table 3. Analysis of Costs

3.4. Risks

The level of risk associated with intake of the bbClear open source candidate is evaluated in Table 4.

PDD Element	bbClear
Risks	
Technical Risks	There is low technical risk associated with intake of this code. bbClear renders existing data in a more user-friendly format, but does not modify data. Code is posted to GitHub for community input and six issues have been logged to date; three are reflecting an open status at this time ² .
Operational Risks	No operational risks specific to implementation of this code have been identified. If the decision were made to offer this code through My Health eVet in conjunction with the Blue Button functionality, Veterans would need to be aware that they are responsible for safeguarding the privacy of their data once it has been downloaded. This risk is not specific to bbClear; the existing documentation describing Blue Button clearly describes this personal responsibility.
Programmatic Risks	There is low programmatic risk associated with intake of this code, however, there is a minor risk related to OSEHRA's ability to certify the code, as supporting documentation and test cases required to conduct OSEHRA certification testing is not available on GitHub.
Licensing Implications and Code Quality	No licensing or copyright issues; copyright © 2013 M. Jackson Wilkinson; licensed under the Apache License 2.0.
Mitigation Strategies	Not applicable given the low level of risk.

Table 4. Analysis of Risks

² Blue-button/bbClear. (n.d.) Issues. Retrieved September 21, 2016, from <https://github.com/blue-button/bbClear/issues>

3.5. Epic Statements

To support funding and agile development requirements, Epic statements for this candidate are provided in Table 5. Formatting and categories are consistent with VA's Epic statement format.

Epic Category	Description
Candidate	bbClear
For <target customers>	Veterans, family members and caregivers
Who <need or opportunity>	need to easily understand and read the Veteran's health record
A <solution>	set of code that augments VistA
That <key benefit>	provides a user-friendly printed or electronic health record that is more helpful for patients, their families, and caregivers
Unlike <primary alternative>	the current health record printout, which is limited and difficult to read
Our solution <does something better – the "why">	provides a more user-friendly health record that better communicates health information to patients, families, and caregivers.
Scope	
Success Criteria <how success will be measured, quantified if possible>	Reduced time for patients, families, and caregivers to understand health record information.
In Scope <features that are in scope>	bbClear adding access through Blue Button output.
Out of Scope <items not needed for this epic>	N/A
Non-Functional Requirements <shall statements for usability, reliability, etc. if applicable>	bbClear shall perform acceptably with printers already on site at VA medical centers.

Table 5. Epic Statements

4. Analysis of VANS

4.1. Overview and Rationale

An overview of the VANS open source candidate is presented in Table 6.

PDD Element	VANS
Overview	
Overview of Open Source Intake Candidate	The Veteran Appointment Notification System (VANS) is a web-based application that enables schedulers to preview, edit, and send appointment letters electronically. With this system, patients receive clear and organized letters with all of their appointment information.
Recommendation	
Recommendation	The recommendation for VANS is to proceed with OSEHRA Certification and consideration for intake.
Rationale	
Rationale / Summary of Business Case	The primary benefit associated with intake of VANS is an increase in Veteran satisfaction throughout the appointment scheduling process. VANS supports improved access to care, which is a significant issue for VA.
Assessment of Alternatives	<p>The alternative to VANS is to continue with the existing paper-based process, which is inefficient and can result in confusion. The OSS Appointment Notification Postcard Letter v4.0 application was recommended for intake during Q1 of this contract, and is currently awaiting funding for intake by VA. That application would improve upon the current process but still offers a paper-based notification letter; alternately, VANS provides an electronic notification letter.</p> <p>An additional alternative to VANS is the “Appointments” functionality currently available through My HealthVet. Veterans with a premium My HealthVet account have the ability to view information related to past and future appointments in a calendar format. Information such as appointment date/time, clinic name, and location are available. Users may elect to receive email reminders for upcoming appointments. This functionality appears to be separate from the notification letters, and patients using this functionality will still receive notification letters. In this respect, VANS appears to augment the “Appointments” functionality currently available through My HealthVet. However, as both the current “Appointments” functionality and VANS are dependent on the use of My HealthVet, they are likely targeting the same patients. Additional analysis is needed to determine whether the appointment notification letter provides substantially more</p>

PDD Element	VANS
	information than the current “Appointments” functionality to justify the incremental cost of implementing VANS.

Table 6. Overview and Rationale

4.2. Fit to Requirements / Benefits

VANS is evaluated based on the fit to requirements as well as benefits offered by the candidate in Table 7.

PDD Element	VANS
Fit to Requirements / Benefits	
Fit with Roadmap	The functionality provided by VANS is not specifically referenced in the Roadmap, but is also not in conflict with it.
Mapping to Feature Sets	Feature Sets 3 and 4 call for improvements in the appointment scheduling process.
Functional Fit with Requirements	VANS modestly addresses the patient experience by helping to streamline access, and help fill an identified gap related to the appointment scheduling process. The current process requires schedulers to physically mail paper appointment letters to the Veteran, with any corrections manually written on the document. Confusion around these changes may result in incomplete or missed appointments, exacerbating existing access to care issues. The time required to mail paper letters needs to be accounted for when scheduling the appointment. Additional delays arise due to incorrect mailing addresses and travel. VANS provides the ability to correct appointment letters and communicate electronically with the Veteran, reducing confusion and improving no-show rates. This enhancement addresses functionality which is currently lacking in VistA.
Technical / Architectural Fit with VistA	VANS has a strong technical and architectural fit with VistA. The VANS utility package was created through an Innovations Project to further automate a specific process, so it is likely there are no significant data-oriented constraints. The code integrates with My HealtheVet and allows appointment letters to be sent from VistA via My HealtheVet Secure Messaging.
Business Benefits to VA	The benefit to VA from the VANS application would be the allowance of appointment notification letters to be sent electronically via My HealtheVet, utilizing the HIPAA-compliant two-way communication portal between the Veteran and their primary care team, which is already established within My HealtheVet. According to the VHA Issue Brief documenting the close-out of the VANS Innovations project, schedulers are currently unable to edit existing appointment letters within VistA, and are also unable to send appointment letters via email. Appointment letters must therefore be printed and physically

PDD Element	VANS
	<p>mailed to the Veteran, with any necessary changes annotated manually on the paper document. As stated in the Issue Brief, "Veterans would frequently come from hundreds of miles away to their medical appointments, often to realize that due to the complicated and confusing pen-and-ink changes to their letters they had missed crucial tests and would have to reschedule to have fasting or hard-to-schedule tests completed to receive a complete examination."</p>

Table 7. Analysis of Fit to Requirements / Benefits

4.3. Costs

An overview of the costs associated with intake of VANS is presented in Table 8.

PDD Element	VANS
Costs	
Size and Scope of Any Additional Development	When the Innovations project was closed out, live testing had not been conducted as the ability to integrate with My HealtheVet was not yet in place. Virtual system testing had been completed using a cloud application test site and fictional patient data. There are some minor errors noted in the test cases posted to GitHub, but those errors would not be considered core functionality. While full testing would need to be conducted prior to implementation, there is no known outstanding development required.
Supported and / or Required / Missing Components	This application requires integration with My HealtheVet.
Recommendations for Required or Missing Components	In the VHA Issue Brief documenting the close-out of this project, the following recommendation was included: “Recommend opening the Medical Domain Web Services (MDWS) portal in My HealtheVet and allow this innovation to move forward to the live testing phase” (refer to Appendix C).
Level of Maturity and Support Requirements	This code has not been reviewed or certified by OSEHRA. Additional analysis is required to determine support requirements as live testing has not been conducted and there has not been a deployment to a production environment.

Table 8. Analysis of Costs

4.4. Risks

The level of risk associated with intake of the VANS open source candidate is evaluated in Table 9.

PDD Element	VANS
Risks	
Technical Risks	A minor technical risk exists related to intake of this code. When the Innovations project was closed out, live testing had not been conducted as the ability to integrate with My Health e Vet was not yet in place. Testing was conducted in the Innovations sandbox and considered successful, but there is a risk that integration issues will be discovered when testing is conducted.
Operational Risks	No operational risks associated with implementation of this code have been identified.
Programmatic Risks	A programmatic risk exists related to the ability to test and integrate with My Health e Vet. Testing with My Health e Vet was not conducted because there were too many other competing demands on My Health e Vet at the time. Although the project was closed out two years ago, there is a risk that there could still be competing demands on My Health e Vet at this time.
Licensing Implications and Code Quality	No licensing or copyright issues; licensed under the Apache License 2.0.
Mitigation Strategies	Fully completed testing will mitigate most of the implementation risks. Prioritization for intake of VANS should provide the My Health e Vet access needed.

Table 9. Analysis of Risks

4.5. Epic Statements

To support funding and agile development requirements, Epic statements for this candidate are provided in Table 10. Formatting and categories are consistent with VA's Epic statement format.

Epic Category	Description
Candidate	VANS
For <target customers>	Veterans
Who <need or opportunity>	need to receive clear, organized appointment letters in a timely manner
A <solution>	web-based application working in conjunction with My HealtheVet
That <key benefit>	enables schedulers to preview, edit, and send appointment letters electronically
Unlike <primary alternative>	the current system which mails letters to the address on file, which can be incorrect or not where the Veteran is when making or attending the appointment, and is unable to edit existing appointment letters
Our solution <does something better – the “why”>	provides an electronic appointment letter that arrives immediately to the Veteran’s My HealtheVet account, which can be more quickly accessed by the Veteran.
Scope	
Success Criteria <how success will be measured, quantified if possible>	Clear and comprehensible appointment information received by the Veteran ahead of an appointment more frequently.
In Scope <features that are in scope>	Appointment letter code and integration with HealtheVet application to send letters.
Out of Scope <items not needed for this epic>	N/A
Non-Functional Requirements <shall statements for usability, reliability, etc. if applicable>	N/A

Table 10. Epic Statements

5. Analysis of Maternity Tracker

5.1. Overview and Rationale

An overview of the Maternity Tracker open source candidate is presented in Table 11.

PDD Element	Maternity Tracker
Overview	
Overview of Open Source Intake Candidate	Maternity Tracker is an enhancement to CPRS/VistA that assists the coordination of maternity care between VA and non-VA providers to support care of pregnant Veterans. Although most maternity care is provided by non-VA providers, pregnant Veterans may require care through the VA for other non-pregnancy related health conditions, resulting in the need for coordination between providers.
Recommendation	
Recommendation	The recommendation for Maternity Tracker is to proceed with OSEHRA Certification and consideration for intake.
Rationale	
Rationale / Summary of Business Case	The primary benefit associated with intake of Maternity Tracker is improved delivery of maternity care for women Veterans, which directly supports a requirement in the VistA 4 Product Roadmap and also supports procedures for maternity care outlined in VHA's Maternity Health Care and Coordination Handbook (VA Handbook 1330.03). This code improves delivery of healthcare specific to pregnant women. Although women Veterans represent a small segment of the total VA patient population, they are the fastest growing group of new users of VA health services, with a significant percentage of these women Veterans being of child-bearing age. ³
Assessment of Alternatives	The alternative to Maternity Tracker is a manual process of coordinating maternity care outside the system. According to the Salt Lake City Maternity Care Coordinator (MCC) involved in the pilot, the current system was a spreadsheet. (This information was provided by the Project Manager involved in this effort.)

Table 11. Overview and Rationale

³ Veterans Health Administration, Office of Women's Health Services. (2012, October 5). VHA Handbook 1330.03, Maternity Health Care and Coordination. Retrieved September 26, 2016, from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2803

5.2. Fit to Requirements / Benefits

Maternity Tracker is evaluated based on the fit to requirements as well as benefits offered by the candidate in Table 12.

PDD Element	Maternity Tracker
Fit to Requirements / Benefits	
Fit with Roadmap	The Maternity Tracker is specifically referenced in the VistA 4 Product Roadmap.
Mapping to Feature Sets	National dissemination of the Maternity Tracker is a requirement in the VistA 4 Product Roadmap Feature Set 4 within the Specialty Clinical Applications / Women's Health area.
Functional Fit with Requirements	This is an Innovations project and it fulfills a Roadmap requirement, so implementation will resolve identified gaps. It also supports procedures described in VHA's Maternity Health Care and Coordination Handbook, including how "coordination of care and information sharing between all providers, including non-VA and VA providers, is critical to patient safety," and that "each facility must ensure seamless coordination of non-VA maternity care with VA care." ⁴
Technical / Architectural Fit with VistA	Maternity Tracker has a strong technical and architectural fit with VistA. There are 4 main components of the Maternity Tracker system: the pregnancy and confirmation prototype, the MCC dashboard, the MCCD exchange document, and the patient portal. This code was developed for VistA, and occupies the VistA namespace DSIO. There are no significant technological constraints at this time.
Business Benefits to VA	The primary benefit associated with intake of Maternity Tracker is improved delivery of maternity care for women Veterans.

Table 12. Analysis of Fit to Requirements / Benefits

⁴ Veterans Health Administration, Office of Women's Health Services. (2012, October 5). VHA Handbook 1330.03, Maternity Health Care and Coordination. Retrieved September 26, 2016, from http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2803

5.3. Costs

An overview of the costs associated with intake of Maternity Tracker is presented in Table 13.

PDD Element	Maternity Tracker
Costs	
Size and Scope of Any Additional Development	Maternity Tracker is functionally stable at this time; there is no known additional development required.
Supported and / or Required / Missing Components	The MCC dashboard utilizes the Direct Messaging application and the Secure Messaging API.
Recommendations for Required or Missing Components	There are no constraints due to required or missing components.
Level of Maturity and Support Requirements	Maternity Tracker has been in production at the Salt Lake City (SLC) Health Care System since May 12, 2015. The Project Manager for this effort reports that user feedback from the pilot site has been very positive. The project will begin a multi-site pilot in October 2016. This code has not been reviewed or certified by OSEHRA.

Table 13. Analysis of Costs

5.4. Risks

The level of risk associated with intake of the Maternity Tracker open source candidate is evaluated in Table 14.

PDD Element	Maternity Tracker
Risks	
Technical Risks	There is likely low technical risk associated with intake of this code. This is a normal Kernel installation and Distribution System (KIDS) install. User feedback received to date from the pilot site has been positive.
Operational Risks	No operational risks associated with implementation of this code have been identified.
Programmatic Risks	A programmatic risk related to continued funding exists for this project. The multi-site pilot phase is funded, but national deployment is not yet funded.
Licensing Implications and Code Quality	No licensing or copyright issues; licensed under the Apache License 2.0.
Mitigation Strategies	Not applicable given the low level of risk.

Table 14. Analysis of Risks

5.5. Epic Statements

To support funding and agile development requirements, Epic statements for this candidate are provided in Table 15. Formatting and categories are consistent with VA's Epic statement format.

Epic Category	Description
Candidate	Maternity Tracker
For <target customers>	Women Veterans
Who <need or opportunity>	need maternity care or care coordination through VA and non-VA hospitals
A <solution>	system consisting of 4 main components: the pregnancy and confirmation prototype, the MCC dashboard, the MCCD exchange document, and the patient portal
That <key benefit>	improves the delivery of maternity care for women Veterans
Unlike <primary alternative>	the current system which lacks a unified system (including maternity care) to follow the care of women Veterans within the VA
Our solution <does something better – the “why”>	provides maternity functionality and supports care coordination.
Scope	
Success Criteria <how success will be measured, quantified if possible>	Improved healthcare for women Veterans (measurement TBD).
In Scope <features that are in scope>	Maternity Tracker code.
Out of Scope <items not needed for this epic>	N/A
Non-Functional Requirements <shall statements for usability, reliability, etc. if applicable>	N/A

Table 15. Epic Statements

6. Analysis of Complex Orders "Then" Conjunction

6.1. Overview and Rationale

An overview of the Complex Orders "Then" Conjunction open source candidate is presented in Table 16.

PDD Element	Complex Orders "Then" Conjunction
Overview	
Overview of Open Source Intake Candidate	<p>The Complex Orders "Then" Conjunction code corrects a known error. Within the existing VistA system, a known issue exists related to complex pharmacy orders. When an order is entered with an "and" conjunction, followed by a "then" conjunction, the start dates calculate correctly for the "and" portion, but calculate incorrectly for the "then" portion of the order. There is no opportunity for the prescribing doctor to adjust or correct the dates when entering the order, so pharmacists must manually correct them.</p>
Recommendation	
Recommendation	<p>The recommendation is to put Complex Orders "Then" Conjunction on hold until code becomes available as open source, then proceed with OSEHRA Certification and consideration for intake.</p>
Rationale	
Rationale / Summary of Business Case	<p>The primary benefits associated with intake of the Complex Orders "Then" Conjunction are improved patient safety by eliminating a potential cause for errors in prescription dosage and improved pharmacist efficiency by removing the need for a manual work-around. As a patient safety risk exists if the dates are not manually corrected, intake of this code reduces the potential for a negative Veteran experience.</p>
Assessment of Alternatives	<p>This is a bug fix; the alternative is to continue using the code with the bug. Currently, pharmacists know the start dates calculate incorrectly when a complex order with a "then" conjunction is entered, so presumably there is a process in place to ensure the dates are reviewed and corrected. The dates can continue to be manually corrected going forward, although there is a patient safety risk associated with this approach.</p>

Table 16. Overview and Rationale

6.2. Fit to Requirements / Benefits

Complex Orders "Then" Conjunction is evaluated based on the fit to requirements as well as benefits offered by the candidate in Table 17.

PDD Element	Complex Orders "Then" Conjunction
Fit to Requirements / Benefits	
Fit with Roadmap	This functionality is not specifically referenced in the Roadmap, but is also not in conflict with it.
Mapping to Feature Sets	This code generally aligns with the enhancements to pharmacy included in both Feature Sets 3 and 4.
Functional Fit with Requirements	This code corrects a known issue in VistA related to the calculation of start dates in complex pharmacy orders. The issue currently requires a manual work-around to correct.
Technical / Architectural Fit with VistA	Complex Orders "Then" Conjunction has a strong technical and architectural fit with VistA. No technical issues are anticipated as this fix has been developed specifically to address a known calculation issue within VistA. Code does not impact existing data structures and there are no changes to CPRS; no re-architecting is required. Dependencies would need to be identified and a patch created to support the VistA national release process.
Business Benefits to VA	The Complex Orders "Then" Conjunction improves patient safety by correcting an existing calculation error that requires a manual work-around to resolve. The manual work-around is dependent upon human intervention to ensure patients receive the proper dosage. Correcting the calculations within VistA reduces the potential for human error. Additionally, removing the need for a manual work-around will improve efficiency and remove a potential source of errors and time consumption for the pharmacist.

Table 17. Analysis of Fit to Requirements / Benefits

6.3. Costs

An overview of the costs associated with intake of Complex Orders "Then" Conjunction is presented in Table 18.

PDD Element	Complex Orders "Then" Conjunction
Costs	
Size and Scope of Any Additional Development	No additional development is required.
Supported and / or Required / Missing Components	No supported and/or required missing components have been identified.
Recommendations for Required or Missing Components	Not applicable as there are no known supported and/or missing components.
Level of Maturity and Support Requirements	This code has not been reviewed or certified by OSEHRA. Complex Orders "Then" Conjunction was developed by Document Storage Systems (DSS), Inc. to support the open source vxVistA EHR. A full distribution of vxVistA is released on an annual basis through OSEHRA. Complex Orders "Then" Conjunction was developed within the past year, and has therefore not yet been released to the open source community. It will be included in the next annual release of vxVistA to OSEHRA. Documentation and test cases may need to be developed to support the OSEHRA certification process.

Table 18. Analysis of Costs

6.4. Risks

The level of risk associated with intake of the Complex Orders "Then" Conjunction open source candidate is evaluated in Table 19.

PDD Element	Complex Orders "Then" Conjunction
Risks	
Technical Risks	There is low technical risk associated with intake of this code. The code may be considered immature as it has just been introduced in the past year and has not yet been released to the open source community.
Operational Risks	An operational risk currently exists due to potential patient safety issues that could arise if pharmacists fail to manually correct the start date calculations. Intake of this code will reduce the existing operational risk.
Programmatic Risks	There is low programmatic risk associated with intake of this code. Since this bug is a known issue, there is already a New Service Request (NSR) entered into the VA system awaiting prioritization. Intake of this code would remove the need for that NSR. There is a minor risk related to OSEHRA's ability to certify the code. Although complete testing documentation to support OSEHRA certification is not currently available, it is anticipated to be available to support intake.
Licensing Implications and Code Quality	No licensing or copyright issues; licensed under the Apache License 2.0. Code will be included in the next full vxVista distribution released to OSEHRA.
Mitigation Strategies	Testing prior to national deployment will mitigate the low technical risk associated with intake of relatively new code.

Table 19. Analysis of Risks

6.5. Epic Statements

To support funding and agile development requirements, Epic statements for this candidate are provided in Table 20. Formatting and categories are consistent with VA's Epic statement format.

Epic Category	Description
Candidate	Complex Orders "Then" Conjunction
For <target customers>	Pharmacists
Who <need or opportunity>	want to improve patient safety and work more efficiently
A <solution>	bug fix
That <key benefit>	corrects a known issue in VistA related to the calculation of start dates in complex pharmacy orders
Unlike <primary alternative>	the current code, which requires a manual work-around to correct the dates
Our solution <does something better – the “why”>	corrects the calculation, eliminating the error and the need for pharmacists to perform a manual work around.
Scope	
Success Criteria <how success will be measured, quantified if possible>	Reduced time for pharmacists to perform the manual work around (additional analysis needed to determine expected time savings); additional margin of patient safety.
In Scope <features that are in scope>	Complex Orders “Then” Conjunction code.
Out of Scope <items not needed for this epic>	N/A
Non-Functional Requirements <shall statements for usability, reliability, etc. if applicable>	N/A

Table 20. Epic Statements

7. Analysis of Patient Search Tool

7.1. Overview and Rationale

An overview of the Patient Search Tool open source candidate is presented in Table 21.

PDD Element	Patient Search Tool
Overview	
Overview of Open Source Intake Candidate	Patient Search Tool is an enhancement to VistA that allows users to search any field, including free text, within a patient's chart. Since the current search capabilities within VistA are fairly limited, the enhancement adds a "Search" menu item to CPRS, and allows users to search for specific terms within notes, problem text, consults, orders, and reports. The search is performed at the individual patient level.
Recommendation	
Recommendation	The recommendation for Patient Search Tool is to proceed with OSEHRA Certification and consideration for intake.
Rationale	
Rationale / Summary of Business Case	The primary benefit associated with intake of Patient Search Tool is the improved ability for clinicians to search within a patient's record, which enhances both the Veteran and provider experience. The code has a strong technical fit with VistA, and provides a highly useful clinician-facing function. It addresses functionality included in the VistA 4 Product Roadmap. There is low political risk associated with intake of this code, and user testing has yielded positive feedback.
Assessment of Alternatives	The alternative to the Patient Search Tool is to continue using the existing search capabilities within CPRS, which are somewhat limited. There is some functionality to search using a "roll and scroll" approach within progress notes only, as well as some limited search capabilities within higher-level categories. However, there is currently not a way to search within all text fields in a patient's record.

Table 21. Overview and Rationale

7.2. Fit to Requirements / Benefits

Patient Search Tool is evaluated based on the fit to requirements as well as benefits offered by the candidate in Table 22.

PDD Element	Patient Search Tool
Fit to Requirements / Benefits	
Fit with Roadmap	This functionality is described in the VistA 4 Product Roadmap.
Mapping to Feature Sets	The Feature Set 4 Enterprise-wide Deployment of eHMP element calls for “free text search (finding entries in patient records based on user entered criteria).”
Functional Fit with Requirements	The current search functionality within VistA is limited. The Patient Search enhancement allows users the ability to search for specific terms within notes, problem text, consults, orders, and reports at the individual patient level. Patient Search enhances usability of the system by clinicians, an area that VA is generally looking to enhance.
Technical / Architectural Fit with VistA	Patient Search Tool has a strong technical and architectural fit with VistA. No technical issues anticipated; this code has been developed specifically to enhance the VistA user experience. The code involves a CPRS modification to add the search menu and the ability to invoke from within CPRS, as well as a KIDS file to install on the VistA side. There are no custom Remote Procedure Calls (RPC) used and no dependencies on non-standard or commercial RPCs. The search is potentially CPU intensive, but performance has not been an issue, and users have the ability to specify if the search receives CPU priority.
Business Benefits to VA	The Patient Search Tool allows clinicians to identify and isolate text data within a patient’s record in real time. By spending less time searching the EHR, the clinician can spend more time focused on the patient, providing an enhanced Veteran experience and improved clinical care.

Table 22. Analysis of Fit to Requirements / Benefits

7.3. Costs

An overview of the costs associated with intake of Patient Search Tool is presented in Table 23.

PDD Element	Patient Search Tool
Costs	
Size and Scope of Any Additional Development	No additional development anticipated.
Supported and / or Required / Missing Components	No supported and/or required missing components have been identified.
Recommendations for Required or Missing Components	Not applicable as there are no known supported and/or missing components.
Level of Maturity and Support Requirements	This code has not been reviewed or certified by OSEHRA. Patient Search Tool was developed by DSS, Inc. through the VHA Innovations program approximately 5 years ago, and was well received by users at the VA test site. Testing was conducted at the North Florida/South Georgia Veterans Healthcare System in Gainesville, FL, with additional limited testing completed in North Carolina. Although not released to production within VA, this enhancement has been available to the open source community for several years through the vxVistA release to OSEHRA. There are no substantive support requirements.

Table 23. Analysis of Costs

7.4. Risks

The level of risk associated with intake of the Patient Search Tool open source candidate is evaluated in Table 24.

PDD Element	Patient Search Tool
Risks	
Technical Risks	No technical risks associated with implementation of this code have been identified.
Operational Risks	No operational risks associated with implementation of this code have been identified.
Programmatic Risks	There is a low programmatic risk related to OSEHRA's ability to certify the code. Some documentation is posted in the OSEHRA technical journal, but test cases currently are not.
Licensing Implications and Code Quality	No licensing or copyright issues; licensed under the Apache License 2.0. Code is included in the full vxVistA distribution released to OSEHRA.
Mitigation Strategies	Not applicable given the low level of risk.

Table 24. Analysis of Risks

7.5. Epic Statements

To support funding and agile development requirements, Epic statements for this candidate are provided in Table 25. Formatting and categories are consistent with VA's Epic statement format.

Epic Category	Description
Candidate	Patient Search Tool
For <target customers>	Clinicians
Who <need or opportunity>	need to quickly find specific items on a patient chart
A <solution>	set of code that works within VistA
That <key benefit>	allows clinicians to search a patient record for specific terms within notes, problem text, consults, orders, and reports
Unlike <primary alternative>	the current patient search which is very limited
Our solution <does something better – the “why”>	provides an ability to search for specific terms within notes, problem text, consults, orders, and reports at the individual patient level.
Scope	
Success Criteria <how success will be measured, quantified if possible>	Reduced time for clinicians to find specific patient information (additional analysis needed to determine expected time savings).
In Scope <features that are in scope>	Patient search tool adding a search menu item to CPRS.
Out of Scope <items not needed for this epic>	N/A
Non-Functional Requirements <shall statements for usability, reliability, etc. if applicable>	The Patient Search Tool shall provide reasonable user-facing performance

Table 25. Epic Statements

8. Analysis of On-the-Fly Alerts

8.1. Overview and Rationale

An overview of the On-the-Fly Alerts open source candidate is presented in Table 26.

PDD Element	On-the-Fly Alerts
Overview	
Overview of Open Source Intake Candidate	On-the-Fly Alerts is an enhancement to CPRS / VistA which allows users to generate message-based alerts to improve staff communication and task management. They provide a way to communicate informally among staff and are one-way alerts that cannot be directly replied to. (These messages are separate from the patient record.) Alerts can be sent to an individual or to a group, and follow standard VistA alert rules and options.
Recommendation	
Recommendation	The recommendation for On-the-Fly Alerts is to proceed with OSEHRA Certification and consideration for intake.
Rationale	
Rationale / Summary of Business Case	The primary benefit associated with intake of On-the-Fly Alerts is improved staff communication and efficiency of patient care. The code has a strong technical fit with CPRS and VistA. It is not very complex and relatively simple to implement. Commercially, the code has been in use for several years outside the VA.
Assessment of Alternatives	The alternative to On-the-Fly Alerts is the existing alerts functionality within CPRS, which is more formal, and becomes a part of the patient's record. On-the-Fly Alerts provides for a less formal means of communication among staff.

Table 26. Overview and Rationale

8.2. Fit to Requirements / Benefits

On-the-Fly Alerts is evaluated based on the fit to requirements as well as benefits offered by the candidate in Table 27.

PDD Element	On-the-Fly Alerts
Fit to Requirements / Benefits	
Fit with Roadmap	This functionality is not specifically referenced in the Roadmap, but is not in conflict with it.
Mapping to Feature Sets	Feature Set 3's "eHMP Development" covers a broad range of requirements that align most closely with the functionality provided by On-the-Fly Alerts, including "alert management."
Functional Fit with Requirements	On-the-Fly alerts allows for informal messages to be sent among staff members to increase communication and coordination. This functionality currently does not exist in CPRS / VistA. This enhancement adds value, but does not fill a significant gap.
Technical / Architectural Fit with VistA	On-the-Fly Alerts has a strong technical and architectural fit with VistA. The code has been developed specifically to enhance the CPRS / VistA user experience. No data issues are anticipated as these alerts are text-based and do not need to integrate with the patient record. This enhancement introduces a new alert type to CPRS, and adds a new "send alert" option to the Tools menu in CPRS. The contact list is pre-populated based on information in VistA. Implementation involves a KIDS file plus user interface work in CPRS. Use of these alerts does not impact performance of CPRS.
Business Benefits to VA	On-the-Fly Alerts improves staff communication and task management. It provides an informal means of communication among staff members which should increase efficiency of patient care. This code improves the clinician experience in CPRS and adds functionality that is not currently available. Intake of this enhancement has the potential to quickly add value. The estimated effort and complexity to implement is relatively small.

Table 27. Analysis of Fit to Requirements / Benefits

8.3. Costs

An overview of the costs associated with intake of On-the-Fly Alerts is presented in Table 28.

PDD Element	On-the-Fly Alerts
Costs	
Size and Scope of Any Additional Development	Scope is narrow and no additional development is anticipated.
Supported and / or Required / Missing Components	No supported and/or required missing components have been identified.
Recommendations for Required or Missing Components	Not applicable as there are no known supported and/or missing components.
Level of Maturity and Support Requirements	This code has not been reviewed or certified by OSEHRA. On-the-Fly Alerts was developed by DSS, Inc. approximately 8 years ago, and has been available to the open source community for several years through the vxVistA release to OSEHRA. There are no substantive support requirements currently identified.

Table 28. Analysis of Costs

8.4. Risks

The level of risk associated with intake of the On-the-Fly Alerts open source candidate is evaluated in Table 29.

PDD Element	On-the-Fly Alerts
Risks	
Technical Risks	No technical risks associated with implementation of this code have been identified.
Operational Risks	No operational risks associated with implementation of this code have been identified.
Programmatic Risks	There is low programmatic risk related to OSEHRA's ability to certify the code. Although complete testing documentation to support OSEHRA certification is not currently available, it is anticipated to be available to support intake.
Licensing Implications and Code Quality	No licensing or copyright issues; licensed under the Apache License 2.0. Code is included in the full vxVistA distribution released to OSEHRA.
Mitigation Strategies	Not applicable given the low level of risk.

Table 29. Analysis of Risks

8.5. Epic Statements

To support funding and agile development requirements, Epic statements for this candidate are provided in Table 30.

Epic Category	Description
Candidate	On-the-Fly Alerts
For <target customers>	clinicians and staff
Who <need or opportunity>	need to communicate and coordinate informally regarding patient care
A <solution>	set of code that works within CPRS
That <key benefit>	allows clinicians and staff to communicate informally through text messaging to alert staff of patient care issues and follow-up
Unlike <primary alternative>	the current system which is very limited with respect to messaging and alerts
Our solution <does something better – the “why”>	provides broad ability to send text message alerts among clinical staff.
Scope	
Success Criteria <how success will be measured, quantified if possible>	Reduced time for clinicians and improved health care quality, facilitated by improved communications (additional analysis needed to determine expected time savings and quality improvements).
In Scope <features that are in scope>	This enhancement adds a new alert type to CPRS, and adds a new “send alert” option to the Tools menu in CPRS.
Out of Scope <items not needed for this epic>	N/A
Non-Functional Requirements <shall statements for usability, reliability, etc. if applicable>	On-the Fly Alerts shall provide reliable user-facing performance and not negatively impact CPRS performance

Table 30. Epic Statements

9. Analysis of Enhanced Problem List

9.1. Overview and Rationale

An overview of the Enhanced Problem List open source candidate is presented in Table 31.

PDD Element	Enhanced Problem List
Overview	
Overview of Open Source Intake Candidate	<p>The Enhanced Problem List implements three changes to CPRS / VistA:</p> <ul style="list-style-type: none"> • Introduces problem list categories, including Medical/Surgical, Family, Social, and Unassigned. • Adds the ability to mark a problem as “resolved,” in addition to the two existing options of “active” and “inactive.” • Adds an additional prompt to enter the ICD-10 problem code, following completion of the existing prompt to enter SNOMED code.
Recommendation	
Recommendation	<p>The recommendation is to place Enhanced Problem List on hold until VHA confirms which, if any, of the three changes included in this enhancement are currently desired.</p>
Rationale	
Rationale / Summary of Business Case	<p>The primary benefit associated with intake of Enhanced Problem List is added user functionality within CPRS to improve charting, documentation, and coding. This code improves the user experience in CPRS and adds functionality that is not currently available. The code has a strong technical fit with CPRS and VistA. There is low quality risk as this code has been in use outside VA for several years.</p>
Assessment of Alternatives	<p>The alternative to Enhanced Problem List is to continue with the current system configuration, which does not include problem list categories, is limited to two problem status options (active or inactive), and does not prompt for ICD-10 code entry.</p>

Table 31. Overview and Rationale

9.2. Fit to Requirements / Benefits

Enhanced Problem List is evaluated based on the fit to requirements as well as benefits offered by the candidate in Table 32.

PDD Element	Enhanced Problem List
Fit to Requirements / Benefits	
Fit with Roadmap	This functionality is not specifically referenced in the Roadmap, but is not in conflict with it.
Mapping to Feature Sets	The functionality generally aligns with the Feature Set 3 “eHMP Development” element.
Functional Fit with Requirements	This enhancement introduces three changes to the problem list in CPRS: problem list categories, “resolved” problem status, and ICD-10 problem code. This functionality currently does not exist in CPRS / VistA. This code adds value, but does not fill a significant gap.
Technical / Architectural Fit with VistA	Enhanced Problem List has a strong technical and architectural fit with VistA. No technical issues are anticipated; this code has been developed specifically to enhance the CPRS / VistA user experience. The changes included in this code are not large from a technical perspective and estimated implementation complexity is moderate. The enhancement involves a change to the user interface. Implementation will require a file change, call change, and extra lookup. For the ICD-10 portion of the code, data is coming from the Lexicon which is already maintained by VA, so there would be no additional maintenance required.
Business Benefits to VA	Enhanced Problem List adds user functionality within CPRS to improve charting, documentation, and coding. Problem list categories improve auditing capabilities. The “resolved” problem status provides a coding option which may be more intuitively appropriate to user versus the current “inactive” option. The ICD-10 prompt supports more complete entry of problem codes.

Table 32. Analysis of Fit to Requirements / Benefits

9.3. Costs

An overview of the costs associated with intake of Enhanced Problem List is presented in Table 33.

PDD Element	Enhanced Problem List
Costs	
Size and Scope of Any Additional Development	Dependencies within VistA would need to be identified. No additional development is anticipated.
Supported and / or Required / Missing Components	No supported and/or required missing components have been identified.
Recommendations for Required or Missing Components	Not applicable as there are no known supported and/or missing components.
Level of Maturity and Support Requirements	This code has not been reviewed or certified by OSEHRA. These enhancements were developed by DSS, Inc. and have been available to the open source community through the vxVistA release to OSEHRA. Problem list categories were introduced to vxVistA approximately ten years ago to support CMS audits on non-VA VistA installations. The “resolved” option was implemented by DSS approximately five years ago to support Meaningful Use requirements. The ICD-10 problem code prompt was released as part of the 2015 vxVistA release. Data related to ICD-10 is already maintained by VA in the Lexicon, so this change does not result in an additional maintenance requirement. Overall, there are limited support requirements and no files to maintain.

Table 33. Analysis of Costs

9.4. Risks

The level of risk associated with intake of the Enhanced Problem List open source candidate is evaluated in Table 34.

PDD Element	Enhanced Problem List
Risks	
Technical Risks	No technical risks associated with implementation of this code have been identified.
Operational Risks	There is a modest operational risk related to the need for the training on business rules related to use of the “resolved” code, as this will be a new status not previously defined or available for use.
Programmatic Risks	There is a low programmatic risk related to the impact of prior decisions related to the use of ICD-10 codes resulting in business or cultural opposition to this change. There is a minor risk related to OSEHRA’s ability to certify the code. Although complete testing documentation to support OSEHRA certification is not currently available, it is anticipated to be available to support intake.
Licensing Implications and Code Quality	No licensing or copyright issues; licensed under the Apache License 2.0. Code is included in the full vxVista distribution released to OSEHRA.
Mitigation Strategies	To mitigate the risks related to the “resolved” status and ICD-10 code prompt, business rules should be developed prior to deployment, and upfront user training is recommended. If VA determines that any of these three changes are not desired, they have the ability to implement portions of the code and exclude others.

Table 34. Analysis of Risks

9.5. Epic Statements

To support funding and agile development requirements, Epic statements for this candidate are provided in Table 35. Formatting and categories are consistent with VA's Epic statement format.

Epic Category	Description
Candidate	Enhanced Problem List
For <target customers>	Clinicians
Who <need or opportunity>	need additional problem list categories and coding
A <solution>	set of code that works within CPRS / VistA
That <key benefit>	<p>implements three changes</p> <ul style="list-style-type: none"> • Introduces problem list categories, including Medical/Surgical, Family, Social, and Unassigned. • Adds the ability to mark a problem as “resolved,” in addition to the two existing options of “active” and “inactive.” • Adds an additional prompt to enter the ICD-10 problem code, following completion of the existing prompt to enter SNOMED code.
Unlike <primary alternative>	the current system which lacks these coding options
Our solution <does something better – the “why”>	implements a “resolved” category for problems, expands categories and facilitates ICD-10 code input
Scope	
Success Criteria <how success will be measured, quantified if possible>	Improved clinician efficiency associated with quickly sorting problems by categorization and ICD-10 code (additional analysis needed to determine expected time savings).
In Scope <features that are in scope>	The enhancement involves a change to the user interface. Implementation will require a file change, call change, and additional lookup.
Out of Scope <items not needed for this epic>	N/A
Non-Functional Requirements <shall statements for usability, reliability, etc. if applicable>	N/A

Table 35. Epic Statements

10. OSS Candidate Review and Summary

A summary ranking of all OSS candidates recommended for intake to date are presented below in Table 36. The candidates were rated on a high (3) / medium (2) / low (1) scale in three categories, with a high (3) score being the highest positive score possible.

In the Veteran Experience category, a high score (3) indicates there is a direct positive impact to the Veteran, a medium score (2) indicates there is an indirect positive impact to the Veteran, and a low score (1) indicates there is no tangible impact to the Veteran. The candidates receiving the best scores in the Veteran Experience category are:

- VANS
- Perceptive Reach
- Appointment Postcard Notification Letter v4.0

In the Speed to Implement category, a high score (3) indicates there are no constraints to implementation, a medium score (2) indicates the code is ready for implementation but the effort is too large and/or complex to implement through EPIP, and a low score (1) indicates additional development is required or the code is not ready to implement. The candidates receiving the best scores in the Speed to Implement category are:

- Complex Orders “Then” Conjunction
- Enhanced XML Utilities for VistA
- XU Digital Signature

In the Level of Risk category, a high score (3) indicates there are no identified risks, a medium score (2) indicates a reasonable level of risk has been identified, and a low score (1) indicates significant risks have been identified or risks have been identified for which there is no acceptable mitigation strategy available. The candidates receiving the best scores in the Level of Risk category are:

- Complex Orders “Then” Conjunction
- Patient Search Tool
- On-the-Fly Alerts
- Enhanced XML Utilities for VistA
- XU Digital Signature

OSS Candidate	Impact to Veteran	Speed to Implement	Level of Risk	Current Status
Q3 (current quarter)				
bbClear	2	2	2	New intake recommendation
VANS	3	1	2	New intake recommendation
Maternity Tracker	2	1	2	New intake recommendation
Complex Orders "Then" Conjunction	2	3	3	New intake recommendation, on hold
Patient Search Tool	2	2	3	New intake recommendation
On-the-Fly Alerts	1	2	3	New intake recommendation
Enhanced Problem List	1	2	2	New intake recommendation, on hold
Q2 (CBA submitted August 2, 2016)				
RAPTOR	2	2	2	In VA intake queue; OSEHRA certification in process
Perceptive Reach	3	2	2	Awaiting VA business review
Enhanced XML Utilities for VistA	1	3	3	Awaiting EPIP intake review
HIEOS	1	1	2	Awaiting VA business review
Q1 (CBA submitted May 11, 2016)				
Appointment Postcard Notification Letter v4.0	3	2	2	VA proceeding with intake; awaiting funding
XU Digital Signature	1	3	3	Awaiting EPIP intake review
OpenInfobutton	2	2	2	Active in eHMP; awaiting decision regarding version

Table 36. Summary of OSS Candidate Ranking

11.Next Steps

The results of the Gap Analysis, Open Source Software and Product Selection Criteria, SWOT Analysis, and Prioritization Description Document will be combined into the quarterly CBA package. The OSS candidates included in the CBA package will be discussed at the next In-Progress-Review. The next quarterly cycle will then be initiated to search for and assess open source candidates, align the candidates with an updated Gap Analysis, and continue to mature the analysis approach and content.

Appendix A. Additional Documentation for OSS Candidates

For several of the candidates, additional information is available through online resources. Links to these resources are provided in Table 37.

Description	Link
bbClear	
bbClear	http://bluebutton.healthit.gov/bbClear/
GitHub Code Repository	https://github.com/blue-button/bbClear
The Design Challenge	http://healthdesignchallenge.com/
VANS	
GitHub Code Repository	https://github.com/VHAINNOVATIONS/VANS
Maternity Tracker	
GitHub Code Repository	https://github.com/VHAINNOVATIONS/Maternity-Tracker
VHA Innovations Webinar	http://www.innovation.va.gov/docs/VAi2webinar2012_Maternity.pdf
Patient Search Tool	
OSEHRA Technical Journal	http://code.osehra.org/journal/journal/view/40
OSEHRA Blog Entry	https://www.osehra.org/blog/document-storage-systems-inc-dss-inc-will-donate-dss-patient-search-tool-extension-osehra-os-ap

Table 37. Additional Documentation for OSS Candidates

Appendix B. Cross Reference of PDD Analysis Elements to the Statement of Work

PDD Element	SOW Cross Reference - Section 5.2.1, Page 37
Overview	
Overview of Open Source Intake Candidate	Additional analysis.
Rationale	
Rationale / Summary of Business Case	Additional analysis.
Assessment of Alternatives	PDD Item 2: Elaborate how the alternatives for the same VistA feature set compare to one another.
Fit to Requirements / Benefits	
Fit with Roadmap	Additional analysis.
Mapping to Feature Sets	PDD item 1: Provide a mapping and functional description of open source software features proposed for VA VistA intake as they correlate to defined VA VistA 4 Feature Sets.
Functional Fit with Requirements	Additional analysis.
Technical / Architectural Fit with VistA	Additional analysis.
Business Benefits to VA	Additional analysis.
Costs	
Size and Scope of Any Additional Development	PDD Item 3: Identify and size the scope of additional development required to meet VA requirements.
Supported and / or Required / Missing Components	PDD Item 4: Provide supporting technical detail regarding supported and/or required/missing components (such as client and server operating systems, database managers, application program interfaces, etc.).
Recommendations for Required or Missing Components	PDD Item 5: Provide recommendations regarding any required/missing components necessary for full operation of VA VistA that may be addressed through either open source or other channels.
Level of Maturity and Support Requirements	PDD Item 6: Identify the level of maturity and supportability requirements associated with the intake of the respective open source code.
Risks	
Technical Risks	PDD Item 8: Identify risks (technical, operational, programmatic) for each open source alternative.
Operational Risks	PDD Item 8: Identify risks (technical, operational, programmatic) for each open source alternative.
Programmatic Risks	PDD Item 8: Identify risks (technical, operational, programmatic) for each open source alternative.

PDD Element	SOW Cross Reference - Section 5.2.1, Page 37
Licensing Implications and Code Quality	PDD Item 7: Identify any licensing implications affecting intake.
Mitigation Strategies	PDD Item 9: Identify proposed mitigation strategies for risks associated with VA VistA intake that may affect national deployment at VAMCs nation-wide.

Table 38. Cross Reference to Statement of Work

Appendix C. VHA Issue Brief Regarding VANS

While researching the VANS candidate, a representative of the Innovations program was contacted for additional information. The following VHA Issue Brief was provided via email. As the document provides a thorough summary of the background and current status of the candidate, and is not available as a linked reference, it is included in its entirety as an Appendix item.

VHA ISSUE BRIEF

Issue Title: VHA Innovation Program Good News Story, #734, Enable Schedulers to Preview, Edit, and Send Appointment Letters Electronically. Lead Innovator: Julie Vedda, PA-C.

Date of Report: September 22, 2014

Brief Statement of Program Issues and Status:

The Enable Schedulers to Preview, Edit, and Send Appointment Letters Electronically lead found that schedulers were unable to edit existing appointment letters in Veterans Health Information Systems and Technology Architecture (VistA). Additionally, the schedulers were not able to send the letters via email. Their only option was to print the existing letter and send it to the Veteran via United States Postal Service (USPS). If any changes to the letter were required, which is often the case, the scheduler was forced to utilize pen-and-ink changes, thus creating a confusing and unprofessional letter. Although My Health^eVet has an email option, it is not integrated with VistA. Therefore, letters would not be emailed efficiently. Home emails were deemed inappropriate for this use due to HIPPA considerations. My Health^eVet was already in compliance with HIPPA and allowed Veterans a two-way communication portal with their primary care teams. This two-way communication is superior to USPS as the message can be received instantly and the sender can receive notification that the letter was read. These items can be tracked electronically and imported into Computerized Patient Record System (CPRS) as a clinic note. The purpose of this Issue Brief is to communicate the successful closeout and future deployment plans for this innovation project.

Background:

Veterans would frequently come from hundreds of miles away to their medical appointments, often to realize that due to the complicated and confusing pen-and-ink changes to their letters they had missed crucial tests and would have to reschedule to have fasting or hard-to-schedule tests completed to receive a complete examination. This issue created hardships for both the Veterans and the medical providers who would be unable to complete their examination reports for the Veteran in a timely manner. It was causing the Department to exceed the allowed 30-day time requirement for examination completion. In addition, allowing 10 to 14 days between scheduling and actual appointments to accommodate for mail time used up one third to one half of the allowed time. If the Veteran was out of town, he or she likely would not have timely access to his or her mail, but would have access to his or her email. It would allow them to contact VA if the appointment time was not feasible and the appointment slot could be given to

another Veteran, which would increase access to care. As VA pays Veterans mileage to travel to medical appointments these repeat visits created additional expense to VA for these examinations. Those funds would be better used for care of Veterans.

Actions, Progress, and Resolutions to Date:

VISN 18 has conveyed an interest in deploying this system to support improved access to care for Veterans. First with an initial release for testing at the local VA Facility, then to the entire VISN with the ultimate goal to release nation-wide. The VA has contracted with TriDec Technologies, LLC to provide integrated scheduling software and user manuals. The time-frame or possibility for MHV interface is unclear which has prevented any live testing.

Virtual system testing was completed in June 2014 utilizing a cloud application test site and fictional patient data. Due to the lack of My HealthVet integration, this innovation was not permitted to be loaded into the live accounts. Failure to utilize the My HealthVet portal prevented full integration and testing of this innovation.

Recommendation:

Recommend opening the Medical Domain Web Services (MDWS) portal in My HealthVet and allow this innovation to move forward to the live testing phase.

Contact for Further Information:

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