

VISTA Point of Care Application Analytics

*A data-driven framework for optimization and
standardization of VHA's clinical user experience*

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Summary

Background

Veteran care is provided using VISTA's Point-of-Care Applications (CPRS, VistA Imaging, BCMA and over fifty others). In FY22, VHA provided over 115 million veteran care encounters using VISTA point of care applications. The workflow of all of this care remains, however, unmeasured and unknown.

Over the past four years all VISTA systems have been migrated to the VA Enterprise Cloud (VAEC), a federally-certified commercial cloud managed by Amazon Web Services (AWS). Within its new cloud platform, VISTA can access and leverage a wide range of new commercial cloud-based capabilities.

Objective

Leverage the AWS cloud capability to capture and analyze all end-user traffic flows between cloud-based VISTA and all of VISTA's point of care applications. This ability to capture and analyze clinical workflows is analogous to the Cerner "Lights on Network."

Clinical Focus

A first-ever capability to provide real-world clinical workflow analytics, and provide a data-driven approach for improvement and standardization of clinical workflow

Benefits

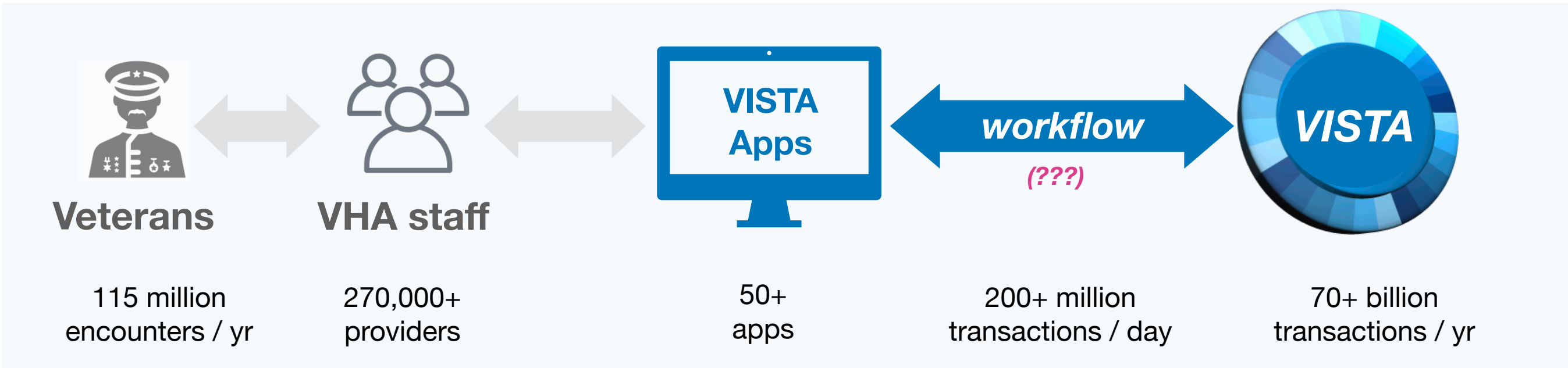
*Enterprise Standardization of clinical workflow
Clinical workflow optimization and efficiency
Data-driven approach for clinical workflow improvement*

Support

CIDMO / FY24-25

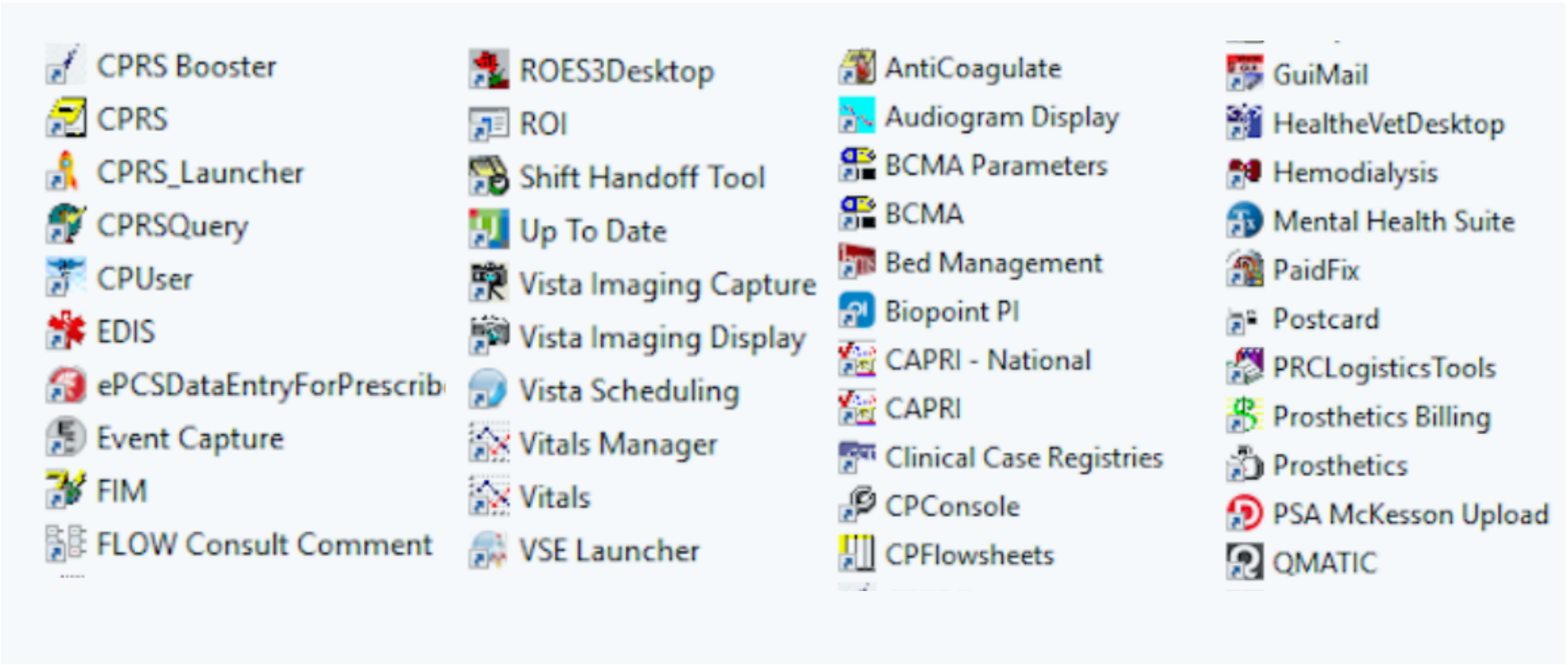
VHA Care Workflow

VHA staff provide veteran care using a suite of VistA Point-of-Care Applications (CPRS, Imaging, and over fifty others). Each day in VA, over 270,000 staff at 1250 facilities use VistA Applications to create, store, and process over 4 million new documents, images, lab, pharmacy orders in VISTA. In FY22, VHA provided over 115 million veteran care encounters using VistA Point of Care Applications (VistA Apps).



VISTA Database

- Contains 500 million veteran-years of cumulative data and knowledge
- Adds 4 million new documents, lab, imaging, and pharmacy orders each day
- Supports over 200 million transactions each day, all with six sigma reliability.

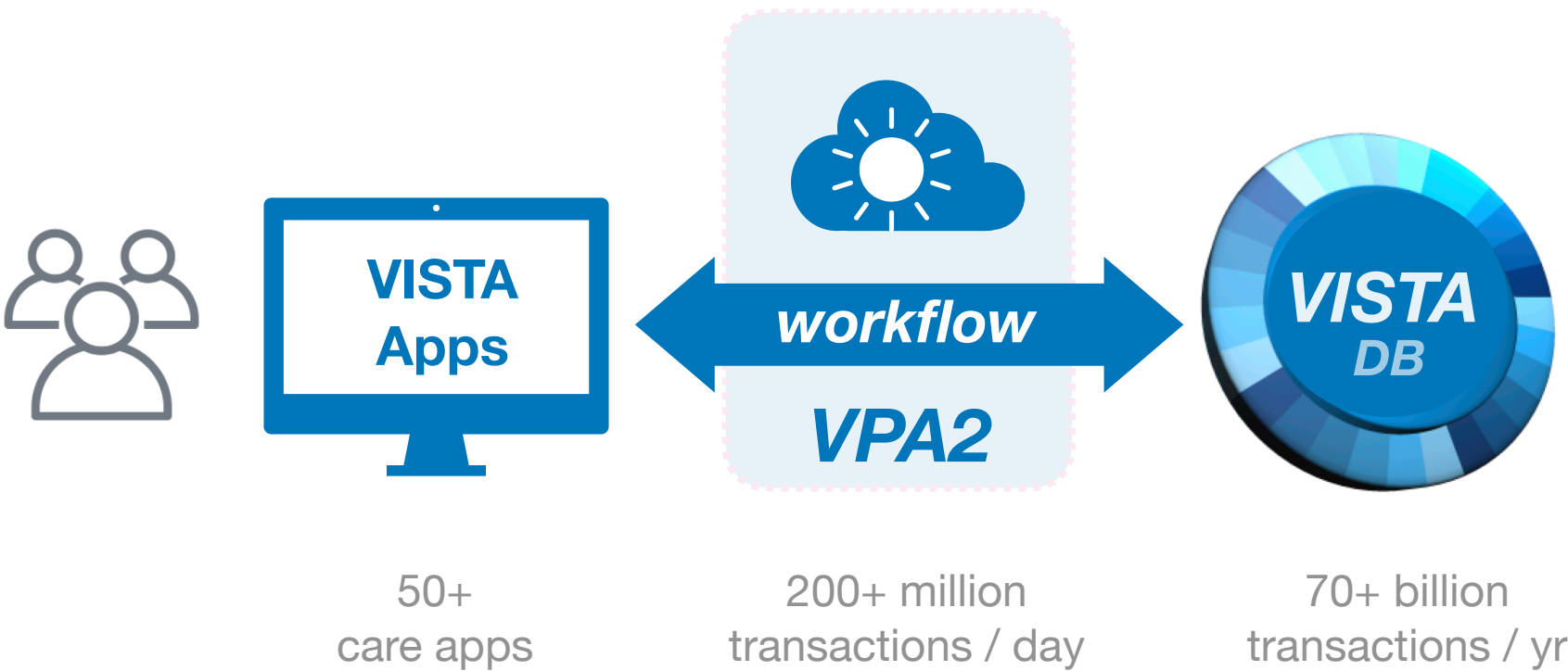


VISTA Apps

- VISTA Apps are a suite of 50+ Windows desktop applications installed on 400,000 computers across all VAMCs
- VISTA Apps use the VISTA database for all transactions and storage
- VISTA Apps include CPRS, Vista Imaging, and BCMA
- *The workflows of VistA Apps are currently unmonitored and unknown*

Clinical Workflow Analytics

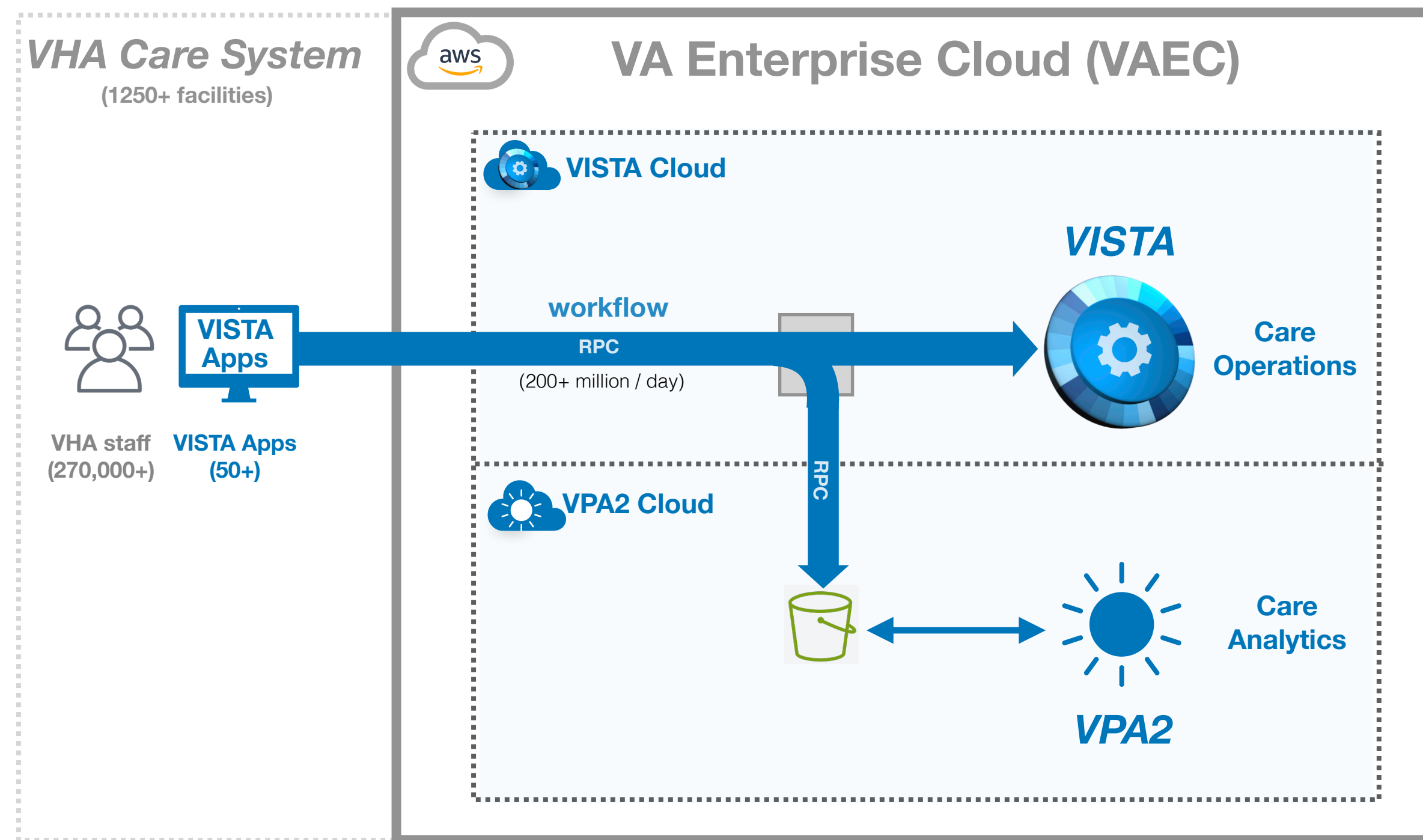
VistA Point-of-Care Application Analytics (VPA2) provides cloud-native traffic monitoring and analytics of all transactions and workflows between VistA Apps and cloud-based VistA systems.



VPA2 provides - for the first time - comprehensive monitoring and analytics on the real-world use of VistA Point of Care Applications, and thus enables data-driven improvement to the workflows and efficiency of VHA clinical staff. VPA2 is analogous to the Cerner’s “Lights on Network” functionality.

Clinical Workflow Analytics - Implementation

All VISTA systems have been migrated to the VA Enterprise Cloud (VAEC), a federally-certified commercial cloud provided by Amazon Web Services (AWS). VPA2 leverages VISTA's new AWS-based cloud platform and technology to provide secure cloud-native streaming capture and analytics of the use of VISTA Apps.



AWS is a leading commercial cloud services provider

VAEC-based VISTA inherits hundreds of new features, functionality, and services in the AWS cloud, including security, scalability, and traffic monitoring.

VPA2 is implemented in the same secure cloud infrastructure as VISTA, which enables streaming analytics of VISTA traffic and applications without limitations.



VISTA: VHA Information Systems Technology Architecture
Care Apps: CPRS, Brilians, BCMA (and 50+ others)
VAEC: VA Enterprise Cloud
RPC: Remote Procedure Call (transaction)
AWS: Amazon Web Services
VPC: Virtual Private Cloud

VISTA Cloud
 U.S. GovCloud: FedRAMP-HIGH
 VA: RiskVision (425 controls)
 DoD: eMASS (1600+ controls)
 NIST: FISMA-HIGH, FIPS
 HHS: HIPAA

App Analytics
 VASI ID: VAM
 VA: T4NG-0411
 TAC: 19-54164
 ATO: 2020-01
 IOC: 2020-03

U.S. GovCloud Certified



VISTA Application Analytics Benefits

**VISTA App Analytics
enables improvement in
the following areas by
providing real-world data
on the use of point of care
applications**

User Experience:

- *Real-world usage of VistA Point-of-Care Applications (CPRS, Vista Imaging, BCMA, and over fifty others)*
- *Real-world timings for all user interactions with all menus, options, and actions such as login time, time to open large complex documents, time to access and open images, etc.*

Strategic Investment:

- *Identification of high-use features, functions, and applications where investment should be focused*
- *Identification of little-used features and applications, which may be consolidated, reducing cost of maintenance*

Enterprise Standardization:

- *Identification of variations of use of applications and workflows across different VA medical centers*

Workflow:

- *Identification of ‘hotspots’ of application inefficiency (redundant workflow, workarounds, latency) to target simplification and acceleration*

VISTA Application Analytics Examples

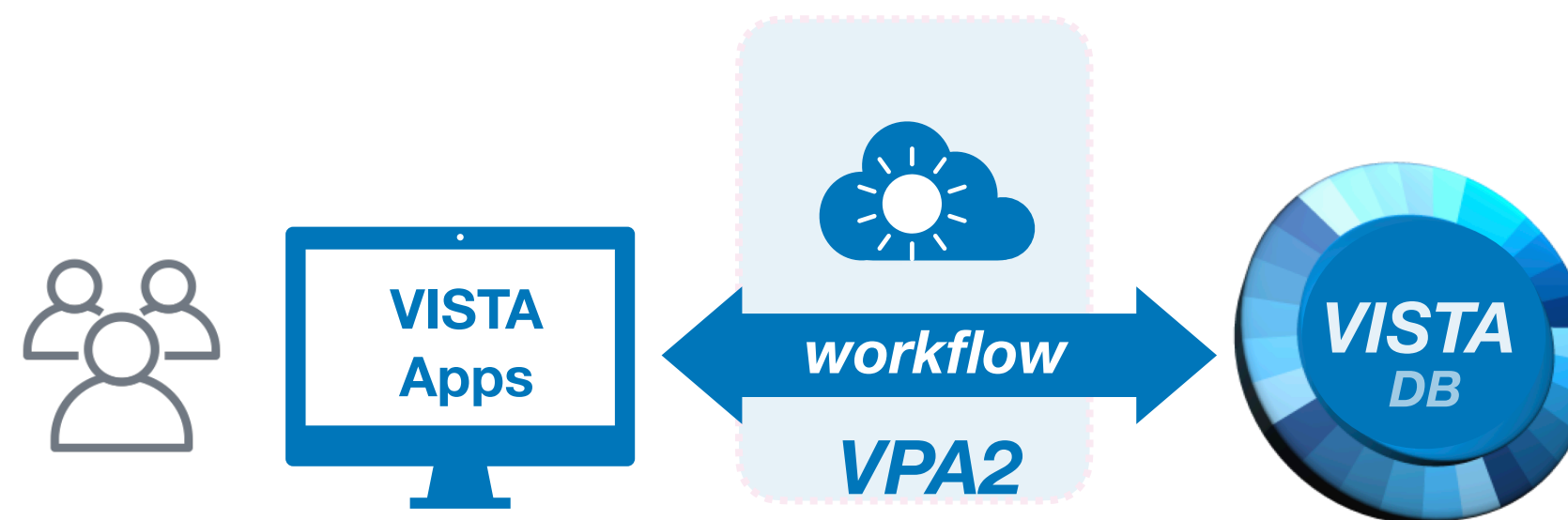
- **User types and volume of use**
physicians, nurses, administration (100+ other)
- **Application types and volume of use**
CPRS, Imaging, BCMA (50+ other)
- **Connection volumes, frequency, and duration**
Where, when, and how long are applications connecting?
- **Types of user authentication and relative use**
PIV? User/pass? Remote / local?
- **Performance and timing**
Execution times of transactions determines end-user workflow experience
- **Enterprise standard vs Local workflows**
Local VistA RPCs vs cross-VistA RPCs

Field Implementation (FY24-25)

Field implementation of VISTA Point-of-Care Application Analytics will be at three representative VAMCs of varying size and complexity in FY24

Call for participation of clinical informaticists to:

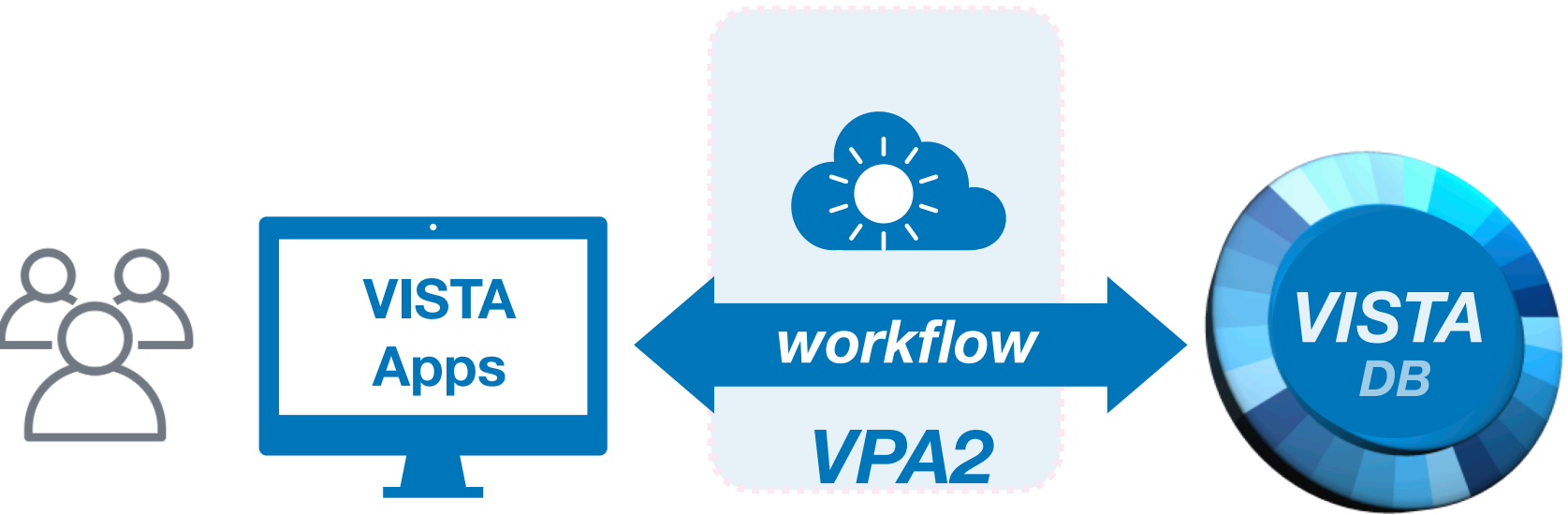
- Be a clinical champion for workflow analytics at their facility*
- Assist with identifying application ‘hotspots’ of inefficiency*
- Offer input on other areas of focus for application analytics*



Questions/ Follow-up

Contact *rafael.richards@va.gov*

Information *cloudvista.github.io/app-analytics*



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