



# OSEHRA

*Open Source Electronic Health Record Alliance*

## **Open Source Technical Support and Working Group Services for VA VistA**

**Strengths, Weaknesses, Opportunities  
and Threats (SWOT) Analysis**



**Contract Number: VA118-16-C-0841**

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# 1. Introduction

## 1.1. Executive Summary

For the 2017 second quarter (Q2) deliverable cycle, a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis was performed for the following open source software (OSS) candidates, with the resulting intake recommendations:

- Patient Characteristics – Recommend proceeding with VA intake and OSEHRA Certification.
- Alternate ID – Recommend proceeding with VA intake and OSEHRA Certification.
- Prostate Clinical Outlook Visualization System (PCOVS) – Recommend proceeding with VA intake. OSEHRA Certification has been initiated.

The candidates included in this document were the highest scoring candidates (and best fit for Q2) reviewed during the 2017 Q2 OSS and Product Selection Criteria analysis.

Next steps include developing the Prioritization Description Document for these OSS candidates, which will incorporate additional candidate detail. The SWOT analysis for these candidates may be updated in subsequent quarters as additional information becomes available.

## 1.2. Overview

The purpose of this document is to provide a SWOT analysis to assess the strengths, weaknesses, opportunities, and threats to VA of OSS and products to be considered for VA VistA intake. The analysis includes an assessment of the candidates, with the highest functional strengths/opportunities and lowest weaknesses/threats in alignment to VistA 4 required functional Feature Sets.

Several factors are critical to the success of the OSS intake process. The emphasis must be on providing business value by filling functional and technical gaps, identifying applicable OSS, and working with VA to “lay the pathway” for integration of OSS into VistA to fill identified gaps.

## 2. Approach

To facilitate the SWOT analysis, evaluation criteria were established to objectively assess the strengths/weaknesses and opportunities/threats associated with each OSS candidate. Candidates are assessed as having either a high or low score within each analysis element, then key decisional elements for each candidate are identified. The SWOT analysis table and summary findings for each candidate product are presented in this document.

OSS candidates are reviewed using the Strengths/Weaknesses Dimension Definitions presented in Table 1.

<b>SWOT Dimension</b>	<b>High Score Strength (1-5 Scale, 5 is High)</b>	<b>Low Score Weakness (1-5 Scale, 1 is Low)</b>
Functional Fit with Requirement	Function fills substantive functionality gap and is of value to users.	Function is not needed or is a duplicate of existing functionality.
Technical Fit - Data	Code is a strong fit with data structures in VistA. Implementation would be low-risk in regards to corrupting existing data.	Code is not a fit with data structures in VistA and would require re-architecting to implement.
Technical Fit - API	Code fits well with VistA API structures. Code would integrate with other VistA modules and would be easily callable.	Code is not a fit with API structures in VistA and would require re-architecting to implement.
Code Quality	Code is safe, compliant, and functional. Code is OSEHRA Level certified, fully tested, and highly reliable in providing function / feature. Test documentation is available for certification.	Code has bugs, limited or no documentation, or potentially unreliable. No test documentation is available.
VistA 4 Product Roadmap - Architectural Fit	Code will fit well into existing Roadmap plans and will continue to fit with anticipated evolution of VistA and the Roadmap.	Code will be quickly obsolete or will not work due to planned changes in the Roadmap.
Time-to-Value	Rapid, low-risk implementation. Use of code provides faster time-to-value than internal development and implementation by VA. Intake through the Existing Product Intake Program (EPIP) or bug fix maintenance release process would be faster than implementing a project requiring funding. Intake of bug fixes (patches), minor enhancements (patches), and tools is generally faster than application components, applications, applications with new data stores, and platforms.	Use of code will not improve time-to-value and may actually decrease time-to-value in VA overall due to implementation complexity / risk or other issues. Code requiring additional hardware / software or code that implements a new database will take more time to implement. Code that uses PII requires additional levels of security review, delaying implementation.

**Table 1. Strengths/Weaknesses Dimension Definitions**

OSS candidates are reviewed using the Opportunities/Threats Dimension Definitions presented in Table 2.

<b>SWOT Dimension</b>	<b>High Score Opportunity (1-5 Scale, 5 is High)</b>	<b>Low Score Threat (1-5 Scale, 1 is Low)</b>
Intellectual Property Rights / Copyright, Licensing Obligations	Use of code is free and clear with no IP / legal issue.	Use of code puts VA or open source community at risk of legal action.
Open Source Community Involvement	Use of code viewed as enhancing the value and engagement of the community.	Adoption of code could result in reduction of community involvement. Use of code not viewed as positive for the community.
Veteran Experience	Use of code will greatly enhance Veteran experience.	Use of code may damage Veteran experience.
Quality Risk	Code is high-quality; adoption provides the opportunity to add value from the open source community.	Code is of low or unproven quality, or is not an improvement over existing VA software quality, leaving VA vulnerable.
Political Risk	No political or competing concerns associated with adoption of open source code. If the code is already in limited use by VA, there is no known opposition to expansion of its use.	Political or competing concerns exist related to open source code. Other existing code already in use at VA. Could cause organizational issues for VA if open code is adopted.

**Table 2. Opportunities/Threats Dimension Definitions**

### 3. Analysis of Patient Characteristics

#### 3.1. OSS Candidate Overview

The Patient Characteristics candidate allows CPRS users to enter and display additional patient characteristics in the CPRS banner. This functionality can be used to display various patient attributes, such as physical characteristics or legal status. Characteristics are selected from a list which can be developed and maintained at the local or national level. Figure 1 displays a screen capture of Patient Characteristics implemented in vxVista, with the selected characteristics displaying in the bottom right corner of the CPRS banner below the patient's date of birth.

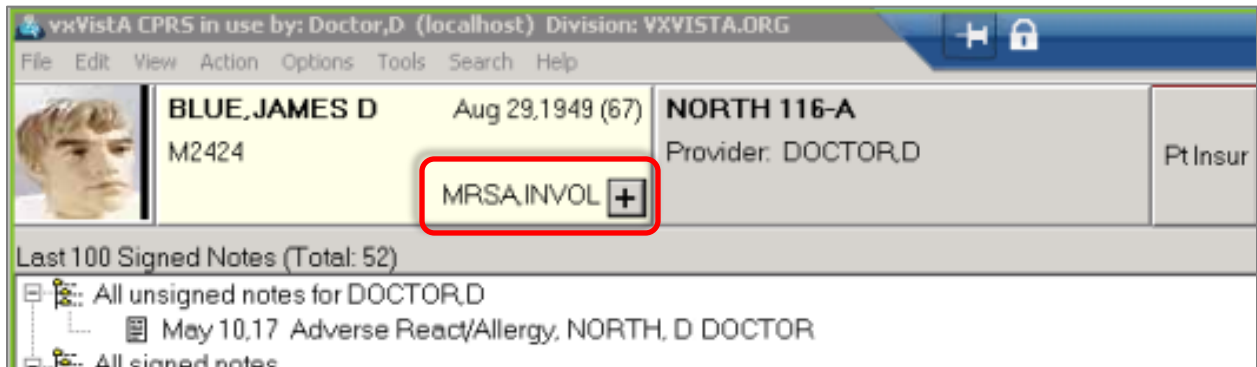


Figure 1. Patient Characteristics Implemented in vxVista

Patient Characteristics was developed by Document Storage Systems (DSS), Inc. to support the vxVista EHR. It has been in use by DSS clients for the past year and was made available to the open source community in the 2016 vxVista release to OSEHRA. Patient Characteristics has not been deployed within VA.

The primary benefits associated with intake of Patient Characteristics are the potential for improved clinician efficiency and improved patient safety. VA has complete flexibility in how Patient Characteristics would be implemented. The ultimate impact of this code depends on which items VA decides to include for potential banner display.

The recommendation for Patient Characteristics is to proceed with VA intake and OSEHRA Certification.

### 3.2. Strengths/Weaknesses

The Strengths and Weaknesses analysis elements for Patient Characteristics are presented in Table 3, along with a score, evaluation comments, and decisional element indicator for each dimension.

SWOT Dimension	Score	Evaluation Comments
Functional Fit with Requirement	3	The Patient Characteristics candidate enhances existing functionality by allowing CPRS users to enter and display additional patient characteristics in the CPRS banner. It can be used to display various patient attributes, such as physical characteristics or legal status. Characteristics are selected from a list developed and maintained at the local or national level. This functionality currently does not exist in CPRS / VistA. The code adds value, but does not fill a significant gap.
Technical Fit - Data	4	No data issues are anticipated; this code has been developed specifically to enhance CPRS / VistA functionality. It was developed for use with vxVistA, and therefore integrates well with VistA data exchange. VA will need to establish the list of selectable patient characteristics, and determine if the list will be maintained at the local or national level.
Technical Fit - API	5*	No architectural issues are anticipated; this code has been developed specifically to enhance CPRS / VistA functionality. It was developed for use with vxVistA, and therefore integrates well with VistA architecture. This enhancement involves a change to CPRS code and a database patch to add a new field for characteristics.
Code Quality	4	This code is in use at all vxVistA installations without issue. It was implemented in vxVistA v15.0, which was released in June 2016. The code has been in use in production outside VA, but has not been piloted or deployed in VA. It has not been reviewed or certified by OSEHRA. Documentation and test cases may need to be developed to support the OSEHRA certification process.
VistA 4 Product Roadmap - Architectural Fit	3	This functionality is not specifically referenced in the Roadmap, but is also not in conflict with it.
Time-to-Value	3*	Patient Characteristics is an application with a new data store (for the text of each characteristic) which may have a longer implementation timeline, although the text does not involve PII. The candidate involves a change to CPRS code and a database patch. Prior conversations with VA stakeholders have raised the concern that any changes involving CPRS may involve a longer lead-time as future CPRS GUI changes are already largely determined.

Legend: \*Decisional element

**Table 3. Strengths / Weaknesses Associated with Patient Characteristics**

### 3.3. Opportunities/Threats

The Opportunities and Threats analysis elements for Patient Characteristics are presented in Table 4, along with a score, evaluation comments, and decisional element indicator for each dimension.

SWOT Dimension	Score	Evaluation Comments
Intellectual Property Rights / Copyright, Licensing Obligations	5*	No licensing or copyright issues; licensed under the Apache 2.0 License. Code was developed by DSS, Inc. for use with vxVistA, and is included in the full 2016 vxVistA distribution released to OSEHRA.
Open Source Community Involvement	4	Code is current and available to the open source community for use and comment.
Veteran Experience	4*	While code is not Veteran-facing, it does have the potential to improve the Veteran experience, depending on the attributes selected for inclusion in the patient characteristics list. Patient characteristics are displayed in the banner in CPRS to be readily visible and easily seen by VA clinical staff. They can be configured to provide information that would improve delivery of healthcare. Examples of information that could be displayed include "infection control protocols" or "fall risk."
Quality Risk	4*	Because this code was developed specifically for VistA and has been in use in production environments outside the VA, there is low quality risk associated with intake. This code has not been piloted or deployed in VA.
Political Risk	4	There is a low level of political risk associated with intake of this code, given that it is a minor enhancement. VA would need to determine how to use this functionality, including which attributes to include in the patient characteristics list and whether maintenance should be allowed at the local or national level. If no characteristics are selected for a particular patient, the user would see no change to the display for that patient, minimizing risk associated with implementation.

Legend: \*Decisional element

**Table 4. Opportunities / Threats Associated with Patient Characteristics**



### 3.4. SWOT Analysis Summary

An overall summary of the Patient Characteristics SWOT analysis decisional elements are presented in Table 5.

	<b>Helpful</b> to achieving time to value	<b>Harmful</b> to achieving time to value
<b>VA Perspective</b> (VistA Fit, Business Value)	<u>Strengths</u> <ul style="list-style-type: none"> <li>Code developed specifically for VistA, which indicates a strong technical fit</li> </ul>	<u>Weaknesses</u> <ul style="list-style-type: none"> <li>Involves a change to CPRS, which may present some challenges for intake</li> </ul>
<b>External Impacts</b> (Risks, Upside)	<u>Opportunities</u> <ul style="list-style-type: none"> <li>Potential to improve patient safety</li> <li>Low quality risk; enhancement has been in use for several years outside the VA</li> <li>No licensing or copyright issues</li> </ul>	<u>Threats</u> <ul style="list-style-type: none"> <li>None</li> </ul>

**Table 5. SWOT Analysis Summary of Patient Characteristics**

## 4. Analysis of Alternate ID

### 4.1. OSS Candidate Overview

The Alternate ID candidate consists of two related modules evaluated together. The Alternate ID Storage and Lookup Module allows identifiers other than the patient's Social Security Number (SSN) to be entered, stored, and used for search purposes. The Replace Display of Patient SSN Module replaces SSN with an alternate identifier in many on-screen and printed reports and displays. Used together, these two modules reduce the reliance on and prevalence of SSNs, while still maintaining SSN where needed for administrative, billing, and search purposes. Figure 2 displays a sample screen capture of Alternate ID implemented in vxVistA, with an alternate patient identifier appearing below the patient's name in the patient selection screen.

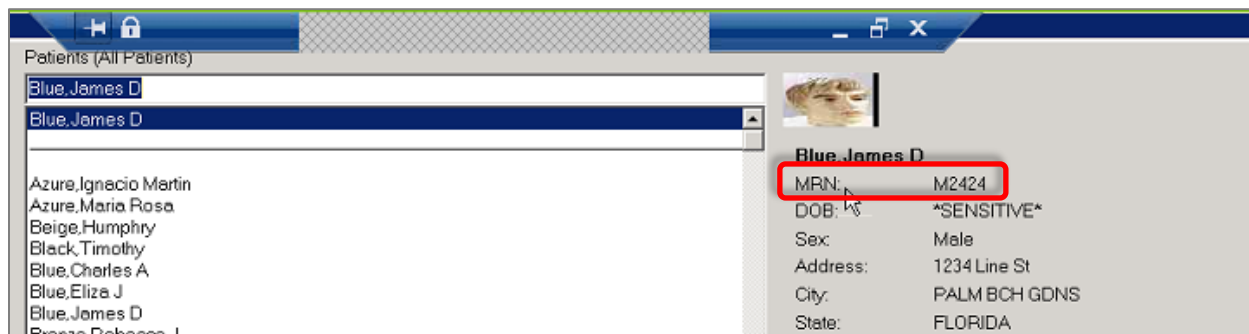


Figure 2. Alternate ID Implemented in vxVistA

Alternate ID was developed by Document Storage Systems (DSS), Inc. to support the vxVistA EHR. DSS began introducing these changes approximately 12 years ago, with changes to screens showing SSN being implemented in a phased manner. Alternate ID was released to the open source community in the 2011 vxVistA release to OSEHRA. It has not been deployed within VA.

The primary benefit associated with intake of Alternate ID is a reduction in the display and general visibility of patient SSNs. Congress has been urging government agencies to reduce their reliance on SSNs as identifiers. In 2007, the Office of Management and Budget issued guidance mandating agencies to develop plans to cut back on the collection of and reliance on the numbers due to concerns about identity theft, but agencies have struggled to comply with this guidance.<sup>1</sup> Implementation of the Alternate ID candidate would allow VA to make progress towards this goal.

The recommendation for Alternate ID is to proceed with VA intake and OSEHRA Certification.

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<sup>1</sup> Gunter, C. (2017, May 26). *Can government stop using Social Security numbers?* Retrieved June 6, 2017, from <https://fcw.com/articles/2017/05/26/why-gov-cant-quit-ssns.aspx>

## 4.2. Strengths/Weaknesses

The Strengths and Weaknesses analysis elements for the Alternate ID candidates are presented in Table 6, along with a score, evaluation comments, and decisional element indicator for each dimension.

SWOT Dimension	Score	Evaluation Comments
Functional Fit with Requirement	5*	The Alternate ID candidate consists of two related modules evaluated together. The Alternate ID Storage and Lookup Module allows identifiers other than the patient's Social Security Number (SSN) to be entered, stored, and used for search purposes. The Replace Display of Patient SSN Module replaces SSN with an alternate identifier in many on-screen and printed reports and displays. Used together, these two modules reduce the reliance on and prevalence of SSNs, in VistA while still maintaining SSN where needed for administrative, billing, and search purposes. This functionality currently does not exist in CPRS / VistA. This code enhances VA's ability to adhere to policy directives related to SSN reduction, including VA's SSN Reduction Plan titled <i>Eliminating the Unnecessary Collection and Use of Social Security Numbers at the Department of Veterans Affairs</i> <sup>2</sup> , <i>VHA Directive 2012-035 Social Security Number Reduction</i> <sup>3</sup> , and <i>VA Handbook 6507.1 Acceptable Uses of the Social Security Number and VA SSN Review Board</i> . <sup>4</sup>
Technical Fit - Data	4	No data issues are anticipated. This code was developed for use with vxVistA, and therefore integrates well with VistA.
Technical Fit - API	4*	No architectural issues are anticipated. This code was developed for use with vxVistA, and therefore integrates well with VistA. Instances of hard-coded SSN fields would need to be identified and updated, and resulting changes will be far-ranging.
Code Quality	4	Code is in use at all vxVistA installations without issue. It has been in use in production environments outside VA, but has not been piloted or deployed in VA. This candidate has not been reviewed or certified by OSEHRA. Documentation and test cases may need to be developed to support the OSEHRA certification process.

<sup>2</sup> Department of Veterans Affairs. (2014). *Eliminating the Unnecessary Collection and Use of Social Security Numbers at the Department of Veterans Affairs*. Retrieved May 26, 2017, from [https://www.oprm.va.gov/docs/SSNPlan\\_2014.pdf](https://www.oprm.va.gov/docs/SSNPlan_2014.pdf)

<sup>3</sup> Veterans Health Administration. (2012). *VHA Directive 2012-035: VHA Social Security Number Reduction*. Retrieved May 26, 2017 from [https://www.va.gov/vhapublications/ViewPublication.asp?pub\\_ID=2848](https://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2848)

<sup>4</sup> Department of Veterans Affairs. (2011). *VA Handbook 6507.1: Acceptable Uses of the Social Security Number (SSN) and the VA SSN Review Board*. Retrieved May 26, 2017 from [https://www.va.gov/vapubs/viewPublication.asp?Pub\\_ID=573&FType=2](https://www.va.gov/vapubs/viewPublication.asp?Pub_ID=573&FType=2)

SWOT Dimension	Score	Evaluation Comments
VistA 4 Product Roadmap - Architectural Fit	3	This functionality is not specifically referenced in the Roadmap, although the functionality does align broadly with VA policy.
Time-to-Value	2*	Complexity of the change is high as SSN is hard-coded into many locations in VistA and will take a long time to fully implement. The scope is far-reaching and would involve changes in many areas of VistA, CPRS, BCMA, etc. Implementation will have to be carefully planned to determine appropriate patient identifiers that can be used. Additionally, alternate ID is an application with a new data store for medical ID's that will likely have a longer implementation timeline. This code involves a change to CPRS. Prior conversations with VA stakeholders have raised concern that changes involving CPRS may involve a longer lead-time as future CPRS GUI changes are already largely determined. Ownership and coordination will likely need to come from the VHA Privacy Office.

Legend: \*Decisional element

**Table 6. Strengths / Weaknesses Associated with Alternate ID**

### 4.3. Opportunities/Threats

The Opportunities and Threats analysis elements for the Alternate ID candidates are presented in Table 7, along with a score, evaluation comments, and decisional element indicator for each dimension.

SWOT Dimension	Score	Evaluation Comments
Intellectual Property Rights / Copyright, Licensing Obligations	5*	No licensing or copyright issues; licensed under the Apache 2.0 License. Code was developed by DSS, Inc. for use with vxVistA, and is included in the full 2011 vxVistA distribution released to OSEHRA.
Open Source Community Involvement	4	Code is current and available to the open source community for use and comment.
Veteran Experience	4*	Implementation of this code would improve Veteran privacy by reducing the number of screens and forms displaying their SSN. Because SSN can continue to be used for search purposes, this goal is accomplished without any added burden on the Veteran.
Quality Risk	4*	Because this code was developed specifically for VistA and has been in use for several years outside the VA, there is low quality risk associated with intake. Initial code was introduced approximately 12 years ago, with additional changes implemented in a phased approach. This code has not been piloted or deployed in VA.
Political Risk	3	There is a moderate level of political risk associated with intake of this code. While the changes are consistent with VA policies and Congressional direction, the impact of the change would be far-reaching and require significant coordination. Ownership would likely need to come from the VHA Privacy Office.

Legend: \*Decisional element

**Table 7. Opportunities / Threats Associated with Alternate ID**

## 4.4. SWOT Analysis Summary

An overall summary of the Alternate ID SWOT analysis decisional elements are presented in Table 8.

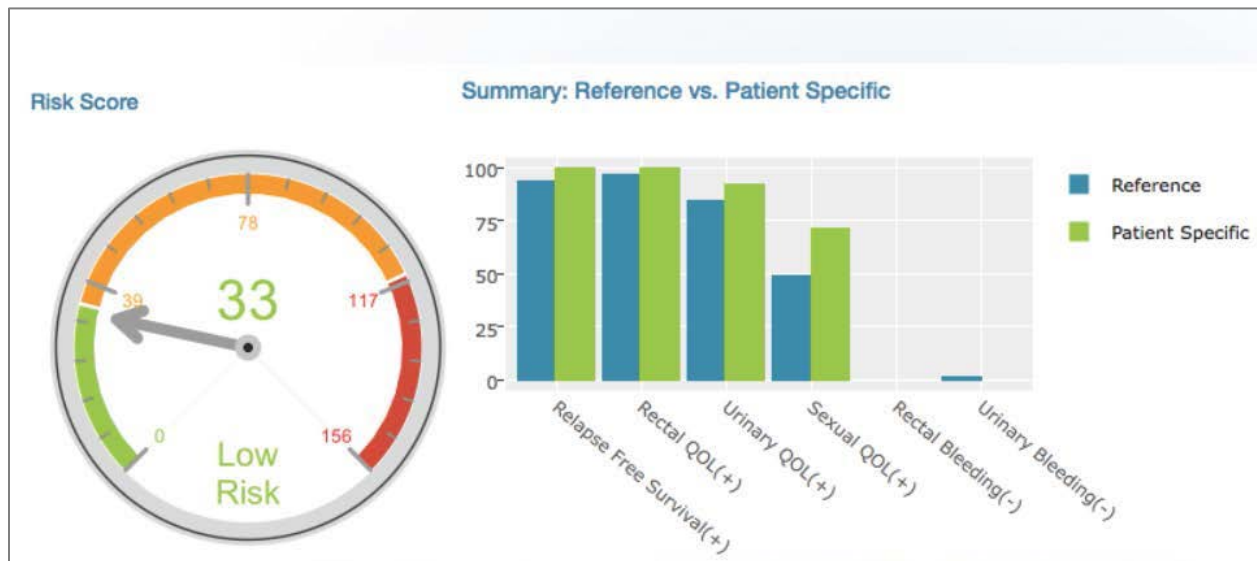
	<b>Helpful</b> to achieving time to value	<b>Harmful</b> to achieving time to value
<b>VA Perspective</b> (VistA Fit, Business Value)	<u>Strengths</u> <ul style="list-style-type: none"> <li>Enhances compliance with VA policies related to reduction of the use of SSN</li> <li>Technical fit is strong, no architectural issues anticipated</li> </ul>	<u>Weaknesses</u> <ul style="list-style-type: none"> <li>Long implementation time due to the need to update hardcoded fields throughout VistA; also the storage of a medical ID / PII</li> </ul>
<b>External Impacts</b> (Risks, Upside)	<u>Opportunities</u> <ul style="list-style-type: none"> <li>Improves patient privacy</li> <li>No copyright or licensing issues</li> </ul>	<u>Threats</u> <ul style="list-style-type: none"> <li>Central VHA business ownership and technical ownership required to coordinate far reaching code and PII-related changes</li> </ul>

Table 8. SWOT Analysis Summary of Alternate ID

## 5. Analysis of Prostate Clinical Outlook Visualization System (PCOVS)

### 5.1. OSS Candidate Overview

The Prostate Clinical Outlook Visualization System (PCOVS) was developed to provide prostate cancer patients and their clinicians with a tool to visualize probable treatment outcomes using institutional, patient specific data for comparing results of treatment. The PCOVS presents patient specific risk scores in a gauge chart style and risk free probability bar plots to compare treatment data of patients treated with hypo-fractionated stereotactic body radiation therapy (SBRT), which is a specific type of radiation therapy. The PCOVS approach can be expanded to other specialties of oncology with the flexible, modularized architecture that can be customized by changing independent modules. Figure 3 shows an example patient report.



**Figure 3. Example Risk Probabilities and Gauge Chart Report**

When a patient presents with localized prostate cancer, referral for radiation oncology consultation includes a discussion of likely outcomes of therapy. Among current radiation treatments for prostate cancers, SBRT has gained clinical acceptance based on efficacy, short duration of treatment and potential radiobiological advantages.

PCOVS calculates prostate cancer outcomes for each prospective patient using the Expanded Prostate Cancer Index Composite (EPIC-26) quality of life. Kaplan-Meier analysis<sup>5</sup> was applied using the American Society of Therapeutic Radiology and

<sup>5</sup> "The Kaplan–Meier estimator is a non-parametric statistic used to estimate the survival function from lifetime data. In medical research, it is often used to measure the fraction of patients living for a certain amount of time after treatment." Wikipedia. *Kaplan–Meier estimator*. Retrieved June 19, 2017, from [https://en.wikipedia.org/wiki/Kaplan%E2%80%93Meier\\_estimator](https://en.wikipedia.org/wiki/Kaplan%E2%80%93Meier_estimator)

Oncology (ASTRO) method for biochemical recurrence (BCR) free survival and likely outcome and the PCOVS nomogram to calculate parameters for quality of life. Open-source R, RShiny, and MySQL were used to develop a modularized architecture system.

PCOVS generates PDF reports which consist of a comparison chart of risk free probabilities and gauge charts of risk scores. This system is now being expanded as a web-based service to patients. PCOVS visualized patient specific likely outcomes were compared to treatment data from a single department, helping the patient and the clinician to visualize likely outcomes.<sup>6</sup>

The recommendation for PCOVS is to proceed with VA intake. OSEHRA Certification has been initiated.

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<sup>6</sup> Park, J. (2017). Prostate Clinical Outlook Visualization System. *OSEHRA Technical Journal*. <http://hdl.handle.net/10909/11297>



## 5.2. Strengths/Weaknesses

The Strengths and Weaknesses analysis elements for PCOVS are presented in Table 9, along with a score, evaluation comments, and decisional element indicator for each dimension.

SWOT Dimension	Score	Evaluation Comments
Functional Fit with Requirement	2*	PCOVS helps oncologists share patient prognosis information with prostate cancer patients planning to have hypo-fractionated stereotactic body radiation therapy (SBRT) for their prostate cancer. Although this is a niche application for patient education for a specific cancer treatment, this application fits the gap related to oncology.
Technical Fit - Data	4	This application does not store patient data. Anonymized patient population data for SBRT patients is used for the algorithm to calculate properly. This data can be from any patient base, not necessarily VA patients.
Technical Fit - API	5*	There are no requirements to fit with VistA API's since the code does not integrate; it just projects prognosis based on limited patient data which is not stored.
Code Quality	3**	Additional information and analysis is needed to determine code quality.
VistA 4 Product Roadmap - Architectural Fit	3	This functionality is not specifically referenced in the Roadmap and does not fit any specific Roadmap gap, but PCOVS loosely fits the vision gap associated with oncology.
Time-to-Value	5*	This code has the potential to deliver rapid time-to-value since the code does not need to be technically integrated with VistA.

Legend: \*Decisional element, \*\* Additional analysis needed

**Table 9. Strengths / Weaknesses Associated with PCOVS**

### 5.3. Opportunities/Threats

The Opportunities and Threats analysis elements for PCOVS are presented in Table 10, along with a score, evaluation comments, and decisional element indicator for each dimension.

SWOT Dimension	Score	Evaluation Comments
Intellectual Property Rights / Copyright, Licensing Obligations	5*	Use of this code should be free of any copyright or legal concerns as this code is available in the open source space with an Apache 2.0 license.
Open Source Community Involvement	3	Use of this code could be viewed as enhancing the value and engagement of the community, but this is yet to be determined.
Veteran Experience	4	This code would improve the Veteran experience for prostate cancer patients, albeit that is a limited number of Veterans.
Quality Risk	3**	Additional information and analysis is needed to determine any quality issues.
Political Risk	4*	There is no foreseeable political risk associated with potential intake of this code. The code simply provides patient education, which can be a valuable part of the Veteran patient experience.

Legend: \*Decisional element, \*\* Additional analysis needed

**Table 10. Opportunities / Threats Associated with PCOVS**

## 5.4. SWOT Analysis Summary

An overall summary of the PCOVS SWOT analysis decisional elements are presented in Table 11.

	<b>Helpful</b> to achieving time to value	<b>Harmful</b> to achieving time to value
<b>VA Perspective</b> (VistA Fit, Business Value)	<p><u>Strengths</u></p> <ul style="list-style-type: none"> <li>• The code is external to VistA so there is no need to fit with VistA API's</li> <li>• Potential to deliver rapid time-to-value since the code does not need to be technically integrated with VistA</li> </ul>	<p><u>Weaknesses</u></p> <ul style="list-style-type: none"> <li>• This is a niche application, providing an education benefit to a specific group of prostate cancer patients</li> </ul>
<b>External Impacts</b> (Risks, Upside)	<p><u>Opportunities</u></p> <ul style="list-style-type: none"> <li>• The code provides patient education, which can be a valuable part of the Veteran patient experience</li> <li>• No copyright or licensing issues</li> </ul>	<p><u>Threats</u></p> <ul style="list-style-type: none"> <li>• None</li> </ul>

Table 11. SWOT Analysis Summary of PCOVS

## **6. Next Steps**

The OSS candidates reviewed in this SWOT analysis will be included in the 2017 Q2 Prioritization Description Document, along with additional detail. Additionally, these candidates will be reviewed during the 2017 Q2 In Progress Review (IPR).

This SWOT analysis may be updated in subsequent quarters as additional information becomes available.