

# Health Informatics

Telemedicine

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# Disclosure

I do not have any financial arrangements or affiliations with any commercial entities whose products, research or services may be discussed in these materials.

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# Section 1

## Objectives

## Six learning objectives

Upon completion of this program, participants should be able to:

1. List several new applications of Health Informatics
2. Describe the different types of telehealth
3. Provide telehealth workflow examples
4. Recognize the role of staff buy-in for successful telehealth implementation
5. Address barriers to patient engagement
6. Describe how health informatics can reduce adverse outcomes

# Section 2

Brief overview of Health  
Informatics


# What is Health Informatics?



According to AMIA, “Biomedical and health informatics applies principles of computer and information science to the advancement of life sciences research, health professions education, public health, and patient care. This multidisciplinary and integrative field focuses on health information technologies (HIT), and involves the computer, cognitive, and social sciences.”

According to HIMSS, “health IT is interprofessional by nature and must be reflected in education and training.”




# Application of Health Informatics by multiple professions


 [Activities](#) Visual settings Edit

When poll is active, respond at [PollEv.com/salvolpe553](https://PollEv.com/salvolpe553)  
Text **SALVOLPE553** to **22333** once to join

## List professions, business and institutions that you would associate with using Health Informatics

 No responses received yet. They will appear here...

Powered by  **Poll Everywhere**

# Professions and Businesses

Attorneys

Dentists

Geneticists

Health Insurance Companies

Hospitals

Nurses

Nurse Practitioners

Pharmacists

Physicians

Physician Assistants

Privacy and Security Experts

Public Health Officials

Workforce

# Types of Telehealth

## Synchronous

Live audio or audio/video communication

## Asynchronous

Store and forward (ie. Dermatology photographs)

Remote patient monitoring (ie. ECG, BP)

# Section 3

Telemedicine use cases

# Medical Conditions

The screenshot shows a mobile interface for a Poll Everywhere poll. At the top left is a bar chart icon. Below it is a vertical sidebar with three icons: a bar chart, a list, and a document. The main header area contains a back arrow, the text 'Activities', and two buttons: 'Visual settings' (with a brain icon) and 'Edit' (with a gear icon). Below the header is a light gray banner with a globe icon and the text: 'When poll is active, respond at **PolleEv.com/salvolpe553**' and 'Text **SALVOLPE553** to **22333** once to join'. The central question is 'What medical conditions might be conducive to telemedicine?'. Below the question is a white box with a loading icon and the text 'No responses received yet. They will appear here...'. At the bottom is a white footer bar with the text 'Powered by' followed by the Poll Everywhere logo and name.

# Medical Use Cases: Acute care

Allergies, asthma and sinus issues

Arthritis pain

Colds, Bronchitis and Flu

Diarrhea

Infections and insect bites

“Pink Eye” and rashes

Sore throats

Sports injuries

Sprains & strains

UTIs

# Medical Use Cases: Chronic care

Asthma

CHF

COPD

Diabetes

Hypertension



What times of telemetric devices would assist in the management of these conditions?

The screenshot shows a web interface for a poll. At the top left, there is a bar chart icon and a back arrow labeled 'Activities'. To the right are two buttons: 'Visual settings' with a brain icon and 'Edit' with a gear icon. Below this is a light gray banner with a globe icon and the text 'When poll is active, respond at [PolleEv.com/salvolpe553](https://PolleEv.com/salvolpe553)'. The main content area features the poll question in large, bold, black text: 'What times of telemetric devices would assist in the management of these conditions?'. Below the question is a 'Top' button. At the bottom of the main area, it says 'No responses received yet. They will appear here...'. On the left side of the interface, there is a vertical sidebar with three icons: a bar chart, a list, and a document with an arrow.

# Behavioral Health Use Cases

Anxiety  
Depression

# Section 4

Choosing a platform

# Questions to Ask the Vendor

1. Pricing model
2. Is a virtual waiting room available?
3. Is collaboration with multiple providers or family members an option?
4. Sandbox with access
  - Physicians
  - Medical Assistants
  - Clerical staff
  - Billing staff

# Questions to Ask the Vendor

5. Demo with a live interpreter, if practice normally requires one
6. Demo of transcription in multiple environments:
  - Within the telemedicine application
  - In conjunction with an EHR that already has transcription
  - In conjunction with a free-standing transcription application, like Dragon, which some practices without EHRs may use

## Questions to Ask the Vendor

7. Which biometric devices can be connected, ie. weight scales, automated BP machines
8. Contact information of similarly sized practices
9. Confirmation of which data files (appointments, CCD (continuity of care document), demographics, problem list, medications, allergies, etc.) can be exchanged with you're EHR
10. If the entire Telehealth visit cannot be exported to the EHR, can it be printed?
11. Is there a read-only option if the contract is canceled?
12. List of HIEs with which data is exchanged and what can be exchanged (CCD, demographics, problem list, medications, allergies, etc.)

# Section 5

Workflows and deployment

# Workflow

Pre-visit questionnaire: Chief Complaint, Vitals. With or without patient portal

Triage

Engage Interpreter Service?

Engage caregiver?

Documentation: one or two screens

Prescriptions

Referrals: one or two screens?



# Workflow

Patient education materials  
Billing  
Follow up

## Back-up plan during “technical difficulties

Need to have a back-up plan for communication when the patient:  
Cannot login  
Forgets their password  
Does not have access to or use computers/electronics  
Not proficient in language of health care provider

## Back-up plan during “technical difficulties

Special Case: Senior patients using telemedicine

Older patients may have some degree of difficulty with hearing and/or vision:

Ensure the provider’s face is visible

Make sure the office area is well lit

Avoid shadows on the provider’s face so that facial expressions can also be communicated

Use non-verbal gestures to augment the spoken words

Encourage the use of headphones with volumes turned up

Minimize background noise

Use closed-captioning if your platform has this feature

# Patient Portal Services

Patients and caregivers can:

Request an appointment

Request a prescription renewal

Request a referral to another physician

Review bill balances and make payments

Review medical visit notes

Review diagnostic test results

Review consultation notes

# Deployment

## Staff Must be “Recruited” First

A successful Telehealth implementation begins with complete staff buy-in and enthusiasm.

Review with the staff the advantages to the patient

Review with the staff the increased professional satisfaction of being more involved with patient care management, ie. CCM (chronic care management)

Staff incentives

# Enrolling the patient

Location, location, location

Posters in waiting room and exam room

Staff buttons

Kiosks in waiting room and/or exam rooms

Website notice

FAQs Handout

## Enrolling the patient

Patient advantages: timely appointments, no commute, no time spent in waiting room, no risk of COVID-19, care giver involvement

Medication refills, appointment requests, etc.

Positive reinforcement helps sustain continued use

Many patients may initially sign up for the portal, but if they are not using it, an alternative form of communication must be used.

# Engaging the patient

Virtual visits are a change in healthcare delivery

Technological prowess is not a part of every generation:

While Millennials have never known life without technology, this is not the case for all

Technology impacts both sides of the healthcare team

Factors to consider with each encounter:

Appropriateness for the presenting condition/health issue

Cognitive, hearing and visual abilities of the patient

Access to equipment and internet

Compatibility of equipment and systems

Personal willingness to participate and preferences

Audio/telephonic or audio with visual



# Engaging the patient

Strategies can be employed to ease the transition to a virtual visit:

Before the scheduled appointment:

Confirm the patient has the proper equipment

Consider having staff perform a “dry run” call prior to scheduled event

At the onset of the appointment:

Confirm that the patient can see and hear the provider

Ensure privacy is addressed

Engage the patient in the process

During the appointment:

Monitor for any cues that the patient is not engaged in the telehealth visit

At the close of the appointment:

Summarize the visit and discuss next steps/plan

Use teach-back for any education provided

Allow for questions

# Population Health and Chronic Care Management (CCM)

Frequent contact helps keep patients and care givers engaged as “team members”

Outreach campaigns: mammograms, colonoscopies, immunizations etc.

Patient portals can also be used in conjunction with automated text and voice messaging

Remote patient monitoring

Remote care plan displays

# Section 7

Liability reduction

# Liability Reduction

Communication is encrypted and HIPAA\* compliant

No threat to a privacy breach

Improves physician-patient communication

Demonstrates physician is proactive and communicating with the patient

Establishes access to the physician

\*The United States Health Insurance Portability and Accountability Act of 1996 (HIPAA) is a federal law that required the creation of national standards to protect sensitive patient health information from being disclosed without the patient's consent or knowledge.

# Liability Reduction

The Law On Protection of Personal Data is a general law on protection of personal information, including personal medical data.

The Law of the Republic of Armenia on Medical Assistance and Service to the Population, defines what constitutes private information and how confidentiality should be maintained.

# Liability Reduction

Audit system findings document physician-patient communication. It may clarify events during deposition.

For example: Patient may state they were not feeling well and told their physician. A focused audit of the portal system may refute such statements.

# Section 6

The age of COVID-19

# The Age of COVID-19

Health Outcome Disparities

SDoH

Fear

Inadequate awareness of Telemedicine



## Interactive Case Study

A surgical center has recently opened in a rural community.

The care is provided by staff that is rotated from the large teaching hospital.

It is a hardship for the local citizens to visit their healthcare providers due to the distances that have to be traversed and the lack of adequate public transportation.

A young man had complications while being prepared for a pre-operative MRI to address a torn meniscus. The nurse which had usually worked on a pediatric unit was filling in due to COVID-19 related staff shortages.

She injected the patient with vecuronium (a paralytica agent) instead of Versed (a sedative) and then left the room to attend to the next patient.

By the time the patient was seen again, she was brain-dead.

# What could have been done to prevent this adverse event?

The screenshot shows a mobile interface for a poll. At the top, there is a navigation bar with a bar chart icon, a back arrow, the text "Activities", and two buttons: "Visual settings" and "Edit". Below the navigation bar is a light gray banner with a globe icon and the text: "When poll is active, respond at **PolleEv.com/salvolpe553**". Below this banner is a text message icon and the text: "Text **SALVOLPE553** to **22333** once to join". The main content area features the question "What could have been done to prevent this adverse event?" in a large, bold, black font. Below the question is a white box with a loading spinner icon and the text "No responses received yet. They will appear here...". At the bottom of the interface is a white footer bar with the text "Powered by" followed by the Poll Everywhere logo and name.

## Interactive case study

It is a hardship for the local citizens to visit their healthcare providers due to the distances that have to be traversed and the lack of adequate public transportation.

A 62 years old woman lives alone after her spouse passed away six months ago. She is not fluent in the language of the community in which she lives. She is rushed to the hospital in congestive heart failure. None of the hospital staff members are fluent in her language but they do their best to make her comfortable as she is given medication to assist release the excess fluid.

This happens every 4-6 weeks.

What interventions could be used to address these readmissions?

The screenshot shows a web interface for a poll. At the top left, there is a navigation menu with icons for a bar chart, a list, and a share button. The main header area contains a back arrow, the text 'Activities', and two buttons: 'Visual settings' and 'Edit'. Below the header, a light gray banner displays a globe icon and the text 'When poll is active, respond at [PolleEv.com/salvolpe553](https://PolleEv.com/salvolpe553)'. The central part of the screen features the poll question in large, bold, black text: 'What interventions could be used to address these readmissions?'. Below the question, there are two sorting options: 'Top' and 'New'. At the bottom of the poll area, a message states 'No responses received yet. They will appear here...'. The interface is clean and modern, with a white background and blue accents.

## References

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AMA Telehealth Implementation Playbook

[https://chs.aua.am/files/2021/08/Ashkhen\\_Grigoryan-2021.pdf](https://chs.aua.am/files/2021/08/Ashkhen_Grigoryan-2021.pdf)

# Thank You



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