SPLUNK® FOR GOVERNMENT HEALTHCARE
Automating early breach detection and continuous threat monitoring

- **Ensure the performance** and availability of applications, devices and systems, and deliver high-quality application code

- **Secure patient records** and meet compliance mandates

- **Detect fraud** in real time

- **Improve care processes** and operational efficiencies

- **Accelerate research** with rapid data analytics

Demands on Government Health Agencies

Government healthcare agencies are under pressure to operate more efficiently to lower expenses. They're faced with reducing fraud and billing errors, while improving the quality of patient care. This includes delivering better patient outcomes and experiences as they traverse the healthcare system physically and virtually. Additionally, agencies must ensure compliance and security, an even greater challenge as mobile and remote technologies are deployed to enhance services.

To meet these demands, healthcare agencies require visibility and insights into their processes and IT infrastructures—both of which produce vast amounts of data. This data is generated from every click on a web portal, every medical procedure, every completed field, every transaction and every medical claim. The intelligence to improve care, reduce costs and ensure security resides in this data.

Transform Data into Actionable Intelligence

The Splunk platform captures, correlates and displays machine data in real time. Staff, regardless of technical expertise, can visualize the information in dashboards for both panoramic and granular views of operations and IT infrastructures. This enables government health agencies to extract intelligence from their physical, virtual and cloud environments, including all applications, wired and wireless devices.

Government agencies use the Splunk platform to monitor, improve and safeguard their services. Splunk Enterprise is certified as an Electronic Health Record (EHR) Module for Audit Reporting, and was used to remediate a national government healthcare portal. Splunk software now monitors the performance and security of this site, as well as many state healthcare exchanges.

One Platform for Awareness and Analytics

Performance and Efficiencies Through IT Analytics
Government healthcare agencies rely on applications, clinical systems and underlying IT infrastructures to deliver life-critical services. When patient records, applications or medical devices are unavailable, services are delayed, quality of care diminished, and costly errors ensue. Yet systems like EHR, eligibility and claims processing are intricate stacks of applications and managing them and their interactions with each other is challenging.

The Splunk platform provides end-to-end visibility into IT environments and their assets. By correlating and visualizing machine data, agencies gain complete visibility into their applications and hardware—from virtualized systems and firewalls to workstations, medical devices and handhelds. With the Splunk platform, they can:

- Monitor all networked assets, including devices at remote sites or patients' homes, to ensure availability and proper functioning.

- Optimize the IT environment to accelerate the delivery of services and information.

- Ensure availability by having Splunk software issue alerts before service levels degrade.

- Proactively address potential issues before they impair service delivery.

- Track application delivery in real time for remediation, and historically to discern patterns and trends.

- Rapidly access metrics for troubleshooting and root-cause analyses, even in complex application stacks.

- Oversee patient-facing Web applications and services to ensure patient satisfaction.

- Streamline environments and trim costs with data-driven capacity planning.

By tracking relevant metrics in Splunk dashboards, agencies can gain clarity across complex IT environments. Their technologies will perform optimally, enhancing efficiencies, accelerating processes and improving both care and the patient experience.

Security, Privacy and Compliance

Security and compliance are paramount for healthcare agencies; yet sophisticated cyberthreats can evade traditional perimeter defenses and rules-based Security Information and Event Management (SIEM) systems. These solutions are ineffective once an intruder is inside the network or against internal threats, like unauthorized access to medical records.

The Splunk platform transforms machine data into security intelligence. By correlating security and IT infrastructure data, agencies have the visibility to defend critical applications and identify advanced exploits. Agencies can also demonstrate compliance with comprehensive reporting on firewall, access control and application data. With Splunk for security, agencies can:

- Respond rapidly to intrusions, advanced persistent threats (APTs) and other incidents.

- Gain real-time awareness of all networking activities, including data exfiltration.

- Query data to identify and track suspicious behavior.

- Automate the monitoring of security events and set rules for alerts.

- Track and document who accesses confidential records and data.

- Identify security breaches of ePHI records in real time.

- Meet compliance including audit trail collection and reporting, automated monitoring, incident investigation and more.

- Generate compliance reports quickly and easily.

With Splunk software, agencies understand activity in their IT environments, helping to eliminate the shadows in which intruders and internal threats operate. Agencies gain oversight over their applications and data, and have immediate awareness of security events. By correlating physical and digital events, agencies can meet HIPAA compliance and elevate their security easily and cost-effectively.

Real-Time Fraud Detection

Fraud and billing errors cost taxpayers billions of dollars annually. Current solutions that detect fraudulent or incorrect transactions often provide insight only after payments are issued, resulting in an ineffective "pay and chase" model of combating fraud.

The Splunk platform is highly scalable and detects fraud and errors in real time. It monitors for fraud patterns in claims forms by correlating with past profiles, external data available on caregivers or patients. Furthermore, it performs in-depth analytics, correlations, anomaly detections, and pattern detection in real time. Agencies can reduce common billing errors by monitoring systems exchanging transactions. The Splunk platform helps agencies:

- Detect fraud before payments are made.

- Quickly search and pivot through current and historical data to understand a possibly fraudulent action.

- Identify up-code procedures through data correlations.

- Ensure that treatment codes match between systems.

- Analyze and validate healthcare claims for patterns of incongruence.

- Detect common coding errors such as duplicate billing.

- Immediately receive alerts when anomalous transactions appear.

Splunk software offers multiple strategies for detecting fraud and errors, enabling agencies to substantially lower these costs. Most importantly, it can eliminate the need to pursue fraudulent actors by making sure payments are not made in the first place.

Operational Intelligence to Improve Patient Outcomes and Reduce Costs

Healthcare agencies require data-driven insights to enhance service delivery and lower costs. Using the Splunk platform, agencies can gain end-to-end views of all clinical and administrative processes. They'll obtain real-time Operational Intelligence by aggregating local and remote data, from streaming wire data to EHR, pharmacy and billing records, to correlate clinical and IT information. They can track patient flow from scheduling and diagnoses to treatment, billing and follow-up to uncover

bottlenecks, inefficiencies or errors. With these insights, agencies can:

- Lower operational costs and streamline workflows with data-driven process improvement.

- Accelerate claims processing and delivery of time critical services.

- Determine if services are timely and accurate or if devices and handhelds are functioning properly.

- Optimize the availability of resources and data.

- Observe data over time to discern trends and patterns in processes and operations.

- Improve scheduling to more efficiently manage the time of caregivers and patients.

- Receive alerts before thresholds are exceeded or devices fail. Receive notifications, for example, when the helium level on an MRI device is low.

By using Splunk software for Operational Intelligence, agencies will render patient care better, faster and more economical.

Health Informatics From Small to Big Data

From clinical trials to medical research to daily operations, healthcare agencies generate vast quantities of data. Hidden in the data stored in data warehouses and Hadoop environments are new therapies, better efficiencies and invaluable insights that will improve processes and patient care, and add to medical knowledge. Healthcare agencies rely on complex data science tools to analyze these datasets, but big data initiatives require costly expertise and can take months.

The Splunk platform slashes the time to achieve actionable insights and value. Researchers can quickly correlate, visualize and analyze raw, structured or unstructured data from multiple systems at multiple locations. Splunk software can simplify and quicken big data analytics, enabling agencies to:

- Analyze and visualize data in Hadoop and NoSQL data stores without fixed schemas,

costly integrations or migrations to separate in-memory stores.

- Integrate with valuable patient data in relational databases.

- Quickly extract intelligence from data stores regardless of size or location, expediting research projects.

- Extract insight and value from data stores without needing data scientists or data engineers.

- Deploy role-based access controls to permit only authorized personnel to access private information.

Whether projects are small data or big data, Splunk software empowers agencies to accelerate the research and knowledge construction that improve patient outcomes.

Next Steps To learn more about the value that Splunk solutions offer government healthcare agencies, go to splunk.com/publicsector.

Download Splunk for free or explore the online sandbox. Whether cloud, on-premises, or for large or small teams, Splunk has a deployment model that will fit your needs. Learn more.

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