Managing the flow of clinical data

Simplifying your enterprise clinical information systems with IntelliBridge Enterprise

Abstract

Due to rapid technological and legislative changes, the data collection associated with providing healthcare has increased dramatically. As the volume of patient data increases, so does the complexity of the interfaces among medical devices, hospital information systems, and the electronic health record (EHR). Philips IntelliBridge Enterprise (IBE) provides a single point of contact between the EHR and Philips clinical solutions. This reduces the number and cost of point-to-point interfaces, and offers workflow efficiencies to help you improve the quality of patient care.

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Executive summary

Healthcare executives and professionals are under growing pressure in today's changing regulatory environment. They are mandated to reduce the cost of patient care while improving outcomes and expanding access to care, with ever-shrinking resources.

At the core of clinical decision-making is data. Clinicians not only have to do more with fewer resources, but also assimilate a wide variety of information and inputs during the clinical decision-making process to provide the best potential outcomes for their patients. Accountable Care Organizations and meaningful use metrics fundamentally rely on the ability to capture and share rich clinical data. This data must be relevant, timely, and available when and where the clinical staff needs it.

Clinical devices and systems today produce a tremendous amount of data with a high degree of regularity. The number of and variety of clinical devices in a hospital can be high, causing the amount and frequency of data to increase dramatically. Typical ICU patients can have over 10 devices connected to them each producing information every few minutes or even seconds, much of which is sent to the critical care documentation system. This documentation system then sends data to the EHR, the longitudinal patient record.

Multiple systems and devices can feed into the EHR. Typical interfacing models can be highly complex and costly to maintain given the large number of department interface points which a healthcare facility has to maintain. Having to maintain more points of interfacing can potentially introduce errors or system issues. Even upgrading the software of one vendor's system can have a ripple effect on all systems connected to or receiving data from the EHR.

Accordingly, IT departments are faced with managing a highly complex interfacing environment that not only supports clinicians, but seeks to improve clinical workflow. Essentially, many hospitals' IT organizations have become systems integrators and can face a variety of interoperability challenges, including:

- Potentially hundreds of different medical devices in a hospital environment with varying device drivers and compatibilities
- Differing vendors medical devices that may not interoperate with each other
- Legacy protocols used by existing information systems in place in the hospital
- Life-critical equipment with specific requirements necessary to mitigate safety risks
- Varying degrees of interoperability amongst vendors own solutions
- Varying levels of standards support such as IHE, IEEE
- Multiple connection points
- Non-plug-and-play solutions requiring extensive IT resources

An enterprise-wide strategy that focuses on using devices and systems that are easily integrated, that capture a variety of parameters, and are interoperable has many benefits, including:

- Rich data for longitudinal records
- Parameters needed to satisfy professional licensing requirements, regulations, and documentation requirements
- A path to closed-loop therapies
- Richer, more aligned data for research
- Data to satisfy quality metrics, patient safety goals, and internal reporting
- Significant support of third party devices, systems, and drivers
- Improved IT friendliness
- Plug and play capabilities minimizing impact to the IT organization
- Ability to support server virtualization

Healthcare executives, CIOs, and their IT staff must work cross-functionally to understand their existing IT systems environment, the clinical and professional requirements associated with documentation, current and future electronic documentation state, and clinical workflow in order to effectively chart the course toward a solid enterprise device and systems integration strategy. Their considerations should include:

- Workflow associated with departmental documentation, medical device integration, and the organizational roadmap for implementation of electronic charting
- Current and future capabilities of medical devices with respect to integration
- Inventory of existing documentation systems, including vendors and versions
- Existing and future vendor partners' interoperability strategy

Consolidating points of device and systems interfacing and leveraging standards-based platforms are ways that healthcare IT executives can minimize complexity in their IT information systems environment.

Philips Healthcare provides a path toward interoperability with the Philips IntelliBridge family of solutions. One key component of this family is IntelliBridge Enterprise (IBE), an interfacing engine designed to work across Philips solutions and reduce the number of interface points to the Clinical Information Systems (CIS) or EHR.

Industry trends today

The healthcare industry has undergone a significant amount of change in the past several years. Legislative changes, changing demographics, and growing cost pressures have all affected the industry. As a result of these changes, healthcare organizations need to find ways to do more with fewer resources.

Shifting reimbursement models due to cost pressures

The aging population, growth of chronic diseases, and shifting reimbursement models are challenging hospital organizations to change the way they deliver care. The traditional Medicare fee-for-service models were identified by the Medicare Payment Advisory Commission in 2008 as focusing on volume versus quality of care. The report noted:

> "To increase value for beneficiaries and taxpayers, the Medicare program must overcome the limitations of its current payment systems. A reformed Medicare payment system would pay for care that spans across provider types and time (encompassing multiple patient visits and procedures) and would hold providers accountable for the quality of that care and the resources used to provide it. This direction would create payment system incentives for providers that reward value and encourage closer provider integration, which in turn would maximize the potential of tools such as P4P and resource measurement to improve quality and efficiency."[1]

Public and private payers can no longer fund healthcare services without looking at the metrics. They want assurance that services are of the highest quality and offer clear clinical value. Most often, that means asking for quality that can be demonstrated through better patient outcomes, care that is appropriate for the patient, and improvements in patient safety.

Legislated changes

The passage of the Affordable Care Act (ACA) as well as the Health Information Technology for Economic and Clinical Health Act (HITECH) component of the American Recovery and Reinvestment Act (ARRA) are driving rapid changes for U.S. healthcare professionals.

The HITECH Act

The HITECH Act had several major implications for healthcare information technology organizations. The HITECH Act introduced incentives for the adoption and meaningful use of certified EHR technology. Initially, the law put in place incentives to stimulate the implementation of electronic charting and electronic health records, but over time the incentives will be replaced with penalties.

Subtitle D of the HITECH Act emphasizes the importance of the security and privacy of electronic transmission of protected health information. With the onslaught of electronic data capture initiatives, this component of the act has led to an increasing focus on the security and privacy of medical information systems. Even before the passage of the Affordable Care Act, the HITECH Act moved the U.S. healthcare system toward implementing technology to help capture the right data and improve efficiency and care coordination. Ultimately, the requirement to show meaningful use of the technology was designed to drive toward improved clinical outcomes.

The Patient Protection and Affordable Care Act

The Patient Protection and Affordable Care Act, more commonly known as the Affordable Care Act (ACA), was signed into law in March 2010. The law aims to decrease the number of uninsured Americans and decrease the costs of healthcare.

One of the main goals of the ACA is to focus on the quality of healthcare and give incentives to healthcare providers that reinforce quality over the quantity of services provided. A number of federal and state initiatives were designed to help achieve this goal:

- **Comparative effectiveness research:** The ACA created a non-profit Patient-Centered Outcomes Research Institute (PCORI) to conduct research that compares the clinical effectiveness of medical treatments. The law requires, however, that the findings of PCORI research may not be construed as mandates, guidelines, or recommendations for payment, coverage, or treatment or used to deny coverage.
- **Center for Medicare and Medicaid Innovation:** The ACA created the Center for Medicare and Medicaid Innovation (CMMI) at CMS. The purpose of the center is to test innovative payment and health delivery models. Many of the payment approaches included in the ACA are being operated by the Center. These include the demonstrations on accountable care organizations, bundling, medical homes, and the partnership for patients.
- **Health Insurance Exchanges:** The ACA establishes state health insurance exchanges in which individuals and small businesses can purchase health insurance coverage. Starting in 2014, the insurance exchanges will allow eligible individuals, families, and small businesses to shop for insurance coverage.
- **Essential benefits package:** The ACA requires that all health plans for individuals and small groups must provide a comprehensive set of services, called essential health benefits.
- **National quality strategy:** Under the ACA, the government has developed a national quality improvement strategy that identifies broad aims and priorities for achieving high quality, affordable care for Americans. The importance of improving the quality of healthcare and addressing shortcomings such as medical errors, inappropriate utilization, and a fragmented delivery system has been documented widely. Many efforts in the public and private sectors are underway to correct them. In passing the ACA, Congress directed the US Dept of Health & Human Services (HHS) to develop a strategy that would set goals and priorities to help guide these efforts. In March 2011, HHS released its initial quality strategy and plan for implementation. It focused on six priorities:
  - Making care safer
  - Ensuring person- and family-centered care
  - Promoting effective communication and coordination of care
  - Promoting the most effective prevention and treatment of the leading causes of mortality, starting with cardiovascular disease
  - Working with communities to promote wide use of best practices to enable healthy living
  - Making quality more affordable

The plan outlines a range of changes in policies and infrastructure that are necessary to help providers, payers, and others achieve these priorities. These include, among others, changes in payment, public reporting, accreditation, quality measurement, and training.[2]

Health Information Exchanges (HIE)

Health Information Exchanges are IT platforms that are being set up to facilitate the sharing of information across health systems, regions, and providers to enable coordination of care and more patient-centered care. The American Health Information Management Association uses the following definition for HIEs:

> "Health Information Exchange (HIE) refers to the process of reliable and interoperable electronic health-related information sharing conducted in a manner that protects the confidentiality, privacy, and security of the information. The development of widespread HIEs is quickly becoming a reality. Health Information Organizations (HIOs) are the organizations that oversee HIE. For HIOs to function, they must have the capability to employ nationally recognized standards to enable interoperability, security and confidentiality, and to ensure authorization of those who access the information. The HIE implementation challenge will be to create a standardized interoperable model that is patient centric, trusted, longitudinal, scalable, sustainable, and reliable."[3]

These initiatives share a demand for data as the foundation for analysis and evaluation. Much of this data starts with the patient. It will thus become increasingly critical to capture a wide variety of data from the point of care. Clinicians may need to more regularly consider the types of data that the larger care team might need, rather than simply capturing the data necessary for their department or clinical specialty.

Technological advances

Coupled with these changes, rapid adoption of consumer technologies, such as the smartphone, is changing the landscape of healthcare delivery by increasing caregivers' ability to capture and access data. It is the responsibility of IT organizations to figure out how to provide access to this data to the right clinicians at the right time, in a secure and confidential fashion. Ten years ago, the iPad and iPhone did not exist and clinicians were tied to their offices or desks. Now information can be viewed and input from hallway pods in hospitals or from tablets or smartphones in a clinician's pocket. Wireless device capabilities make it easier to transmit this data on a regular basis from the point of care as well. These data inputs must also be captured in the patient's record, whether at the departmental or longitudinal level.

Along with these advances in consumer technology have come similar advances in medical devices, making it easier for systems to capture an increasing number of parameters from the point of care.

The data-driven environment

The changing nature of the healthcare environment now demands the ability to identify and measure outcomes, share information across the care continuum, and improve clinical and operational efficiencies in the name of providing improved quality at a reduced cost. A data-driven environment underlies all of these imperatives. Some studies have indicated that automated data capture and enterprise-wide access to rich data may enable clinical, operational, and financial efficiencies.

For example, the Agency for Healthcare and Research Quality notes:

> "The Institute of Medicine report, Future Directions for the National Healthcare Quality and Disparities Reports (IOM, 2010), highlights the adoption and use of health IT as a tool to manage cost and improve the quality of care delivered. Meaningful use of an EHR, for instance, is increasingly viewed as essential to improving both the efficiency of service delivery and health care quality (Resnick & Alwan, 2010). The potential benefits of EHRs are not limited to hospitals and ambulatory care settings but are also valuable tools in hospice and home health agencies."[4]

Another study notes:

> "Our findings suggest that the implementation of a basic EHR, including computerized physician order entry (CPOE), shows promise in bringing about improved and more efficient nursing care, better care coordination, and safety for patients."[5]

The formation of healthcare information exchanges underscores the push for data exchange and information sharing across regions and providers.

The challenge for the health IT professional is to put together an enterprise-wide integration and interfacing strategy that contends with:

- Support for existing internal systems
  - Growing number of medical devices
  - Increasing number of measured parameters in those devices
  - Highly complex interfacing environments
  - Aging systems with outdated computer protocols
- Potential to interface with external systems such as regional HIEs or physicians' offices
- External pressures, such as the demand to meet new metrics to improve quality, satisfaction, and outcomes
- Internal expectations, such as the requirement to have an accurate, consistent, and complete record of care that can serve many clinicians

Key considerations for enterprise integration and systems interoperability

In addition to regulatory compliance and legislated directives, healthcare organizations are faced with staffing appropriately to address the convergence of information technology and healthcare technology. This convergence is driving the requirement for hospital organizations to be systems integrators – ensuring that multiple systems from different medical device vendors integrate and send data to potentially different information systems' software, which ultimately leads to the EHR, the longitudinal record that reflects all the care they have received.

As a result, many hospitals are looking for systems that provide a high degree of interoperability and more plug-and-play capabilities, as well as partnership from their vendors when it comes to IT risk assessment, management, and systems integration. As noted above, hospital organizations face a number of challenges with respect to enterprise integration and interoperability with their clinical and hospital information systems.

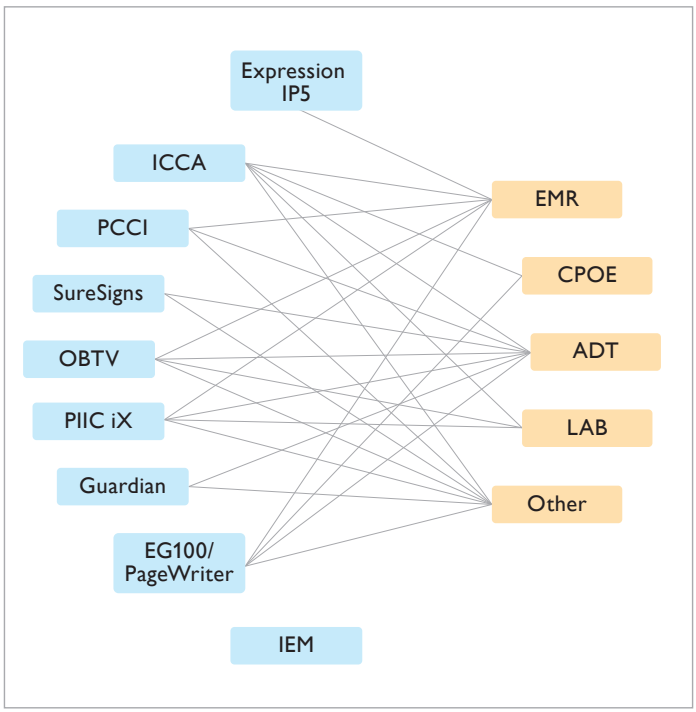
Some key considerations when developing an enterprise-wide information systems interoperability strategy
What is the strategic perspective of the hospital organization with regard to electronic charting or EHRs? Is the facility pursuing a best of breed or best of suite strategy? This will help the organization plan project timelines, departmental applications and their points of interfacing, and help the dialogue with the medical device and systems vendors.
At what stage is the organization in the process of rolling out EHRs?
What is the desired workflow for electronic charting? For example, how will clinicians validate the data if validation is required?
What is the organization's method of standardization? For example, will the organization use a third party for integration?
How many points of interfacing are required?
What are the vendors and versions of the applications being interfaced with?
What devices might need to be interfaced with?
How frequently will the software systems be upgraded?

IntelliBridge Enterprise overview

One interfacing engine, one solution

Philips IntelliBridge Enterprise provides a single point of contact solution for bi-directional interfacing and communications between your hospital information systems and Philips clinical informatics solutions and medical devices. IntelliBridge Enterprise provides a single path to exchange data such as ADT, labs, orders, vital signs, alarms, and documents between your EHR and Philips clinical systems. IntelliBridge Enterprise enhances your EHR investment by providing rich clinical data from Philips monitoring and clinical IT systems directly to your clinicians through your EHR and providing EHR data necessary to support clinical workflow and decisions at the point of care through Philips bedside systems.

At the same time, IntelliBridge Enterprise helps you simplify the management of your clinical information systems and devices by providing a single point of contact (one interface) between your core clinical IT assets and many Philips clinical systems. By helping to simplify your IT interfacing architecture and minimize integration effort and cost, IntelliBridge Enterprise may represent an efficient, cost-effective way to provide interoperability between Philips systems and your EHR, enhancing the value of your IT investments and improving their clinical impact.

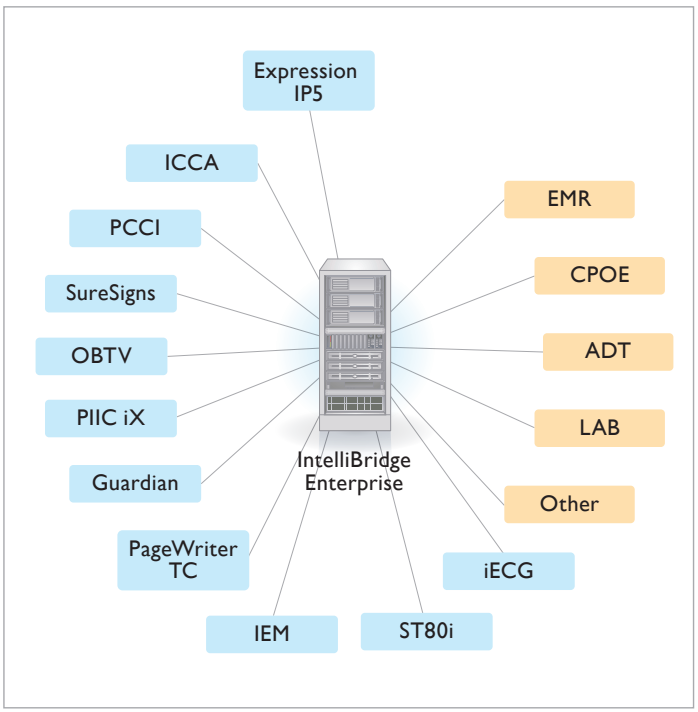


Philips Solutions in Customer Environments – Before IBE

Multiple connections with Philips;

Multiple Connections with HIS/EMR vendors

Result: Very High Total Cost of Ownership



Philips Solutions in Customer Environments – After IBE

Reduced connections with Philips;

Reduced Connections with HIS/EMR vendors

IntelliBridge Enterprise benefits

- Reducing the complexity of your IT integration infrastructure by providing one point of contact for most Philips systems
- Reducing total cost of ownership by reducing your investment in point-to-point interfaces and associated maintenance and other costs
- Providing one point of contact for Philips systems for simplicity
- Delivering patient information to caregivers throughout the continuum of care faster, more efficiently, and with lower cost compared to having multiple interfacing points
- Providing an extensible platform on which to add new Philips systems, new IHE profiles, and new Philips product extensions as well as a comprehensive management toolset
- When integrating Philips IntelliVue patient monitoring systems:
  - Supports an Admit Discharge Transfer (ADT) interface to your monitoring environment, enabling patient matching and identification electronically
    - Allows clinicians at the bedside or at the central nursing station to select the appropriate patient from the list of currently admitted patients, automatically sending the relevant ADT information to patient monitors
  - Waveform snippet import directly to your EHR
    - This eliminates a multi-step process of printing, scanning, and attaching a waveform snippet by directly importing a selected area of the waveform into the EHR from the central station
    - Patient ID and visit numbers from ADT included with waveform in the EHR
    - Provides that important patient monitoring records are reliably and securely saved in the patient's lifetime medical record

Current Philips IntelliBridge compatible solutions

IntelliBridge Enterprise provides a comprehensive set of interfaces (inbound and outbound) to the following Philips products:

- IntelliVue Information Center (PIIC) monitoring solution
- IntelliVue Information Center iX (PIIC iX) monitoring solution
- SureSigns (VS and VM) monitors
- IntelliVue Guardian Software (IGS) early warning scoring solution
- IntelliSpace Perinatal OB charting solution
- IntelliSpace Critical Care and Anesthesia (ICCA) Intellibridge SC 50
- Expression Information Portal (IP5)
- IntelliSpace Event Management
- eCare Manager
- Philips Cardiology systems (Pagewriter, Stress ST80i, Holter)
- IntelliSpace ECG Management System
- Xcelera*
- More Philips systems are added regularly

IBE software includes tested, Philips product-specific solutions for each IBE compatible product. This includes pre-validated configurations that help to reduce implementation costs. IBE also has Philips Shared Services within the product which enables staged services to persist data for multiple application use, e.g., patient index (ADT), orphan pool (for patient data like labs, orders, HIF, CDR) offering more than just data translation. IBE is a platform designed to anticipate the future needs of clinical applications.

Additional implementation services (value-added services) are also offered. Philips Integration Services provide project management, infrastructure consulting, procurement, interface mapping and configuration, and acceptance testing to help ensure effective data integration. Philips Integration Services also provide interface consulting and development for these systems and interfaces.

In addition to minimizing points of interfacing, providing troubleshooting tools for data streams from Philips systems, and offering an extensible platform onto which new Philips clinical technology solutions can be added, IBE offers workflow benefits, as detailed in the next sections.

* IntelliBridge Enterprise for Xcelera is not yet available for sale.

IntelliBridge Enterprise and IntelliVue Patient Monitoring System

The IntelliVue patient monitoring system generates real-time physiological waveforms, trends, and alarms from networked IntelliVue wired and wireless monitors and sends them to the Philips IntelliVue Information Center (PIIC) or PIIC iX. The PIIC iX stores short-term monitoring data and may also export this data to a hospital information system to be stored in an EHR. This system includes a number of software and infrastructure components that are dependent on the size, scalability, clinical workflow, and departmental needs of the clinical end users.

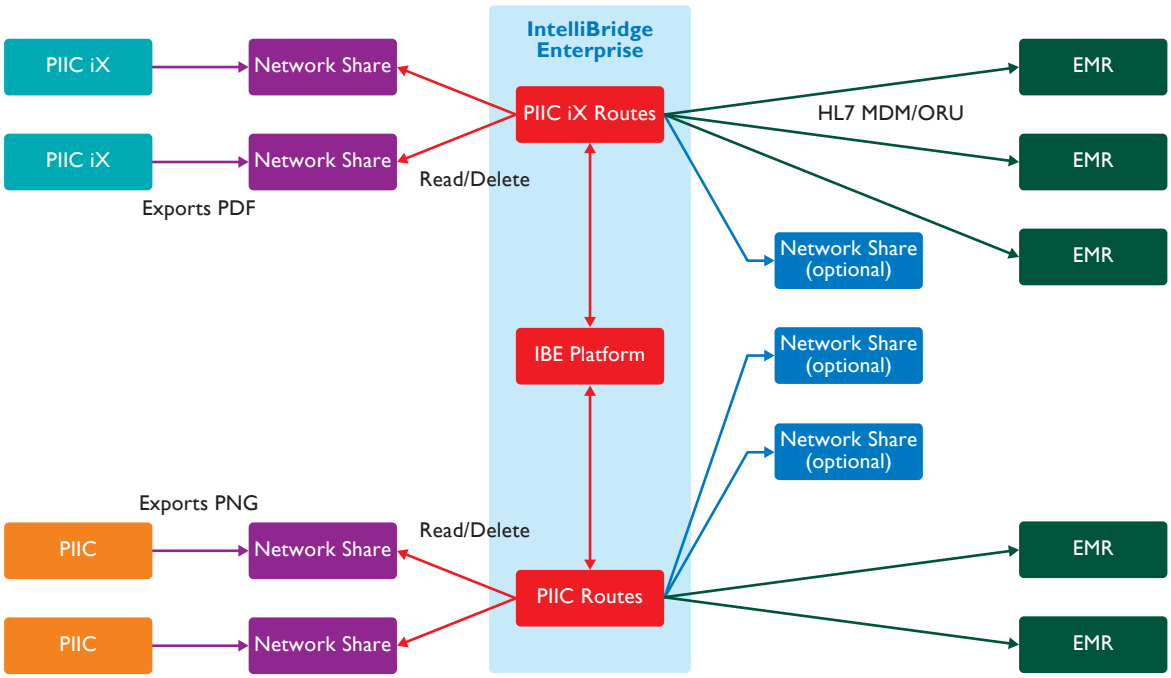
The components of the system include:

- IntelliVue patient monitor or patient-worn device – either for cardiac telemetry monitoring or a bedside monitor. These devices communicate real time waveforms to a central surveillance station.
- Philips IntelliVue Information Center (PIIC) which can either send data directly out via HL7 or work with servers that send data out via HL7.

  Or
- Philips IntelliVue Information Center iX (PIIC iX) software which can either send data directly or use a primary server to send data out via HL7.

The PIIC or PIIC iX servers send data out to IntelliBridge Enterprise. In addition to providing a platform for ADT inbound to the IntelliVue monitoring system, IntelliBridge Enterprise can also provide some clinical workflow enhancements such as waveform export. PIIC allows users to save waveform strips as PNG files. IBE can facilitate a file transfer to HIS, EHR, or any other similar application through this interface. PIIC iX also supports the export of waveform strips to local systems. IBE enables transfer of these waveform strips to the Hospital External Systems. IBE also facilitates the mapping of PIIC iX observation messages such that they are compliant to IHE PCD 01 and ACM message profile.

The value of this workflow enhancement is twofold. First, it can enable clinicians to move away from the manual method of printing out waveform snippets, taping them to paper, scanning or faxing them into a record. Second, it can minimize some of the costs associated with the thermal paper that is used in this process by sending it electronically to the EHR or CIS, rather than printing.



IntelliBridge Enterprise and SureSigns patient monitors

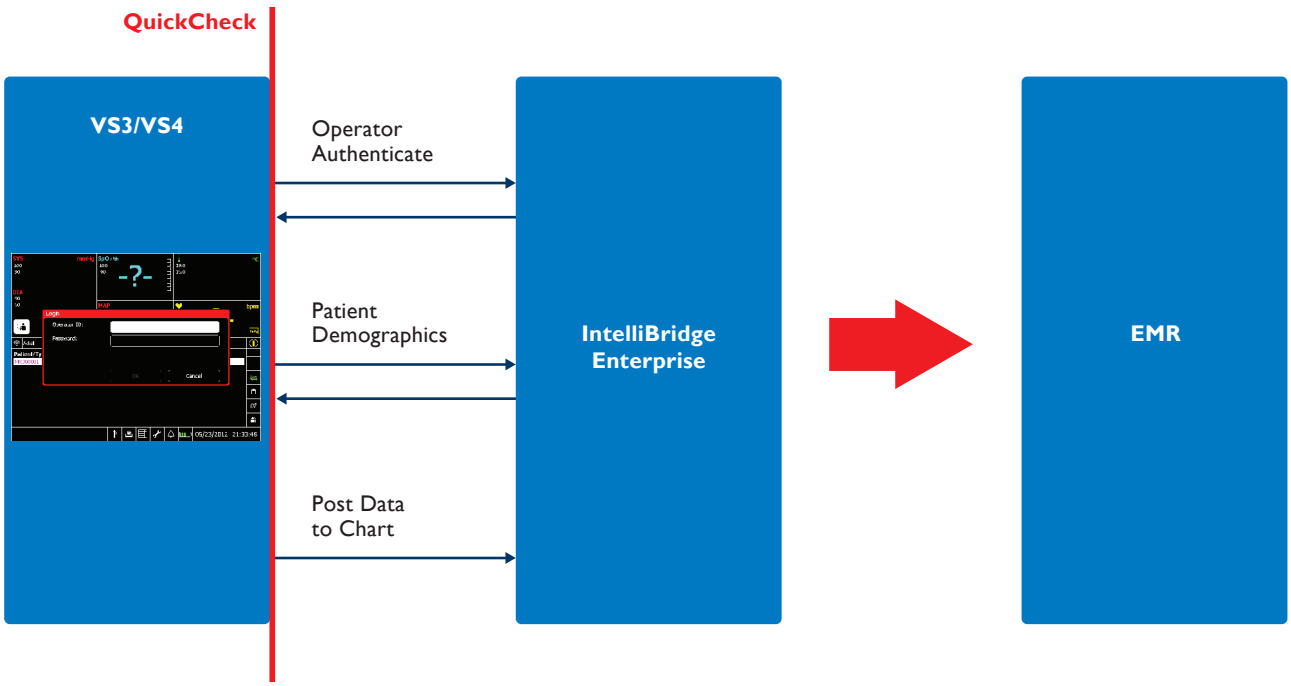
Caregivers know that spending more time with patients translates into better patient care, so they constantly struggle to minimize the tasks that prevent them from providing care. Philips SureSigns VS2+, VS3, and VS4 monitors are spot check vital signs monitors used to measure blood pressure, pulse oximetry, pulse rate, and temperature. SureSigns VS3 and VS4 also gather up to 20 customer defined observations or assessments.

While patient record documentation is one of caregivers' most important responsibilities, it can also be one of the most time-consuming activities in their day, as indicated by a 36-hospital time and motion study. This study indicates that "changes in technology, work processes, and unit organization and design may allow for substantial improvements in the use of nurses' time."[6]

The SureSigns monitors were designed around the end user with an intuitive user interface that is incredibly easy to use. Pair that with our innovative data export capabilities for the SureSigns VS3 and VS4 and the QuickCheck workflow tool and you have a system that simplifies patient documentation.

SureSigns QuickCheck feature works with multiple workflow models, from bedside mounted to mobile monitoring. QuickCheck leverages Philips IntelliBridge Enterprise to provide true in-monitor bedside record validation, including caregiver authentication and ADT patient ID confirmation, allowing caregivers to send validated records directly into the EHR.

Efficient electronic vital signs transmission means caregivers can spend more time with patients. QuickCheck can help improve clinical workflow by providing that patient data is efficiently entered into the patient's record, which could then lead to enhanced outcomes.



IntelliBridge Enterprise and Philips IntelliSpace ECG Management System

Philips IntelliSpace ECG Management System is an enterprise software solution which supports multi-modalities, such as, ECG, stress, and Holter data and provides advanced bi-directional communication, including ADT.

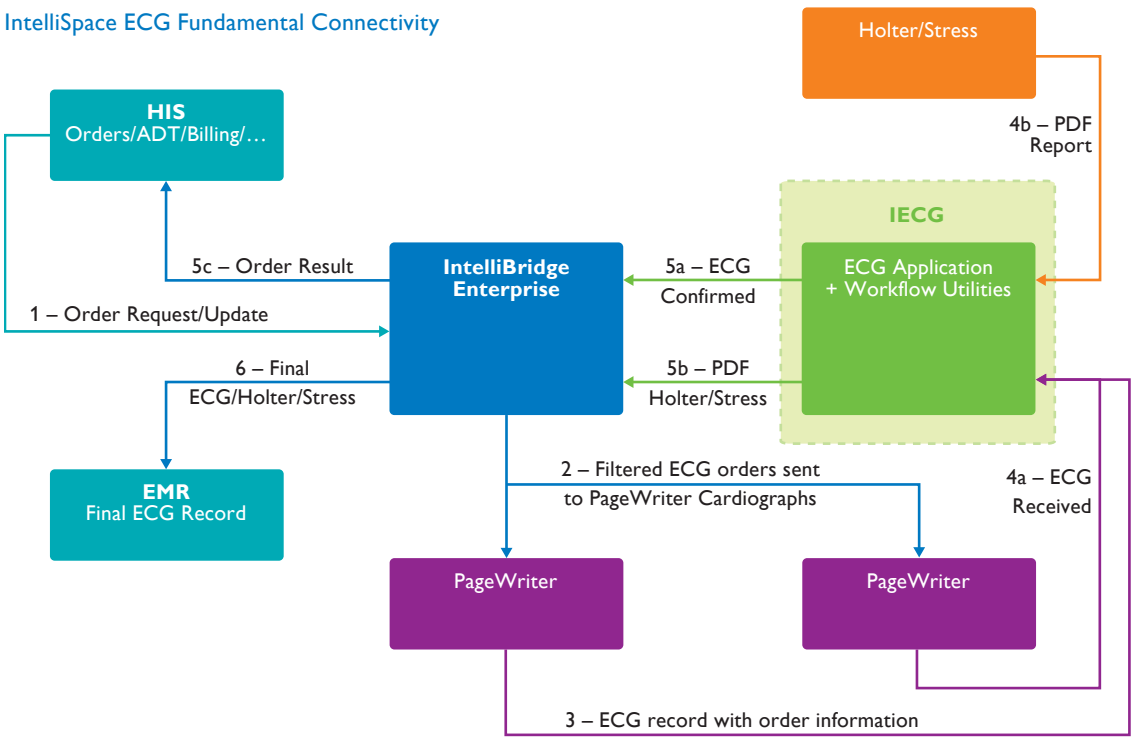
IntelliBridge Enterprise also provides a platform for bi-directional communications between Philips IntelliSpace ECG Management System and your enterprise information systems in a cost-effective and efficient manner. By providing a smooth flow of patient information and easy access to resting ECG, Holter, and stress reports from within or outside your clinical department or institution, your clinical team can integrate ECG reports into their clinical workflow where and when they are needed.

By supporting a two-way exchange of information, IntelliBridge Enterprise provides for streamlined, standards-based communication with enterprise clinical and administrative systems for demographics, order worklists, and distribution of results. On the inbound side, patient demographic data and order information can help improve your workflow by facilitating worklists at the ECG cardiographs, reducing the need for manual data entry, and improving the quality of data. Outbound connectivity to third-party information systems allows prompt distribution of clinical reports, results, and coded information for purposes such as billing.

Additionally, a hospital enterprise may consist of a number of hospitals or locations, and information may come from more than one hospital information system. Multiple inbound and outbound connections are available if an organization intends to connect several instances of a particular type of system. For example, a number of hospital sites may have more than one ADT system; each system would therefore be required to send patient demographics to IntelliBridge Enterprise.

With IBE

IntelliSpace ECG Fundamental Connectivity



IntelliBridge Enterprise (IBE) and Xcelera

Philips Xcelera cardiology PACS is an integrated multi-modality image management system for cardiovascular information. The enterprise topology of Xcelera can provide cardiac image viewing, reporting, and archiving functions for the cardiology labs of a large, multi-hospital healthcare organization.

IntelliBridge Enterprise interfaces between imaging modalities and Philips Xcelera by providing DICOM-based services such as DICOM Modality Worklist (DMWL) and Modality Performed Procedure Step (MPPS). IBE simplifies the connection by serving as a central point for data exchange. The data consists of demographic patient information, schedules, textual information, and text and PDF reports.

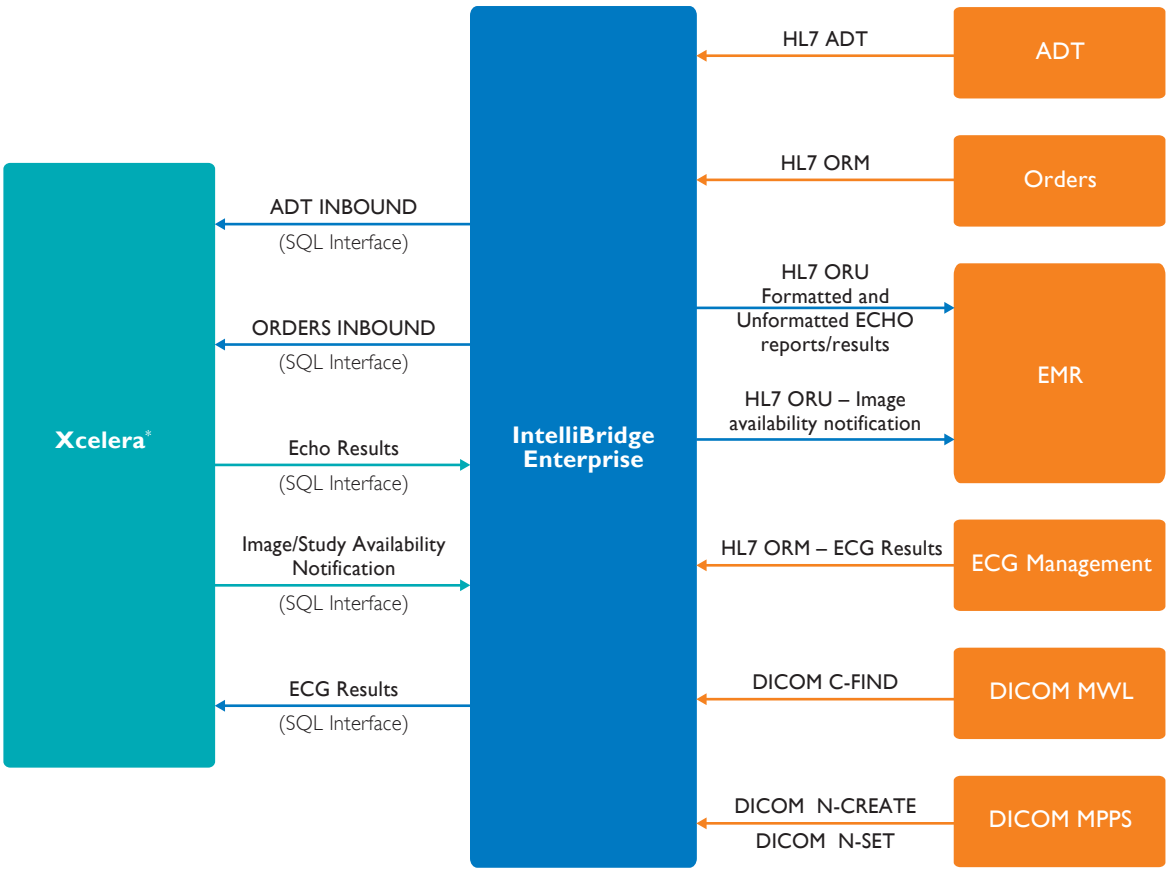
In a large, multi-hospital organization, the different types of HIS in the participating hospitals may each send their ADT data and examination request orders to the single, centralized Xcelera and IBE configuration. Both IBE and Xcelera can be staged in high-availability and multi HIS/CIS configurations.

Xcelera interfaces include:

- ADT inbound
- Orders inbound
- Results outbound (formatted and unformatted text)
- DICOM, MWL, and MPPS

Additional capabilities include:

- Echo reports/results (interface)
- DICOM MWL/MPPS (throughput) performance boost to operate effectively in an enterprise environment
- M2M (Machine to Machine) service support for enhanced monitoring and support



* IntelliBridge Enterprise for Xcelera is not yet available for sale.

Note: IBE supports Xcelera release 3.3.*

IntelliBridge Enterprise toolset

IntelliBridge Enterprise also provides value-added support and configuration tools. These tools can be used by customers for management, configuration, audit trails, and troubleshooting:

- **Management console and tools** – a comprehensive set of tools to manage the interfaces and create logs of unresolved messages so administrators can remedy errors
- **Configuration wizard** – UI-based application that provides step by step help in installation of required components
- **Audit trail** – UI-based application that provides a detailed view of interfacing changes including time and user information
- **Alert viewer** – Allows data management users to view and take action on unvalidated patient data. Alert viewer application enables user to view any errors or exceptions which may occur during patient data transactions

* IntelliBridge Enterprise for Xcelera is not yet available for sale.

IntelliBridge Enterprise Service

IntelliBridge Enterprise will be deployed with the Philips Service Agent (PSA), allowing Philips personnel to provide secure remote support via the Philips Remote Service M2M Enterprise environment.

The PSA solution will allow the Philips remote service provider to securely:

- Connect to the IBE device via Windows Remote Desktop (RDP)
- Transfer files to and from the IBE device
- View/update a set of readings about the IBE device (e.g. disk space size, disk space available, hostname)

IBE Software Maintenance Agreement

Philips Healthcare's Software Customer Services organization delivers a full range of support:

- 24 x 7 access to technical experts in Philips USA-based Customer Care Solution Center
- Remote access technologies and processes that provide secure, timely, and traceable troubleshooting and problem resolution
- A Philips-wide, formal escalation policy that creates urgency for special challenges
- Delivery of software updates and upgrades with installation and clinical education services
- Solution enhancements including ongoing clinical education and consulting services

Conclusion: What IBE means for you

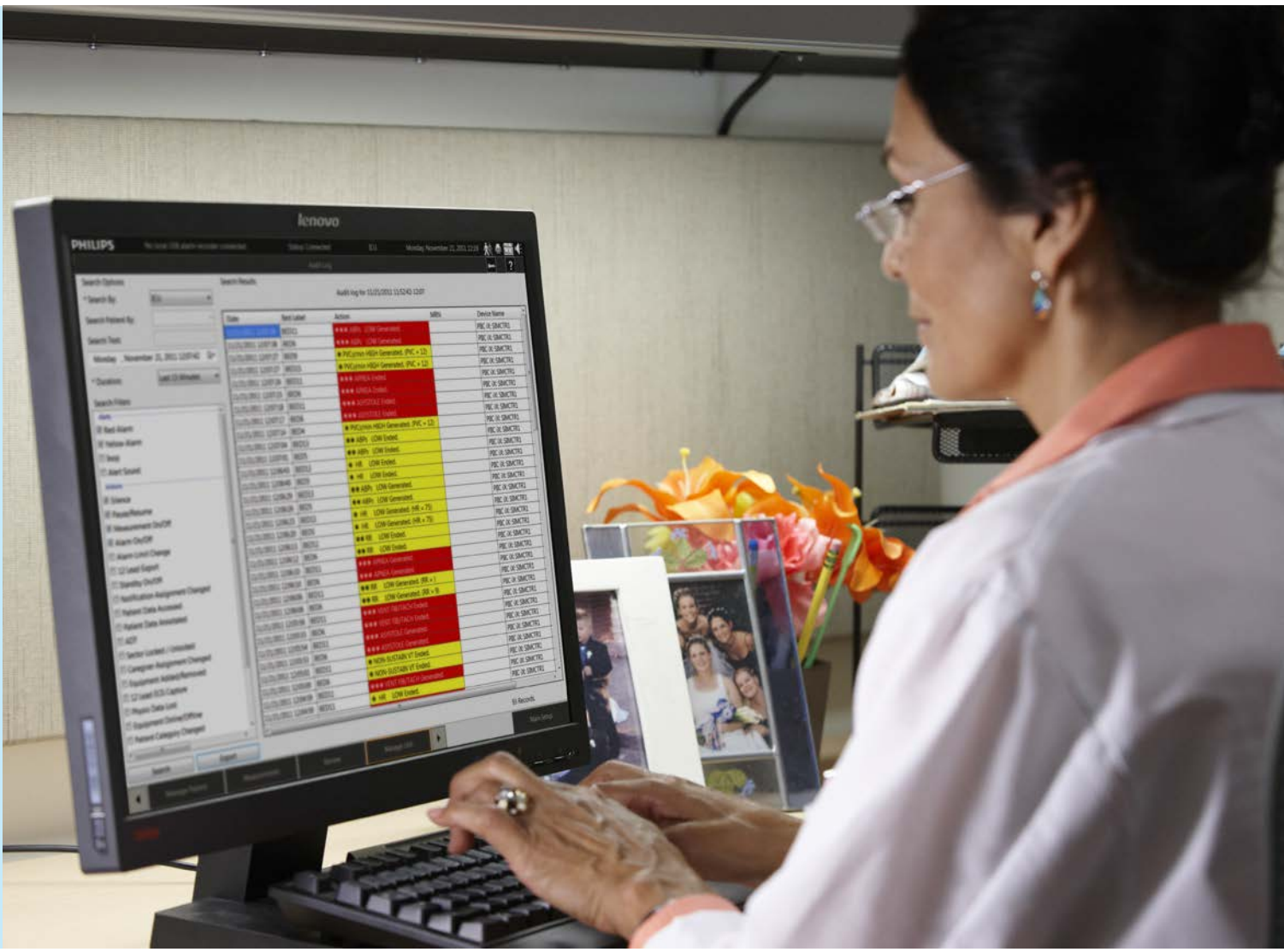
Philips IntelliBridge Enterprise can offer clinical and financial workflow efficiencies, like importing waveform snippets into the EMR and integrating ADT information at the bedside, that can help you respond to the changing healthcare environment by enabling access to more electronic data and streamlining the integration of data between Philips solutions and the EHR.

The shift in healthcare payment from volume to value will increasingly reward the adoption of electronic records and the collection of rich data. The thoughtful, comprehensive collection of clinical data, with the requisite analysis, could help healthcare organizations demonstrate patient outcomes and meaningful use to their customers as well as regulatory agencies. Additionally, improvements in clinical workflow can positively impact caregivers' ability to spend more time with patients.

As healthcare organizations move towards integrating more clinical data from devices and hospital information systems into a patient's EHR, it's important to design and roll out an interoperability strategy based on an enterprise approach versus a department-by-department effort. Historically, this is how interfacing has unfolded, resulting in increased complexity for the IT systems team.

As an enterprise-based, extensible interfacing platform based on standards such as HL7, IHE, and DICOM, IntelliBridge Enterprise may help reduce the complexity and cost of systems interfacing. Philips IntelliBridge Enterprise provides a single point of contact between your EHR and most Philips solutions, offers improvements in workflow and management tools to assist IT with interface troubleshooting.

By committing to standards such as IHE and building a platform that can be extended, IBE can help you enhance data collection and improve workflow. By providing a single point of contact between Philips solutions and the EHR, IBE can also help simplify your integration solution, bringing down the overall cost of ownership. And by helping you increase the richness of your data, IBE can help you meet the challenges of a rapidly changing healthcare and regulatory environment.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