

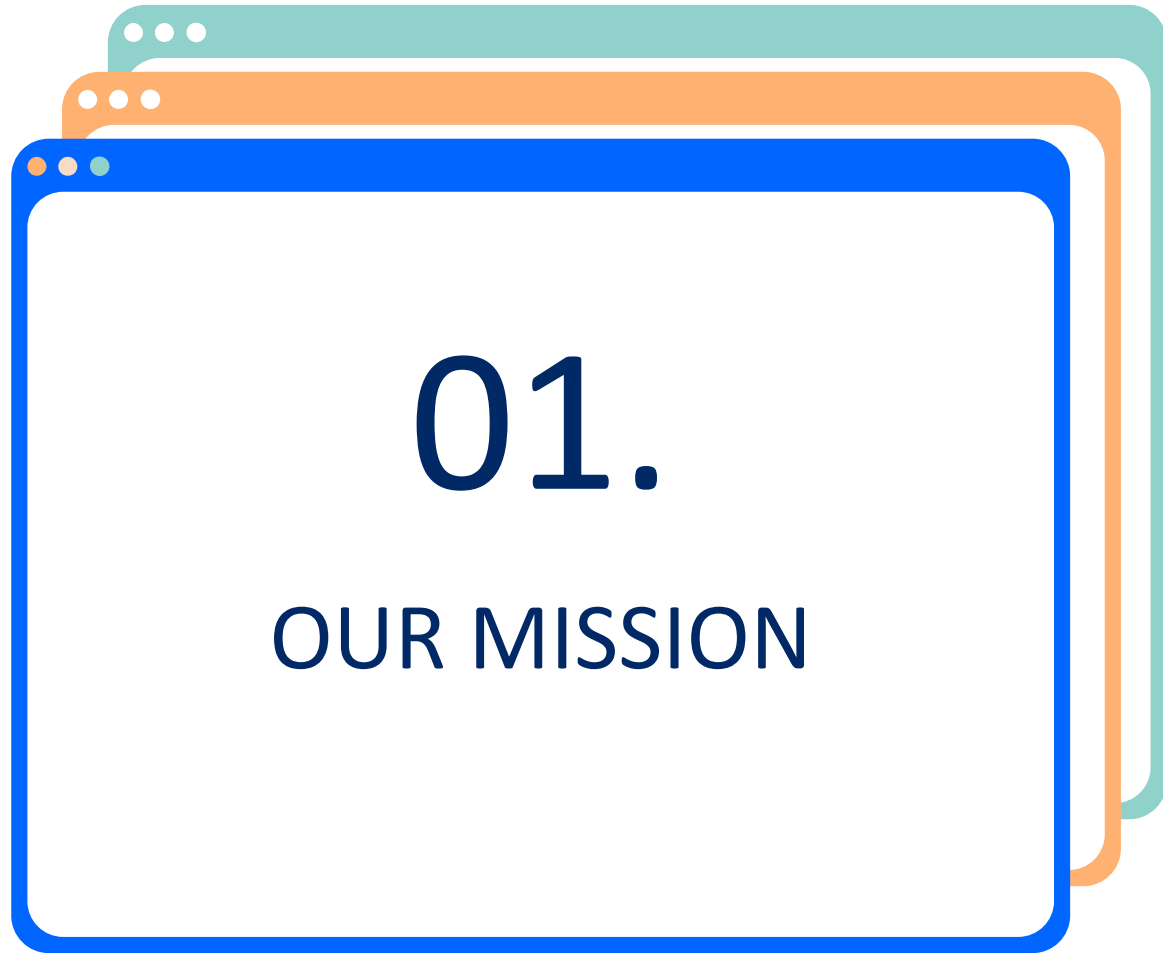
SmartChart



HOSA Medical Innovation

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MISSION STATEMENT

To create an app with integrated artificial intelligence and computer vision for EMTs, that enhances their ability to provide timely and effective care to patients. With this, we seek to minimize the time EMTs spend on documentation or looking up protocols, allowing them to maximize their time spent on patient care and call planning.





Created an artificial intelligence integrated web application, SmartChart, designed for the efficient and consistent delivery of EMS care.

- 5 pages
 - Patient Chart
 - An interface for EMTs to record vitals
 - Recommended Actions
 - Live updating patient care suggestions tab
 - Patient Communication
 - On-demand translations for language barriers
 - Patient Assessment
 - Machine learning model to take in and classify images
 - Transport Directions
 - Provides directions to recommended medical facilities.

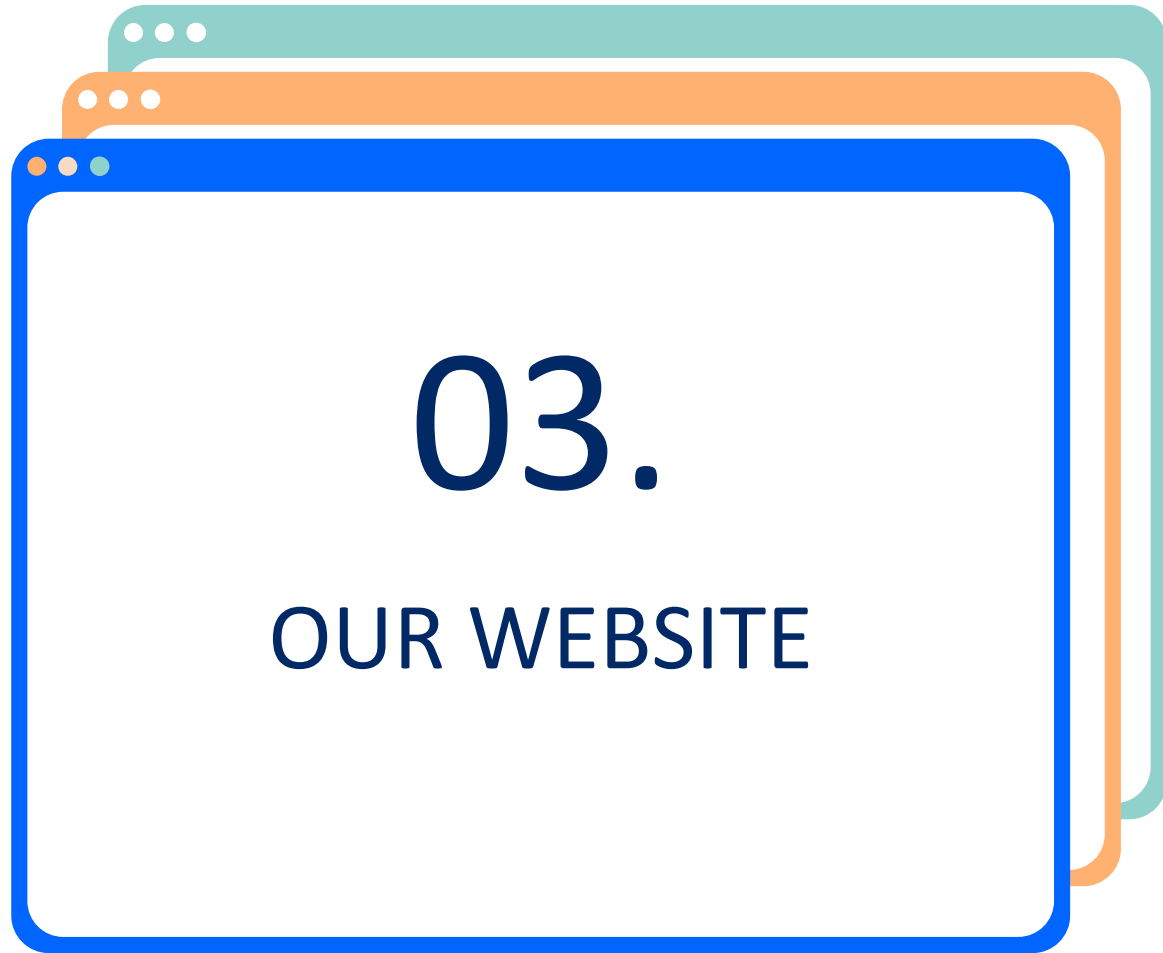


PRACTITIONERS & TRAINING REQUIREMENTS

- This app is created for EMTs to use on-duty. Users of this web app must be a certified EMT in order to ensure that they the background knowledge and training necessary to correctly carry-out actions.

COST ANALYSIS

- This web app will be made free to all users in order provide quality healthcare to all people.



WEBSITE CONTENTS

01.

SMARTCHART

02.

RECOMMENDED
EMS ACTIONS

03.

PATIENT
COMMUNICATION

04.

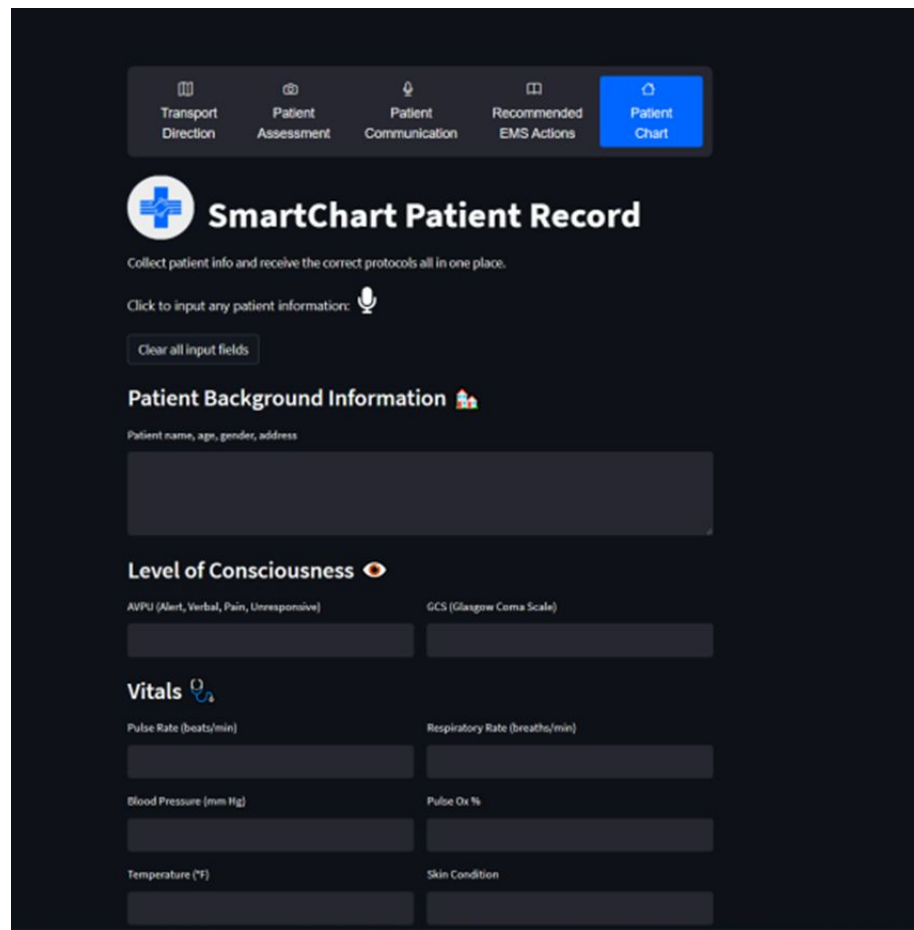
PATIENT
ASSESSMENT

05.

TRANSPORT
DIRECTION


PATIENT CHART

- Manual and voice input options
 - Voice input saves time
- Effective speech recognition using AI to understand speech patterns




The image shows a screenshot of the SmartChart Patient Record interface. At the top, there is a navigation bar with five icons and labels: 'Transport Direction', 'Patient Assessment', 'Patient Communication', 'Recommended EMS Actions', and 'Patient Chart' (which is highlighted in blue). Below the navigation bar is the 'SmartChart Patient Record' header, featuring a blue cross icon and the text 'SmartChart Patient Record'. Underneath the header, there is a sub-header 'Collect patient info and receive the correct protocols all in one place.' followed by a prompt 'Click to input any patient information:' with a microphone icon. A 'Clear all input fields' button is located below the prompt. The main form area is divided into several sections: 'Patient Background Information' with a sub-header 'Patient name, age, gender, address' and a large text input field; 'Level of Consciousness' with a sub-header 'AVPU (Alert, Verbal, Pain, Unresponsive)' and 'GCS (Glasgow Coma Scale)' and two text input fields; 'Vitals' with a sub-header 'Pulse Rate (beats/min)' and 'Respiratory Rate (breaths/min)' and two text input fields; 'Blood Pressure (mm Hg)' and 'Pulse Ox %' with two text input fields; and 'Temperature (°F)' and 'Skin Condition' with two text input fields.


Transport Direction Patient Assessment Patient Communication Recommended EMS Actions Patient Chart

 **SmartChart Patient Record**


Collect patient info and receive the correct protocols all in one place.

Click to input any patient information: 


Clear all input fields

Patient Background Information 

Patient name, age, gender, address

Level of Consciousness 

AVPU (Alert, Verbal, Pain, Unresponsive) GCS (Glasgow Coma Scale)

Vitals 

Pulse Rate (beats/min) Respiratory Rate (breaths/min)

Blood Pressure (mm Hg) Pulse Ox %

Temperature (°F) Skin Condition

RECOMMENDED EMS ACTIONS

- Search feature to find specific complications
- List of recommended actions
 - Adjusts to the patient's vitals

Recommended EMS Actions

A customized list of possible patient complications that updates live with vital entry.

🔍 Search protocols


Treatment for Cardiac Arrest

Treatment for Respiratory Arrest

- Open the airway using the head-tilt chin-lift or jaw thrust maneuver, and suction if necessary
- Positive pressure ventilation with a BVM connected to high-flow supplemental oxygen
- Urgent transport to a higher level of care
- Click [here](#) for more information


Treatment for Hyperglycemia


Treatment for Stroke

 Warning! The administration of Glucose for Hypoglycemia is contraindicated in this patient!

 Warning! The administration of Aspirin for Angina Pectoris is contraindicated in this patient!

 Warning! The administration of Nitroglycerin for Angina Pectoris is contraindicated in this patient!

 Warning! The administration of MDI/SVN for Hypoxia is contraindicated in this patient!

 Careful! The administration of Epinephrine for Anaphylaxis must be used with caution in this patient!

- Each result also indicates possible contraindications and relative contraindications based on the patient's vitals

PATIENT ASSESSMENT


- Uses machine learning to classify patient signs and symptoms
 - Also gives relevant protocol materials for the EMT

Patient ChartRecommendation EMS ActionsTransport DirectionPatient AssessmentPatient Communication


Computer Vision Patient Assessment


Upload your patient image here 📷


Choose a file

 Drag and drop file here
Limit 200MB per file

Browse files

 urticaria6.jpg 27.7KB





Classified Image

Patient presents with urticaria.

Treatment for Mild Allergic Reaction ^

- Administer high-flow supplemental oxygen via a non-rebreather mask
- Transport to a higher level of care, continuously monitoring patient's perfusion and breathing
- Click [here](https://my.clevelandclinic.org/health/diseases/8610-allergies#management-and-treatment) for more information

Treatment for Anaphylaxis v

PATIENT COMMUNICATION

- On-demand translations help with language barriers
- Conversations can be recorded or typed
- 10 language options to translate the EMT or the patient's message

Translate Patient Speech

Use the microphone below to record patient speech, and receive a textual translation.


Click to record patient speech: 

Patient Speech

English Translation

Communicate Back to Patient

Enter the text for your patient to hear, as well as their native language.

Click to record your message: 

Enter your message

Select patient language

Spanish / Español

☐ Display output text


Generate audio


TRANSPORT DIRECTIONS


- Alerts EMT about weather conditions
- Provides a list of the nearest facilities


Transport Directions


Select which facility you need to take your patient, and receive a list of locations near you.


 The weather forecast in your area is: 35.92°F with clear sky.


 Search locations


 Given your patient information, transport to a hospital is indicated!

Hospitals near me: 

Burn centers near me: 


Trauma centers near me: 

Stroke centers near me: 

Cardiac centers near me: 

- Alerts the EMT regarding recommended facilities and directions

 Search locations

 Given your patient information, transport to a hospital is indicated!

Hospitals near me:

- Bergen New Bridge Medical Center Emergency Room: [take me there](#)
- Valley Emergency Room Associates: Emergency Room: [take me there](#)
- HackensackUMC at Pascack Valley - Emergency Room: [take me there](#)



IMPACT ON FUTURE INNOVATION

Our goal is to empower EMTs with the tools and knowledge they need to save lives, reduce patient morbidity and mortality, and improve the overall quality of emergency medical care. We hope that by using our app, patients can receive faster and more accurate diagnoses as well as receive the quality treatment they need.



Thank you!

CREDITS: This presentation template was created by Slidesgo, including icons by Flaticon, and infographics & images by Freepik and illustrations