



Summary: This whitepaper briefly describes an example patient journey from arriving at the ER, going through a procedure, transferring between different nursing units, and being discharged. The goal is to relate some steps in the patient's journey to some features of the Vigo System and VistA. VistA is an open-source EMR system used by VA hospitals. Clearly, a brief paper cannot describe all of a hospital's activities, all Vigo's features or all the interactions. The goal is to provide a feel for what the system is capable of doing.

Case Scenario: ER Acute Chest Pain

A 55-year-old male, war veteran, presents to a VA Hospital's Emergency Room (ER) with complaints of chest pain. On a pain scale, he indicates a 10 out of 10. Anti-acids, drinking water and sitting down have provided no relief. Patient has shortness of breath (SOB) and is Diaphoretic (excessive sweating). His wife drove him to the ER. Patient was mowing the lawn, when he started to have chest pain. After thirty minutes, his wife convinced him to go to the hospital.

Admission to ER: Patient is admitted to the ER and assigned a patient ID. VistA sends HL7 records whenever a patient's status changes. When the patient is admitted, Vigo receives an ADT (Admission, Discharge, or Transfer) record in HL7 format from VistA, which includes: patient's name, patient ID, and other information. If the message is formatted correctly, contains the correct information, and is accepted by Vigo then Vigo sends an acknowledgement record (ACK) to VistA. HL7 records are used to track a patient's movement through the hospital, as well as, transmit other key information.

Reference: [Department of Veteran Affairs, Vista Home Page](#)

Emergency Room: In the ER, the Patient's History is taken:

Pt HX: hypertension (HTN), Hypercholesterolemia, Smoker, disabled significant procedure (s/p) stroke left (L) side (x 1 year ago) with residual, and averages one alcoholic drink daily (ETOH).



Login: Patients or visitors never have to login. Hospital staff can access clinical applications and other features. Access to clinical applications and other features requires a login. Vigo provides multiple login options. A commonly deployed option is a hotkey combination, which prompts the nurse for a username and password. Other options include a badge swiped through a card reader, or an RFID tag embedded in the nurse's badge. The badge eliminates the need to enter a username and password.

When the nurse enters a username and password, the login is authenticated through the hospital's LDAP or Active Directory server.

Bedside Charting: Once logged-in, the nurse is presented with a staff menu. For this example, one of these menu items is VistA. Any EMR, HIS system could be used. VistA is a commonly used HIS system in VA hospitals. By going into the staff access menu, a nurse can access VistA and enter the Patient's History. Vigo can fill in certain fields automatically, such as, patient ID and patient name. This data comes from HL7 records. Vigo retains minimal patient data.

The Vigo OneTouch™ has a scissor arm mounted to the head wall of the patient. Vigo's small size consumes minimal wall space. The scissor arm extends over 60 inches and can swiveled almost 360 degrees so the patient or family members can use the unit, or hospital staff can use the unit for bedside charting. The whole unit easily swings out of the way in an emergency.

Vigo OneTouch is normally installed in areas that do not have a footwall (ER, Dialysis, Rehab, etc) or have limited space.

An on-screen keyboard or an optional medical-grade keyboard and tray is provided with Vigo. A medical-grade device is any device, which the patient can touch without getting out of bed. Medical grade devices can be sanitized and are resistant to bodily fluids entering any enclosed spaces.

Triage: Triage is done at the bedside. Patient procedures include: EKG, Chest X-ray, Labs, Meds, call placed to cath lab. The EKG reveals acute MI (STEMI).

Reference: [Journal of the American College of Cardiology, ACC/AHA Guidelines for the Management of patients with ST-Elevation Myocardial Infarction \(STEMI\)](#)



Health Education Videos: Vigo provides multiple ways to prescribe health education videos. An attending nurse can prescribe videos manually to each patient as required.

For this scenario, we will assume the hospital has a full-time Nurse Educator. An efficient method is for Vigo to auto-prescribe videos based on a patient event. Events can include being diagnosed, being admitted, transferring to a certain nursing unit, having a procedure scheduled or having a procedure completed. Vigo events are very flexible.

Prior to installation, ATI works with the hospital's Nurse Educator to select appropriate health education videos, and assign health education videos to diagnosis codes and events. If the hospital doesn't have a nurse educator, then ATI works with a qualified Nurse Educator to perform this task.

When an event occurs, VistA sends Vigo an HL7 record, which includes the patient ID and a corresponding event code. In this case, Vigo receives an HL7 record containing a diagnosis code indicating the patient is diagnosed with STEMI. Diagnosis codes can conform to standards (DRG or ICD), or diagnosis codes can be unique to a hospital.

Vigo can receive multiple records about a patient. The record(s) may also indicate the patient is a smoker, has high cholesterol and has been prescribed various medications.

Vigo uses this information, along with the expertise of the hospital's Nurse Educator to automatically prescribe health education videos to the patient. A Nurse Educator will assign one or more videos to an event. Auto-prescribing videos is done through Vigo's Customer Portal on ATI's website. Prescribed videos may cover medications, procedures, and the diagnosis. Health education videos ensure patient and family members understand processes and procedures.

Catheterization Lab: When the patient is taken to the Cath Lab, which should be within 90 minutes of diagnosis, family members can scan through available health education videos and learn about PTCA and Stent placement.

Health Education Videos can describe the procedure in detail, and can explain post procedure protocols. Some hospitals choose to have less detailed explanations than others. Sometimes too much information can cause undue anxiety or stress. Since each patient might have unique issues, a hospital might decide that a Physician is better at explaining the benefits and risks of a procedure. Health Education Videos are then used to explain common issues, regardless of a



patient's unique situation.

Example of post procedure protocols might be: the patient will have to remain flat for 4-6 hours until sheath is removed, explain why the sheath is still in place (ACT), and detail the dangers of the patient not complying. The family and patient may be told about serious symptoms (SXS), which require a call to the nurse: sharp shooting pain, bleeding from site, a warm sensation in the area, chest pain, SOB etc.

EducationRx: Vigo calls the entire set of health education videos, notifications, surveys, and related reports and configuration utilities, EducationRx. EducationRX focuses on prescribed videos. All prescribed videos are date and time stamped. Vigo can report on how much of a video was played and when it was played.

Anytime someone accesses a report that contains patient data, information about the person and computer accessing the data is logged per HIPAA requirements.

Patients are prompted when a video is prescribed, and they are asked to take a short test following completion of a video. If a patient fails a comprehension test, the appropriate nurse can be notified to follow-up with that patient. Data about the video and the test can be written back to VistA.

Hospital administrators can view reports about EducationRx. Ensuring patients understand the videos can be of assistance for JACHO, QA/QC, chart audits, and patient or family satisfaction. If legal issues should arise, having this documented could be of value.

Stent Placement: Patient has procedure for X2 stent placement Right Coronary Artery (RCA) and CIRC.

When the patient is in the interventional unit or step down (until sheath removal), VistA records the movement of the patient through the hospital and reports this information via HL7 records to Vigo. For example, VistA captures the patient transfer from cath lab to the step down unit. Any nurse or auto-prescribed video is forwarded to the patient's new location.

Whiteboard: Vigo has an optional electronic whiteboard feature. This allows patients or family to write notes to doctors or nurses, and for nurses to record information about the patient. An



electronic whiteboard cannot be accidentally erased, by visitors. A nurse can review and make changes in one place, rather than going into each room.

At most hospitals, the HIS system does not track this type of information. If VistA tracks Doctor's orders or nursing protocols, then this information can be sent to Vigo, and updating the electronic whiteboard can be performed automatically. In addition, if the hospital uses a staffing tool, the whiteboard can be updated when the nursing shift changes.

For the patient in this scenario, a BR (bed rest) icon will appear whenever the TV is on, regardless of what is being viewed. Any provider coming in the room will be aware without having to check the chart that this patient cannot be out of bed.

An electronic whiteboard saves valuable time for nurses and staff, while advising ancillary to not assist the patient to the bathroom. This feature has the potential to reduce errors in patient care.

Vigo's electronic whiteboard has many icons: BR, FALL, NPO, INO, and so on. The alert (!) symbol tells staff to click and view any special comments or considerations regarding the care of that patient or the family's concerns. A nurse can also track the patient time of BR in this location for ease of care. The nurse can simply enter in time for sheath pull at time HH:mm, when bed rest began (BR start @ HH:mm), time at next draw (ACT @ HH:mm).

Hospital staff has information at their fingertips without needing to consult with paper charts. The goal is to improve safety, functionality and avoid errors in patient care.

When the sheath has been removed, the whiteboard can be updated. The BR icon can be removed and replaced with fall risk (FALL), which alerts all staff the patient is not to get up alone. Preventing falls is a key safety measure for JACHO. In addition, changing the status can trigger an event, which prescribes a fall prevention video being prescribed to the patient. Again, this can be done manually or by sending HL7 records between VistA and Vigo.

Transfers: A patient may not be up to watching videos, while in recovery, ICU or a step down unit, such as PCU. Some rooms may not even have a Vigo system. When the patient is moved to a new room with a Vigo system, all prescribed videos and surveys follow the patient.

When the patient is in their assigned room videos for post procedure care can be assigned (again auto or nurse). These videos may include stent awareness, what that means etc., the importance of keeping their card in their wallet and the patient's family will also be aware of where the stents



were placed and why should the need arise for them to repeat it to another care provider or facility.

Cardiac Unit: Upon arrival in the Cardiac Unit room, the patient is given a “tour” of the room video as well as a welcome video from the hospital. The tour of the room describes the room, its equipment, and an overview of the plan of care.

Meal Ordering: Patient can also view heart healthy menu to order meals. Appropriate dietary restrictions can be imposed by Vigo or the Food Services system. This saves nurses time and helps prevent dietary errors regarding prescribed diet.

Sample Prescribed Videos:

- CAD
- Blood pressure- monitoring & control
- Lipid management
- Medication (Plavix w/risks, warnings and side effects regarding the continued use of blood thinners) - Standard of care to give patient’s an updated list of medications prior to discharge. – Also allows patient and family to ask questions and take part in their care regimen.
- Dietary
- Follow up
- SXS of heart attach/ when to call 911 or go to the ER
- Care and maintenance of their wound (when to remove dressing, avoid tub baths, SXS of infection etc).
- Smoking cessation (mandatory for hospitals to provide)
- Lifestyle modifications

Vigo allows patient and family members to view videos multiple times if wanted or needed to further aid comprehension.

Discharge: Using the Vigo system, the nurse can quickly check if the patient has viewed all prescribed videos. She/he can check that the patient has comprehended the videos and explain



any items that were not understood. Vigo automatically sends message to housekeeping to clean room (with choices for STAT, Terminal, routine).

Before discharge, Vigo can auto-prescribes a survey regarding the patient's care. This survey is confidential and if forwarded to appropriate hospital personnel. If there is a problem with the patient/ family satisfaction appropriate personnel (i.e. supervisor) is alerted and allowed time to respond and correct any issues in "real time".

Rehab: This patient needs to go to a cardiac rehab center for endurance, and supervised exercise training for increased independence with activities of daily living (ADL). Vigo can locate lower cost facilities and provide options near the patient's home. The patient and family can decide where they would like to receive continued care.

Data Center Location: A hospital may choose to have the Vigo database located in its IT center rather than at ATI's Data Center in Austin. This is a very expensive option and adds significant cost because of maintenance, licensing and added travel.

Example Hospital benefits of using Vigo:

- Ensured patient comprehension and compliance with standards of care.
- Record of education and patient involvement in their care.
- Reduction in errors by providers licensed and unlicensed.
- Increased patient safety and satisfaction
- Reduced burden to nurses
- "Real time" alerts to appropriate personnel of patient satisfaction or below standards of care provided.

Example Nurse Benefits of using Vigo:

- Bedside charting with safety alerts (diminishing the need for redundancy, and time to go to patient chart)
- Safety- alerts are clearly visible to all providers (whether its "your" patient or not)
- Time saving: nurses don't have to verbally go through EducationRx
- Nurses can give discharge instructions by video first
- Increase nurses satisfaction decrease burnout by automating manual tasks
- Gives the nurses more time to spend at the bedside with Patient and family.
- Cleaning turn around time for room.



- Vigo automatically sends a message to housekeeping eliminating the need for the nurse to call or put in a manual request for dc clean. This also assists Bed Management to see what rooms are available without having to call the unit for updates.

Vigo helps quality control, patient satisfaction, current evidence based practice, and patient safety measures that can be easily accessed and reproduced for intra-hospital, national regulations, research, and QA/QC.