Office of the National Coordinator for Health Information Technology (ONC)

Emergency Responder Electronic Health Record

Detailed Use Case

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1.0 Introduction

On August 1, the American Health Information Community (AHIC, also known as 'the Community') approved a recommendation that a use case be developed to describe the role of an electronic health record (EHR) during emergency response activities.

This use case has been developed by the Office of the National Coordinator for Health Information Technology (ONC), with opportunities for review and feedback by interested stakeholders within both the public and private sectors. Within ONC, the Federal Health Architecture (FHA) initiative has been tasked with leading the development of this use case, in consultation with both Federal agencies and representatives from the private sector, as well as state and local healthcare bodies. To facilitate this process, the use case was developed in two stages:

- The **Use Case Synopsis**, which describes the flows of the use case at a high level and facilitates initial discussion with stakeholders; and,
- The **Detailed Use Case**, which documents all of the events and actions within the use case at a detailed level.

This document is the detailed use case. Feedback regarding the use case synopsis has been incorporated into this document and additional changes have been made to provide greater clarity and detail with respect to emergency response activities, network information systems, and use of health information by non-care provider entities such as public health and emergency operations management organizations.

This use case will serve as the basis for additional activities within the national health agenda to further advance the adoption of health information technology.

1.1 Use Case Description

Some of the needs for interoperable electronic health records were prominent in the Hurricane Katrina response efforts. Triage systems were needed to communicate with temporary care systems and temporary care facilities with facilities in the comprehensive care system. Providers in evacuation centers needed access to the medical histories of evacuees. Evacuees needed to have records of the care provided to them in transient facilities. People who were permanently displaced needed their new permanent care providers to have access to all of their medical history.

In the *Federal Response to Katrina Lessons Learned* report, Recommendation 62 of the Report states: "*…foster widespread use of interoperable electronic health (EHR) records systems, to achieve development and certification of systems for emergency responders within the next 12 months"*. There are a number of initiatives underway to begin to address the needs for an Emergency Responder EHR. Federal agencies currently engaged in this domain include the HHS Office of Public Health Emergency Preparedness (OPHEP), DHS Federal Emergency Management Agency (FEMA), the Department of Defense (DoD), the Department of Veterans Affairs, and the DOT National Highway and Traffic Safety Administration (NHTSA). Other important activities include the work of the Gulf Coast Task Force, the National EMS Information Systems Initiative (NEMSIS), the American College of Emergency Physicians (ACEP) and others.

OPHEP has committed to implementing a prototype EHR capability for Federal Medical Stations with the possibility of being able to extend its use in emergency situations. The Gulf Coast Task Force is looking at ways of providing similar functionality in private care systems in that region. Any such approaches will be dependent on other activities in both the public and private sectors. Only public-private interoperable systems will be able to address all of these needs. AHIC has a vital role to play in supporting these activities and prioritizing them for the different initiatives of the national health IT agenda.

To truly make these efforts interoperable and mutually supportive, there is a need to harmonize the standards for key health care data. These harmonized standards will probably include a patient summary record that will be central to many of these emergency response activities, but will also play important roles in routine care and routine care systems. The federal efforts in this area need the support of AHIC to prioritize the development of a use case for an Emergency Responder EHR so as to set into motion the full spectrum of support of the Health Information Technology Standards Panel (HITSP), the Nationwide Health Information Network efforts, the Certification Commission for Health Information Technology and others. HHS has committed to using the FHA program, an e-Gov line of business managed by ONC, to help develop a use case for Emergency Responder EHR. The FHA will invite participation from the organizations listed above and others.

We ask AHIC to prioritize the development of an Emergency Responder EHR use case with this recommendation:

1.2 Emergency Responder EHR Use Case Recommendation

Under the leadership of ONC, an Emergency Responder use case should be developed and prioritized for the attention of the HITSP and the other ONC initiatives. The use case should describe the role that an Emergency Responder electronic health record, comprising at a minimum demographic, medication, allergy and problem list information, that can be used to support emergency and routine health care activities. The use case should leverage the work in related activities from the AHIC EHR Working Group and elsewhere. In order to meet the needs of a variety of follow-up activities, this use case should be available in October of 2006.

1.3 Scope of the Use Case

Widespread adoption of certified EHRs is a goal of AHIC. To achieve this, the Emergency Responder Electronic Health Record (ER-EHR) Use Case focuses on the deployment of standardized, widely available and secure solutions for accessing current and historical health data by those involved in the response to an emergency situation.

The use case is driven by the requirements of timely electronic access to critical health information relating to the assessment, stabilization and treatment of the victims of emergency incidents. This could range from individuals suffering from accidents or acute episodes of illness to large groups of people suffering as the result of widespread casualty incidents including natural disasters and terrorism.

This use case covers the use of the ER-EHR from the perspective of on-site care providers and emergency care clinicians. Definitive care clinicians involved in the care and treatment of emergency incident victims, medical examiner/fatality managers investigating cause of death, and public health practitioners using information contained in the ER-EHR, are included because of their interactions with the other portions of this use case. This use case does not attempt to include all of their functions and interactions.

The use case begins with the dispatch of on-site care providers to the scene of an emergency incident and follows the patient through initial treatment, the evacuation process to emergency medical treatment facilities, and ends when the emergency care information is passed to the electronic health record.

This use case assumes the existence of an operational Electronic Health Record within medical treatment facilities, but it primarily models the exchange of information related to the emergency incident between on-site care providers, medical treatment facilities, facilities in the definitive care system, medical examiner/fatality managers' offices and public health practitioners. The information flows to these entities are not intended to be

comprehensive or limiting.

2.0 Use Case Stakeholders

Stakeholder	Working Definition
Consumers	Members of the public who may at some time require health care services due to an emergency incident.
On-site care providers	Police, Fire, Emergency Medical Technicians (EMTs), and other medically trained emergency responders who provide care while at, or in transport from, the site of an emergency.
Clinicians	Healthcare providers located at a Medical Treatment Facility (MTF) with responsibility for treating emergency incident victims. This includes emergency physicians, emergency nurses, and all other clinical and ancillary personnel at the MTF.
Emergency Medical Systems	Local, regional, and state agencies charged with coordination of the EMS at a particular level. State EMS agencies should be included as they are the repositories of "on-scene" information and generally dictate the use of pre-hospital data formats.
Emergency Medical Dispatchers	Trained emergency medical telecommunicators who provide the initial patient assessment, triage and who are often the first point of contact the consumer/caller/patient has with the emergency response system.
Emergency operations management	Personnel involved in planning, staffing, and information collection activities at the institution, community, or regional level to implement measures that will save the most patients. They track the status of available resources; allocate patients to the facilities best suited to care for them; and arrange staffing, logistics, and supplies to care for patients.
Developers of health IT systems	Those private and public sector organizations that provide information technology (IT) hardware and software solutions to support the activities of on-site care providers in the field and emergency care providers that are used within this use case to access and update a patient's electronic health records.
Health information service providers	A network service provider that enables or oversees the access to and exchange of health information, in a secure manner, for the purpose of supporting clinician and consumer needs.
Health care delivery organizations	Organizations, such as academic medical centers, hospitals, physician practices, American Red Cross, and other non-government organizations which manage the delivery of care.
Health plan organizations	Insurers providing for healthcare coverage to their enrolled members.

Stakeholder	Working Definition
Medical Examiner/ fatality manager	Those charged with investigation of the cause of death where the death is under suspicious circumstances.
Researchers	Those performing research using anonymized health record information.
Public health agencies	Those agencies of local, state and federal government charged with the health of their populations.

3.0 Issues and Obstacles

Inherent in this use case is the premise that some of the issues and obstacles in today's environment will be addressed through health information technology standardization and harmonization activities, policy development, and other related initiatives.

Sections 6.0 and 7.0 of the use case identify points in the flows that represent examples of where a given issue could affect the use case. This is not an all-inclusive attempt to cross reference every issue to an information flow. The goal is to point out some practical situations in which an issue or obstacle would arise.

Regulatory or Policy

1. Current policies and regulations are not always considerate of emergency care. As an example, the disaster response to Hurricane Katrina showed some of the policy issues that impact accessing and sharing healthcare information in an emergency. Some issues include:

    - The need for the timely development of business associate or other agreements between entities wishing to share health information during an emergency can be challenging.

    - Variations in local and state privacy and security regulations impact the ease of cross-jurisdictional sharing of protected health information.

    - Having a capable, secure authentication and authorization mechanism that will allow access by all appropriate health care providers to necessary health information, regardless of the providers' original jurisdiction.

2. Patients may have concerns about privacy, if information about their care in an emergency situation is shared inappropriately. However, clinical care personnel involved in emergency care activities may need to have the capability to "break the glass" in order to gain access to patient information which has immediate relevance to the clinician's decisions about the care needed.

Data

3. Data exchanges may be hampered by lack of harmonization of the data sets needed to support emergency response, the underlying data definitions, the minimum data required, and inconsistent implementation of existing data standards. Likewise, existing systems currently supporting emergency responses may have practical limitations on their ability to collect, transform, and communicate some of the needed information in standard formats. This issue applies to patient information and information describing the resources available to support an emergency

response effort (e.g. clinician availability, stockpile inventory, pharmacy inventory, and hospital bed availability).

4. Methodologies for identifying and unambiguously matching patients and their information may vary from system to system, potentially resulting in incomplete access to information at various points in the information exchange.

Authentication and Authorization

5. Mechanisms to verify the credentials of a clinical care provider at the scene of an incident or medical treatment facility may not be available to incident control personnel. This becomes most relevant in larger-scale incidents during which personnel from out-of-region arrive on-scene to provide medical care and need to be quickly identified and given permission to enter the scene.

6. Even if a clinical care provider has been issued authentication credentials by a local market health information service provider to access network resources, mechanisms to disseminate those authentication and authorization credentials to all health information service providers in an emergency may not be available. This is also likely to surface as an obstacle in larger-scale incidents when providers are working out-of-region.

7. Mechanisms to audit access to a specific patient's information across multiple organizations, geographic regions or health information service provider markets may not be readily available. While a local market health information service provider will have the audit data for their own market, mechanisms to create an integrated view of who has accessed the patient's information across multiple markets may be challenging without agreed upon standards for audit-related data and standards for exchanging audit information among networks. This need could emerge in larger scale incidents during which patients are transported across market boundaries.

Technology

8. There are likely to be varying levels of technical infrastructure available to those participating in an emergency response situation. This could be a consequence of the nature of the incident (e.g. electrical power failure) in which certain capabilities are degraded, or the absence of certain capabilities in the infrastructure supporting a specific response group (e.g. no wireless infrastructure capability).

Workflow

9. The scale and complexity of an incident may impact the ability of a provider to effectively utilize an EHR without adversely affecting the pace of providing patient care. There could be situations in which some steps in the use case

information flow may be difficult or even impossible to perform, resulting in the clinical care providers utilizing alternative information gathering and communication mechanisms which may not be readily integrated with an EHR.

4.0 Use Case Perspectives

The use case describes the use of the various electronic health records from several perspectives. Each perspective represents the use of an electronic health record from the viewpoint of the major contributors to the care, treatment, and management of patients involved in an emergency incident. These perspectives also map closely to the locations at which the activities occur from the incident site, to emergency treatment facilities and then to longer term care facilities.

The perspectives portrayed are functional in nature, and are not wholly indicative of physical location. For example, emergency care may be rendered in a variety of locations, including, but not limited to, hospital-based Emergency Departments (EDs), field-based emergency units, or other locations of opportunity during a large-scale disaster. In some instances, it is possible that definitive care may also be rendered in these same locations.

4.1 Perspective Definitions

Within the scope of the use case noted above, the following perspectives have been defined:

4.1.1 Care Provider Perspectives

Care providers are trained personnel who directly provide amelioration of the effects of illness or injury. Flows in Section 6.1 to 6.3 cover the activities of these perspectives.

A.1.1 On-site Care

On-site care providers are the initial personnel to deliver medical care at the scene of an incident. While this would typically be EMTs, it can also include medically trained fire, law enforcement, and uniformed services medical personnel and civilian disaster medical assistance teams (DMATs). They assess and stabilize the patient's medical conditions, extricate them from dangerous locations, perform triage, and evacuate them to a temporary or permanent medical treatment facility (MTF) to receive emergency care. On-site care providers usually work outside MTFs, except in the military and Public Health Service (PHS) where they may staff Battalion Aid Stations and Federal Medical Stations (FMS)

A.1.2 Emergency Care

Emergency care is provided by clinical care personnel operating in a MTF. They usually work in an ED or equivalent military facility, evaluating and or treating patients before they are discharged, admitted to an inpatient facility, or deceased. This includes emergency physicians, emergency nurses, advanced practice nurses

(e.g. nurse practitioners, nurse anesthetists) physician's assistants, military corpsmen and all other clinical and ancillary personnel at the MTF.

A.1.3 Definitive Care

Definitive care is given by non-ED clinical personnel providing acute, rehabilitative, or custodial care. They evaluate and treat patients in locations other than an ED, such as acute care hospitals, specialty hospitals, dialysis centers, nursing homes and other facilities. They may include physicians, nurses, respiratory therapists, technicians, and many others.

4.1.2 Additional Perspectives

These perspectives describe individuals removed from the direct provision of health care who are consumers and providers of information during an emergency situation. These perspectives are not modeled as separate flows within the use case. However, information exchange to and from these perspectives are modeled where applicable.

A.1.4 Medical Examiner/Fatality Manager

Medical Examiners/fatality managers investigate by inquest any deaths thought to be of other than natural cause. They may perform autopsies or inquests, usually in morgues. They may include Medical Examiners, coroners, and Disaster Mortuary Operational Response Teams (DMORTs).

A.1.5 Emergency Operations Management

Emergency Operations Management (EOM) personnel are involved in planning, staffing, and information collection activities at the institution, community, or regional level to implement measures that will save the most patients. They track the status of available resources; allocate patients to the facilities best suited to care for them; and arrange staffing, logistics, and supplies to care for patients.

They may include emergency responders; patient tracking personnel who help provide family members with information on the status and location of patients; hospital planners; nursing supervisors; EMS managers/patient regulators who determine where ambulances take patients; other National Incident Management System (NIMS) roles; and emergency managers and planners.

A.1.6 Public Health

Public health practitioners help protect and improve the health of a population. A critical effort under this charge is collecting health information to monitor for emerging health threats appearing in the population and manage these threats once manifested. Thus, they may collect and manage information; examine health

trends; detect, investigate, and control outbreaks or other negative trends; research best practices; and implement health interventions.

They may include staff and appointed positions in federal, state, or local public health agencies, epidemiologists, case workers, and program managers and staff.

5.0 Scale of Incident

The roles of some perspectives with respect to the use of the ER-EHR may change according to the scale of the incident. Two scales, large and small, are defined for the purpose of this use case.

5.1 Small Scale Incident

A small scale incident is one in which a moderate number of individuals are injured/ill, where the medical resources of an individual city, county or metropolitan area can handle the numbers of casualties. The ability to provide routine care is not compromised. The timescale for response is normally expected to be less than twenty four hours.

Examples may include routine incidents such as motor vehicle accidents, or less common events such as large chemical spills or the collapse of an office building.

5.2 Large Scale Incident

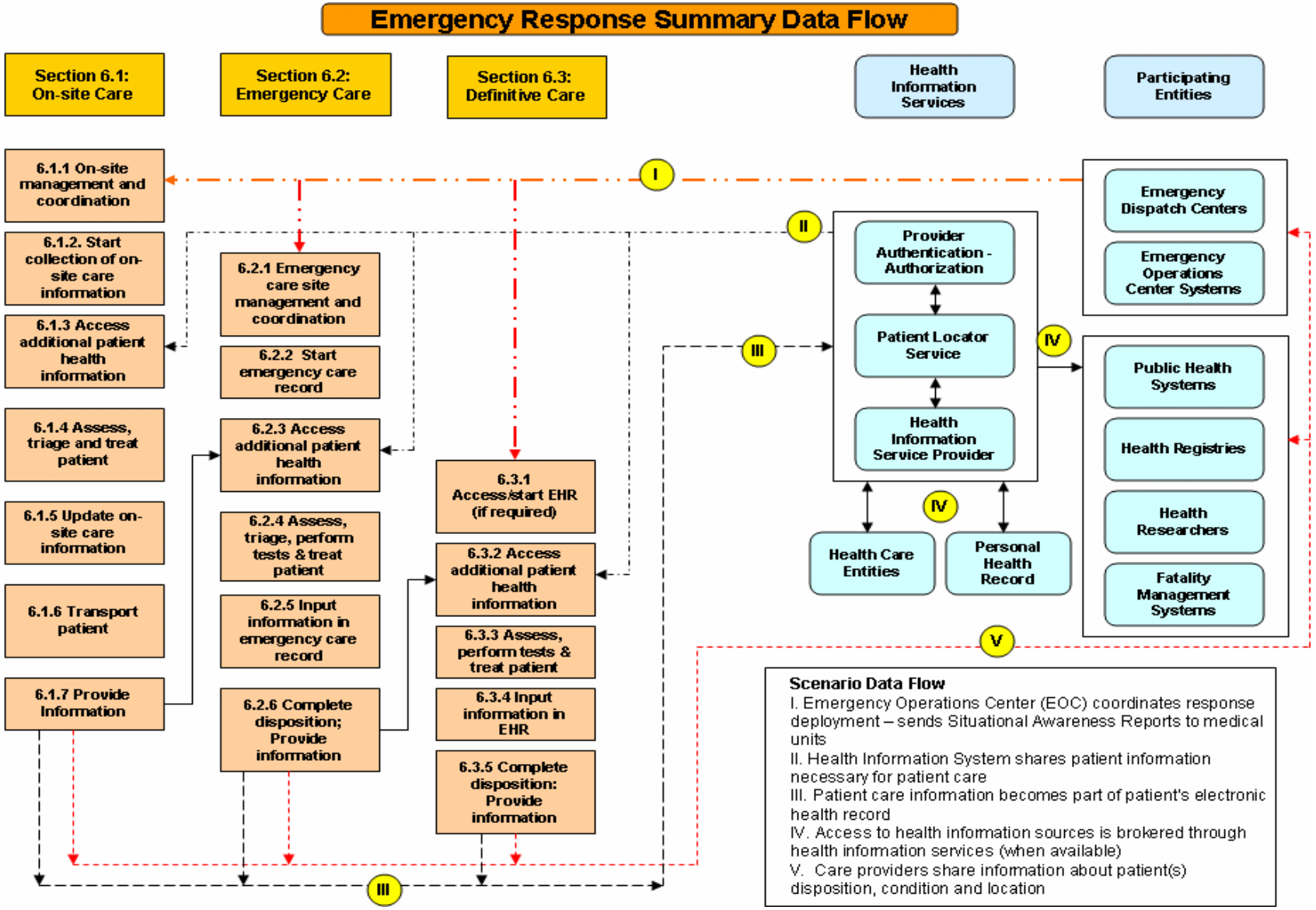
A large scale incident is one in which the number of casualties is such that the local resources must be augmented by external resources (regional, State and/or Federal). The incident may occur across several geographic areas or it may be nationwide in scope. The ability to provide routine care will potentially be curtailed. External command and control is required to best match casualty needs to capabilities. The timescale for on-site response is typically greater than twenty-four hours and may extend to days, weeks or months. Communication networks may be partially or completely unavailable. It is likely that medical treatment facilities will be unable to process incoming patients as rapidly as is required, and triage decisions become critical.

Examples may include the crash of a large airliner, a large scale terrorist attack, a major military combat operation, or a large natural or man-made disaster such as Hurricane Katrina or an occurrence of pandemic disease, The scale of an incident or a lack of power or equipment may make keeping a complete electronic health record impossible or unmanageable, though a truncated version or aggregate version may be considered.

6.0 Care Delivery Perspectives

The sections that follow present three care delivery perspectives (on-site, emergency, and definitive) as well as an additional perspective describing provider authentication and authorization services. The perspectives are presented from the most demanding scale setting, in most instances, a large scale incident. Each perspective is described via information flows that introduce a series of actions and alternative actions associated with a given event.

The comments that accompany each action also include references to Section 3.0, Issues and Obstacles, in order to facilitate an understanding of some of the practical situations in which an issue or obstacle may arise.


Emergency Response Summary Data Flow
Section 6.1: On-site Care
Section 6.2: Emergency Care
Section 6.3: Definitive Care
Health Information Services
Participating Entities
6.1.1 On-site management and coordination
6.1.2. Start collection of on-site care information
6.1.3 Access additional patient health information
6.1.4 Assess, triage and treat patient
6.1.5 Update on-site care information
6.1.6 Transport patient
6.1.7 Provide Information
6.2.1 Emergency care site management and coordination
6.2.2 Start emergency care record
6.2.3 Access additional patient health information
6.2.4 Assess, triage, perform tests & treat patient
6.2.5 Input information in emergency care record
6.2.6 Complete disposition; Provide information
6.3.1 Access/start EHR (if required)
6.3.2 Access additional patient health information
6.3.3 Assess, perform tests & treat patient
6.3.4 Input information in EHR
6.3.5 Complete disposition: Provide information
I
II
III
IV
V
Provider Authentication - Authorization
Patient Locator Service
Health Information Service Provider
Health Care Entities
Personal Health Record
Emergency Dispatch Centers
Emergency Operations Center Systems
Public Health Systems
Health Registries
Health Researchers
Fatality Management Systems
Scenario Data Flow
I. Emergency Operations Center (EOC) coordinates response deployment – sends Situational Awareness Reports to medical units
II. Health Information System shares patient information necessary for patient care
III. Patient care information becomes part of patient's electronic health record
IV. Access to health information sources is brokered through health information services (when available)
V. Care providers share information about patient(s) disposition, condition and location

6.1 Perspective 1: On-site Care

Code	Description	Comments
6.1.1	**Event:** On-site Management and Coordination	
6.1.1.1	**Action:** On-site care providers are dispatched. Patient location information from emergency dispatch center systems will be communicated to on-site care providers. Emergency medical operations personnel coordinate response deployment.	Calls for assistance are received at the Emergency Dispatch Center. For small scale incidents, basic information such as patient's name, location, and chief complaint are gathered by the 911 telecommunicator from the individual making the emergency call when possible. For larger scale incidents, dispatchers may gather less specific information about individual patients. Information provided by the caller on the size and nature of the incident, and characteristic injuries of the patients associated with the incident will allow the proper personnel/units/apparatus to be dispatched. All gathered information is sent to the responding on-site care team answering the dispatch call.
6.1.1.2	**Action:** EOC system sends situational awareness reports to all involved medical units and systems.	As information is gathered from a number of sources, EOC systems will prepare and disseminate situational awareness reports keeping all involved medical entities informed of the situation.
6.1.1.3	**Action:** On-site care providers assess the situation, determine the scope of required care and evacuation, notifying responding agencies of the situational assessment, and organize additional units if required.	On-site medical personnel arrive on-site and perform an assessment of the incident site to determine the scope of medical care and evacuation required. In certain incidents, care and evacuation will require multiple on-site teams. If the initial on-site team recommends that additional resources maybe required such as additional EMT teams, fire and rescue, police and other response units, they shall be able to convey this information back to the Emergency Dispatch Center. After on-site assessment and communication with the Emergency Dispatch Center, the need for an on-site triage collection point and or a medical incident command post shall be established. Until an incident command post is operational, the first team may serve as to organize subsequent arriving units. Once the command post has become operational they will assume command over the incident site and all assigned personnel. Issue #3 may apply here.

6.1.2	**Event:** Start Collection of On-site Care Information	
6.1.2.1	**Action**: Collection of patient information is begun for each instance of care.	On-site crews use the information received from the Emergency Dispatch Center to begin collection of on-site information. This may take several forms such as an ambulance run report or a field medical card. The basic patient information is entered and verified as much as possible for accuracy. The information is verified with patient, family members, or others who may have the information at the incident scene. Issues #3 and #4 may apply here.
6.1.3	**Event:** Access Additional Patient Health Information	
6.1.3.1	**Action:** Additional patient information may be accessed and viewed from health information repositories such as existing patient electronic health records (either from an individual healthcare entity or a health information service provider), handheld storage devices, or web-hosted personal health records. Other sources such as patient registries may be accessed to view information such as emergency contact information and prescriptions. The queries for information are secondary to the stabilization and treatment of the patient(s).	On-site care providers attempt to identify the patient. If the patient can be identified the on-site care providers send a query to receive relevant patient specific information from the EHR or a physical PHR storage device (if available). Both the query and retrieval are auditable. If the patient can not be identified, a patient identifier is added to the on-site information. Issues #2, #3, #4, and #7 may apply here.
6.1.3.1a	**Alternative Action**: Information from the EHR and/or PHR is not available (this would include jurisdictions that have not yet implemented electronic on-site care information collection).	If information is not available from the EHR/PHR, the on-site crew will enter as much information as possible in a manual mode, on a treatment non-interference basis. The information source could be the patient, family member, or friend, who has knowledge about certain basic aspects of the patient's health condition, such as allergies, past episodes of care, current medications, primary care physician, etc. Issues #3, #4, and #9 may apply here.

6.1.4	**Event:** Assess, Triage and Treat Patient	
6.1.4.1	**Action:** EMTs will assess the patient's condition, develop a working diagnosis, determine triage category, and treat the patient's injuries and/or illnesses in order to stabilize the patient for transportation to the designated medical treatment facility.	On-site care providers perform an assessment of the patient's condition and develop a working diagnosis. Based upon predetermined triage criteria, the on-site care team makes a decision regarding the level of care required (e.g. transport to the closest hospital or to a trauma center), the mode of transportation (ground or air) required by the patient, and the priority of movement (delayed, immediate, minimal or expectant). The on-site team reviews the updated on-site information to identify risks associated with patient's pre-existing conditions, medications, allergies, and then administers basic treatment of patient injuries and/or illnesses accordingly, in order to stabilize the patient for transportation to the designated medical treatment facility. If available, they may utilize virtual consultation by a qualified clinician to assist in the assessment process. Issues #2 and #6 may apply here.
6.1.5	**Event:** Update On-site Care Information	
6.1.5.1	**Action:** The on-site care treatment team updates the on-site care information on the treatment provided.	The patient's destination, mode of transport and priority of movement is sent by the on-site team to the emergency dispatch and emergency management systems. Issues #3 and #8 may apply here.
6.1.6	**Event:** Transport Patient	
6.1.6.1	**Action:** Transport the patient to the designated medical treatment facility.	On-site care information is updated with any treatment rendered en-route. Any medications, changes in vital signs, etc. are updated in the on-site care information. This may include information feeds from automated medical devices such as blood pressure monitors. In many situations, the recording of the information may take place at the destination facility. Issues #2, #3 and #9 may apply here.

6.1.7	**Event:** Provide Information	
6.1.7.1	**Action:** The on-site care information is made available to the receiving facility.	On-site care information is made available to the receiving facility and/or the appropriate repositories. The on-site treatment team updates the patient on-site information with treatment provided to the patient by the transportation team (if required). If the patient requires transport, the on-site treatment team transmits the updated on-site information to the designated receiving facility so that appropriate resources (including clinicians) may be available at the time of patient arrival. Appropriate information is sent to EOC systems and public health agencies that use the information to track health resources and conduct bio-surveillance respectively. The information sent to EOC systems is non-identifying or anonymized. All information exchanges are auditable. Issues #1, #2, #3, #4, #8, and #9 may apply here.
6.1.7.1a	**Alternative Action:** Power or communication failures.	A paper copy of the health record is kept for the patient, a copy of which is transferred with the patient to the staff at the receiving facility. Once power and IT communications are restored, the information can be re-entered into the electronic health record, after the fact, possibly by scanning the record. All information exchanges are auditable. Issues #1, #2, #3, #4, #7, #8, and #9 may apply.

6.2 Perspective 2: Emergency Care

Code	Description	Comments
6.2.1	**Event:** Emergency Care Site Management and Coordination	
6.2.1.1	**Action:** The emergency care facility is notified by the Emergency Dispatch Center regarding the in-bound patient.	ED clinical care personnel are notified by the Emergency Dispatch Center of the in-coming patient. If information recorded during on-site care is available, ED clinical care personnel receive and review the record (demographics, diagnosis, triage outcome, treatment provided) to ensure appropriate resources are available (e.g. specialists, lab tests, blood products, radiology etc) to appropriately treat the patient upon arrival. An

		alert may be sent to the patient's primary care physician (if applicable). All information exchanges are auditable. Issues #2, #3, #4, #5, and #6 may apply.
6.2.1.2	**Action:** EOC systems send situational awareness reports to all involved medical units and systems.	As information is gathered from a number of sources, EOC systems will prepare and disseminate situational awareness reports keeping all involved medical entities informed of the situation.
6.2.2	**Event:** Start Emergency Care Record	
6.2.2.1	**Action:** The patient is logged into the emergency care facility, thus starting the emergency care record for this instance of care.	When the patient arrives at the ED, clinical care staff will log the patient into the system used at their facility and create a record for each patient for each encounter. Basic registration information (patient demographics, next of kin, employer, health insurance, etc.) is added to the clinical information derived from the on-site care record. All information exchanges are auditable. Issues #2, #3, #4, #5, and #6 may apply.
6.2.2.1a	**Alternative Action:** Patient is dead on arrival.	An emergency care record is begun for the patient. Basic registration information (patient demographics, next of kin, employer, health insurance, etc.) is added to the clinical information derived from the on-site care record. Once the patient is pronounced dead by a physician, the emergency care is so annotated and closed. Issues #4, #5, and #6 may apply.
6.2.2.1b	**Alternative Action:** Power or communication failures.	A paper copy of the health record is begun for the patient. Once power and IT communications are restored, the information can be re-entered into the electronic health record, possibly by scanning the record. Additional sites at remote locations may be employed as backups for the primary repository in case of widespread communications and power outages caused by natural or man-made disasters. All information exchanges are auditable. Issues #1, #2, #3, #4, #7, and #8 may apply.

6.2.2.1c	**Alternative Action:** Patient cannot be identified.	A record is started with a patient identifier. If and when the patient's identity is established and validated, the emergency care record and on-site care record will be joined together under the patient's correct identity. All information exchanges are auditable. Issues #1, #2, #3, #4, #7, and #8 may apply.
6.2.3	**Event:** Access Additional Patient Health Information	
6.2.3.1	**Action**: Additional patient information may be accessed and viewed from health information repositories such as existing patient electronic health records (either from an individual healthcare entity or a health information service provider), handheld storage devices or web hosted personal health records. Other sources such as patient registries may be accessed to view information such as emergency contact information, prescriptions and insurance claims databases (if available).	A query is sent to the Health Information System (HIS) for information on the patient. The local HIS utilizes available information exchange services to request, locate, and retrieve patient information from other sources. The on-site care information and the retrieved electronic health record are accessible to the clinical staff and should be integrated into the emergency care record. For ease of use, the information may be summarized according to the clinical staff's preferences. If available and feasible, the personal health records may also populate the emergency care record. All information exchanges are auditable. Issues #2, #3, #4, #5, #6, and #7 may apply.
6.2.3.1a	**Alternative Action:** Patient presents without an on-site care record.	Patients who enter the emergency facility through a means other than on-site care, such as self-referral, brought in by family or friends, etc. will have their relevant demographics, allergies, past episodes of care captured by the ED staff that shall log them in and start a new emergency care record for the new patient encounter. A query for the patient's health information will be sent out through the HIS. The local HIS utilizes available information exchange services to request, locate, and retrieve patient information from other sources. All information exchanges are auditable. Issues #2, #3, #4, #5, #6, and #8 may apply.

6.2.4	**Event:** Assess, Triage, Perform Tests & Treat Patient	
6.2.4.1	**Action:** The clinical staff reviews treatment provided by on-site care providers and validates their initial assessment, adding any additional observations, and determining the patient's triage category. Clinical personnel treat the patient's injuries or illness.	Upon arrival of the patient at the treatment facility, the clinical staff reviews the emergency care record concerning treatment provided by on-site care providers and validates their initial assessment, adding any additional observations and making triage decisions as to the priority for treatment. The outcome of this activity would be a working diagnosis of the patient's conditions. If available, the clinical staff may utilize virtual specialty consultation by a qualified clinician to assist in the assessment process. The patient's injuries or illnesses are treated with the clinical staff referring to the emergency care record as part of the process.
6.2.4.1a	**Alternative Action**: Access the patient's EHR via emergency facility's IT systems integrated with EHR repositories.	If the treatment facility possesses an IT infrastructure with its own EHR, the demographic and clinical information contained in the emergency care record will be uploaded into the facilities' repository and used to populate/update the patient's EHR. All information exchanges are auditable. Issues #3, #4, #7, and #8 may apply.
6.2.5	**Event:** Input Information in Emergency Care Record	
6.2.5.1	**Action:** As treatment progresses, information such the results of diagnostic tests, treatment and medications rendered, and any changes to the treatment plan are entered into the emergency care record. Information is continually sent to public health agencies for population health monitoring purposes.	Information is added to the emergency care record by the clinical care staff. This will update the working diagnosis, treatment rendered, medications given, and profiles for limits to Activities of Daily Living (ADL). Diagnostic testing results are also collected and updated into the emergency care record. This may include information feeds from automated medical devices such as blood pressure monitors. All information exchanges are auditable. Issues #2, #3, #4, and #8 may apply here.

6.2.6	**Event:** Complete Disposition: Provide Information	
6.2.6.1	**Action:** Once treatment is complete, the patient is directed to any follow-on care as deemed necessary.	Once the patient has received the needed care at the emergency facility, they are sent to the appropriate follow-on facility which can provide any additional care they may require, if any, either short or long-term.
6.2.6.1a	**Alternative Action:** Patient is discharged.	If the patient requires no further treatment, the appropriate notations are made in the emergency care record by the clinical care staff, closing the patient encounter. The emergency care information is sent via the HIS to the appropriate repository to be combined with the patient's electronic health record. All information exchanges are auditable. Issues #2, #3, #4, #6, #7, and #8 may apply.
6.2.6.1b	**Alternative Action:** Patient is admitted to inpatient status.	If the patient is admitted to the definitive care portion of the facility, the emergency care is so notated by the clinical care staff and is closed for that patient encounter. The emergency record is sent by the clinical care staff to the admissions office and the receiving ward. All information exchanges are auditable. Issues #2, #3, and #4 may apply.
6.2.6.1c	**Alternative Action:** Patient is transferred to another in-patient facility.	If the patient is transferred to another facility, the emergency care record is so notated by the clinical care staff and the patient encounter is closed. The emergency care record will accompany the patient (in a paper copy), while a copy of the record is sent to the HIS to post in the patient's electronic health record in the appropriate repository. All information exchanges are auditable. Issues #2, #3, #4, #6, #7, and #8 may apply.
6.2.6.1d	**Alternative Action:** Patient is deceased.	If the patient dies in the emergency care facility, a notation is made in the emergency care record by the clinical care staff of the time and circumstance of the death and the record is then closed for that patient encounter. Notification is sent by the clinical care staff to the Medical Examiner (currently by telephone) of the date and cause of the patient's death.

6.2.6.2	**Action:** Once treatment is complete, information about the patient encounter will be available for other records relating to the patient, including (if they are available) any facility-based records and personal health records. It will also be available to the appropriate repositories.	Transmitted via the HIS to the appropriate repository (or repositories), the emergency care record is used to populate or update the patient's electronic health record and the PHR. Information exchanges may also occur with laboratories, pharmacies, blood banks etc. Appropriate information is sent to EOC systems and public health agencies that use the information to track health resources and conduct bio-surveillance respectively. The information sent to EOC systems is non-identifying or anonymized. All information exchanges are auditable. Issues #1, #3, #4 #6, #7, and #8 may apply.

6.3 Perspective 3: Definitive Care

Code	Description	Comments
6.3.1	**Event:** Access/Start Electronic Health Record (if required)	
6.3.1.1	**Action:** Access existing facility electronic health record or start a new electronic health record if one does not already exist for this patient.	A query is sent by the clinical care staff to the facility database for existing information on the patient. All information exchanges are auditable. Issues #1, #2, #3, #4, #7, and #8 may apply.
6.3.1.1a	**Alternative Action:** Power or communication failures.	A paper copy of the health record is begun for the patient. Once power and IT communications are restored, the information can be re-entered into the electronic health record, possibly by scanning the record. Additional sites at remote locations may be employed as backups for the primary repository in case of widespread communications and power outages caused by natural or man-made disasters. All information exchanges are auditable. Issues #1, #2, #3, #4, #7, and #8 may apply.
6.3.1.1b	**Alternative Action:** Patient cannot be identified.	A record is started with a patient identifier. If and when the patient's identity is established and validated, the emergency care record and on-site care record will be joined together with patient's electronic health record under the patient's correct identity. All information exchanges are auditable. Issues #1, #2, #3, #4, #7, and #8 may apply.
6.3.1.2	**Action:** EOC system sends situational awareness reports to all involved medical units and systems.	As information is gathered from a number of sources, EOC systems prepare and disseminate situational awareness reports keeping all involved medical entities informed of the situation.
6.3.2	**Event:** Access Additional Patient Health Information	
6.3.2.1	**Action:** Access electronic health record information.	The clinical care staff sends a request to the HIS for patient information which may reside within its affiliated repositories. The on-site care information, emergency care record and the retrieved electronic health record are accessible to the clinical staff. All information

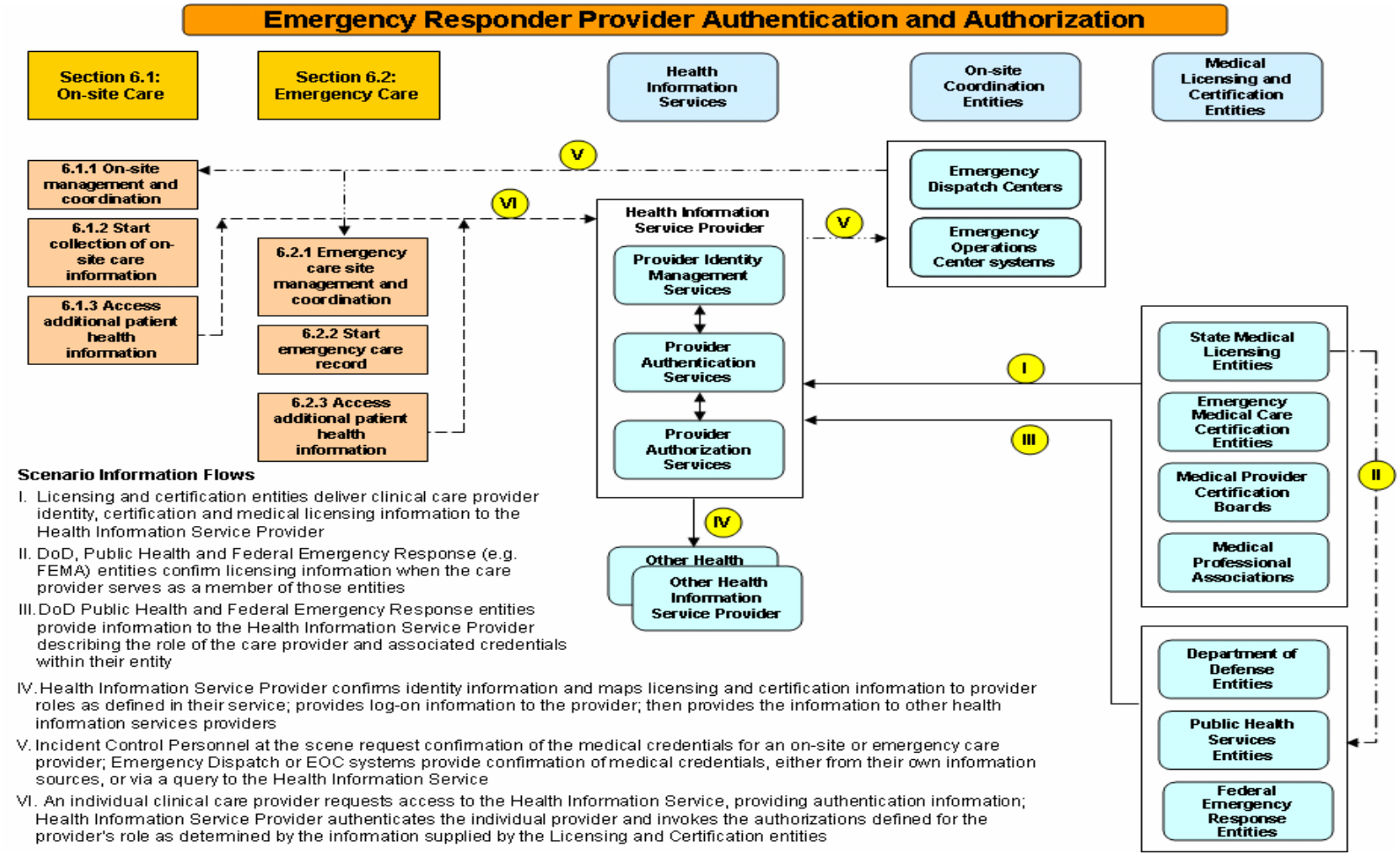
		exchanges are auditable. Issues #1, #2, #3, #4, #7, and #8 may apply.
6.3.2.2	**Action:** Where feasible, the emergency care record and any archival information (EHR, PHR) may be integrated with the facility electronic health record.	The PHR/EHR information may be "view only", or if it can be integrated, it may be used by the clinical care staff to populate a patient record in facility patient management systems. All information exchanges are auditable. Issues #1, #2, #3, #4, #7 and #8 may apply.
6.3.3	**Event:** Assess, Perform Tests, and Treat Patient	
6.3.3.1	**Action:** The clinical staff reviews treatment provided in the emergency setting, makes an assessment, adding any additional observations, performs required tests, and treats the patient's injuries or illness.	Upon arrival of the patient at the treatment facility, the clinical staff reviews the emergency care record concerning treatment provided by emergency care clinicians, adding any additional observations. The outcome of this activity would be an updated working diagnosis of the patient's conditions. The patient's injuries or illness is treated with the clinical staff referring to the electronic health record as part of the process. Issue #6 may apply.
6.3.3.1a	**Alternative Action:** Patient notes from emergency care have been recorded in EHR repository and clinical staff retrieves information.	The clinical staff sends a query via the in-house system (if applicable) requesting the emergency care record health information on the patient. The information is received and the clinical staff combines this information with that from the electronic health record. All information exchanges are auditable. Issues #2, #4, and #6 may apply.
6.3.4	**Event:** Input Information in Electronic Health Record	
6.3.4.1	**Action:** Information related to diagnosis, tests, treatment are recorded in the patient's EHR and PHR. Information is continually sent to public health agencies for population health monitoring purposes.	Clinical care staff adds update information to the electronic health record. It updates the working diagnosis, treatment rendered, medications given, and profiles for limits to ADL. Diagnostic testing results are also collected and updated into the electronic health record by the clinical care staff. This may include information feeds from automated medical devices such as blood pressure monitors. All information exchanges are auditable. Issues #2, #3, #4, #5, #6, #7, and #8 may apply.

6.3.5	**Event:** Complete Disposition; Provide Information	
6.3.5.1	**Action:** Patient disposition occurs (i.e. discharged to home, with follow-up, to another facility, against medical advice, or deceased.)	Patient care information is available for access by authorized clinical care staff in other facilities via HIS. All information exchanges are auditable. Issues #2, #3, #4, #6, #7, and #8 may apply.
6.3.5.1a	**Alternative Action**: The patient is discharged.	If the patient requires no further treatment, the appropriate notations are made by the clinical care staff in the electronic health record, closing the patient encounter. The updated electronic health record information is sent by the clinical care staff via the HIS to the appropriate repository(ies) to be combined with the patient's electronic health record. All information exchanges are auditable. Issues #4, #7 and #8 may apply.
6.3.5.1b	**Alternative Action**: The patient is transferred to inpatient status at another facility.	The electronic health record is sent directly to the receiving facility. A paper copy also accompanies the patient. It is also available to the clinical care staff via query through the HIS. All information exchanges are auditable. Issues #1, #2, #3, #4, #5, #6, #7, and #8 may apply.
6.3.5.1c	**Alternative Action:** The patient is discharged with outpatient follow-up.	The updated electronic health record information is available to clinical care staff via query through the HIS. All information exchanges are auditable. Issues #1, #2, #3, #4, #5, #6, #7, and #8 may apply.
6.3.5.1d	**Alternative Action:** The patient is transferred to another facility.	The updated electronic health record information is sent directly to the receiving facility and is also available to clinical care staff through query via HIS. All information exchanges are auditable. Issues #1, #2, #3, #4, #5, #6, #7, and #8 may apply.
6.3.5.1e	**Alternative Action:** The patient is deceased.	If the patient dies in the definitive care facility, a notation is made in the electronic health record by clinical care staff of the time and circumstance of the death and the record is then closed for that patient encounter. Notification is sent by clinical care staff to the Medical Examiner (currently by telephone) of the date and cause of the patient's death.

6.3.5.1f	**Alternative Action:** The patient is discharged against medical advice.	A notation by clinical care staff is made and signed in the electronic health record, closing that patient encounter.
6.3.5.2	**Action:** Release of information.	Information on the patient's care for the present episode is sent by clinical care staff to the HIS where it is to be located with existing patient health information in the electronic health record. Appropriate information is sent to EOC systems and public health agencies that use the information to track health resources and conduct bio-surveillance respectively. The information sent to EOC systems is non-identifying or anonymized. All information exchanges are auditable. Issues #1, #2, #3, #4, #7, and #8 may apply.

7.0 Additional Perspectives

7.1 Provider Authentication and Authorization Information Flows



Scenario Information Flows

I. Licensing and certification entities deliver clinical care provider identity, certification and medical licensing information to the Health Information Service Provider

II. DoD, Public Health and Federal Emergency Response (e.g. FEMA) entities confirm licensing information when the care provider serves as a member of those entities

III. DoD Public Health and Federal Emergency Response entities provide information to the Health Information Service Provider describing the role of the care provider and associated credentials within their entity

IV. Health Information Service Provider confirms identity information and maps licensing and certification information to provider roles as defined in their service; provides log-on information to the provider; then provides the information to other health information services providers

V. Incident Control Personnel at the scene request confirmation of the medical credentials for an on-site or emergency care provider; Emergency Dispatch or EOC systems provide confirmation of medical credentials, either from their own information sources, or via a query to the Health Information Service

VI. An individual clinical care provider requests access to the Health Information Service, providing authentication information; Health Information Service Provider authenticates the individual provider and invokes the authorizations defined for the provider's role as determined by the information supplied by the Licensing and Certification entities

Step	Activity	Comments
I	Medical licensing and certification entities communicate provider-specific licensing and certification information to the Health Information Service Provider	Medical professionals are issued licenses to practice medicine in a specific State by the designated State licensing entity, typically a State Medical Board. That entity sets the requirements for licensure. For purposes of describing this flow, the term "medical professionals" includes physicians, physician assistants, nurses, pharmacists, and other medically licensed or certified personnel. For this use case, licensure is assumed to have taken place before an incident occurs. In this step of the flow, a State licensing entity could provide licensing information including information to identify the individual provider, the license(s) issued and the privileges granted by the license to the Health Information Service Provider. In the near term this would be a paper-based information exchange, however, in the future it could be an electronic transaction. The State licensing entity would also provide updates to this information as needed to reflect changes in licensure or expiration of a license. Comparable processes would apply to those entities which provide certifications related to emergency medical care. All information exchanges are auditable.
II	DoD, PHS and Federal Emergency Management entities confirm the licensing and certification information of their medical providers	The DoD, PHS and Federal Emergency Management entities require that their medical personnel hold a current license to practice which has been issued by a State licensing entity. In this step of the flow, the licensing information is retrieved and confirmed be these entities to incorporate into their information systems. All information exchanges are auditable.
III	DoD, PHS and Federal Emergency Management entities provide additional information about the medical privileges of the clinical care provider based on the role the provider fulfills within their entity	The federal entities mentioned in step II may also grant additional privileges to individual clinical care providers based on their role in the federal entity. For example, physicians in DoD service are granted privileges to practice in a broader geographical region than just within the State which issued their medical license. In this step of the flow, the federal entity could provide that additional role-based information, as well as, any unique federal identification or authentication

		information to the Health Information Service Provider so that their personnel could be readily identified, authenticated and their medical privileges confirmed electronically. All information exchanges are auditable.
IV	Health Information Service Provider maps the licensing and certification information	Upon receiving the licensing or certification information from an entity mentioned in steps I and III, the Health Information Service Provider maps it to the provider roles as defined in their health information network. Additional information is collected as needed to confirm the identity and establish the network authentication credentials for the individual provider. For federal employees this potentially could include authentication information derived from a federally issued employee identification card or other comparable authentication device. All information exchanges are auditable.
V	Incident control personnel request confirmation of the medical credentials of a clinical care provider	During an incident, there may be a need to confirm the identity and medical credentials of an individual clinical care provider when they request permission to enter the scene. At this step in the flow, the incident control personnel at the scene could request confirmation of the medical credentials in one or more possible ways, including: • Via a request made to EOC systems. That center could either confirm the credentials from their own internal information sources (e.g. EMTs on staff for at center), or via a query to the Health Information Service Provider. In the latter instance, the response to the query could potentially include additional information that may be used to identify and authenticate the individual, as well as information which describes the role(s) which that individual is authorized to perform (as defined in steps I and III). • Potentially via a field-deployable authentication device (e.g. identification card reader or biometric device) which could transmit information directly to a remote authentication service and receive authentication confirmation and authorization information in return. • There may be additional mechanisms available for querying to confirm the

		credentials of a medical provider in the field. For example in the future, it may be possible to make this query directly from the field without the need for an intermediary (e.g. a query sent directly from the requestor to a registry service). All information exchanges are auditable.
VI	On-site or emergency care provider requests access to the Health Information Network	An individual clinical care provider requesting access to the HIS provides their authentication information; HIS provider authenticates the individual provider and invokes the authorizations defined for the provider's role as determined by the information supplied by the licensing and certification entities in steps I and III. All information exchanges are auditable.

8.0 Emergency Responder Electronic Health Record Definition

The following data elements for both the on-site care and emergency care records were derived from two main sources. The first is the listing of data elements included in the AHIC recommendation for an ER-EHR. The second source was comments received on the ER-EHR Use Case Synopsis. This listing is not to be treated as all-inclusive; rather, it is illustrative of the types of data elements various stakeholder groups felt were important.

The use case recognizes that there may be some differences as well as similarities in the information being collected during on-site care as compared to emergency care. In some instances, information collected during on-site activities will also be confirmed in emergency care (e.g. medication history). In other instances, the same information will be collected in multiple care settings to document the current patient condition (e.g. vital signs). Further, there is some information which may not be practical to gather at an on-site care location, and may only be gathered during emergency care (e.g. advance directives)

The following table illustrates some of the potential differences and similarities in the information collected. However, it is not intended to fully define the information gathered in either care setting.

Item	On-site Care	Emergency Care Record
Demographics - examples may include: • Name • Age • Gender • Primary language spoken	**X**	**X**
Emergency Contact Information	**X**	**X**
Allergies - examples may include: • Allergies to medications • Significant food allergies • Latex	**X**	**X**
Medication History - examples may include: • Long-term maintenance medications • Other prescribed medications • Over the counter medications taken in the last 5-7 days • Administration of blood//blood products	**X**	**X**

Item	On-site Care	Emergency Care Record
Problem List - examples may include: • Current problem(s) • Other ongoing problems	X	X
Immunizations - examples may include: • Tetanus • Anthrax series	X	X
Pain Status • Level (1-10)	X	X
Treatment History - examples may include: • Last two episodes of care for the chief complaint • Last five episodes of care		X
Present Episode - examples may include: • Complaint(s) • Vital signs • Visual assessment • Medications administered	X	X
Patient Location - examples may include: • Location of incident • Current location • Receiving facility location • Date/time of arrival	X	X
Triage Category - examples may include: • Delayed • Immediate • Minimal • Expectant	X	X
Advance Directive Status - examples may include: • Living will • Do not resuscitate orders • Medical power of attorney		X

Office of the National Coordinator for Health Information Technology (ONC)

Emergency Responder Electronic Health Record

Detailed Use Case - Appendix

Appendix: Glossary

911 Telecommunicator: As used by 911 services, a person who is trained and employed in public safety telecommunications. The term applies to call takers, dispatchers, radio operators, data terminal operators or any combination of such functions in a Public Safety Answering Point (PSAP).

AHIC: American Health Information Community.

Battalion Aid Station: A field medical unit. The first organized aid station a soldier/marine will see when transported from the care of the front line corpsmen.

Care: Relieving the suffering of individuals, families, communities, and populations by providing, protecting, promoting, and advocating the optimization of health and abilities.

Command and Control Center: The location where the exercise of authority and direction by a properly designated Incident Commander over assigned and attached forces occurs in the accomplishment of the mission.

Coroner: A public official whose primary function is to investigate by inquest any death not deemed to be of natural causes. This is sometimes an elected position, and the individual may not have a medical background, as required for a Medical Examiner.

Credentialed Personnel: A degree, certificate or award which recognizes a course of study taken in a certain area, and acknowledges the skills, knowledge and competencies acquired. In the health field, personnel are usually required to register with the credentialing body or institution not only in their discipline, but also in the state, locality, and institution where they practice.

Definitive Care: Definitive care is provided by clinical care non-ED personnel providing acute, rehabilitative, or custodial care. They evaluate and treat patients in locations other than an ED, such as specialty hospitals, dialysis centers, nursing homes, hospices, and other facilities. They may include physicians, nurses, respiratory therapists, technicians, and many others.

Definitive Care Facility (e.g. Facility in the Definitive Care System): A facility in the comprehensive health care system that provides health care to patients excluding that provided in the ED. Typically, facilities in the comprehensive care system offer more specialized care than that offered in the ED. Patients may access facilities in the comprehensive care system directly, be discharged to them after leaving the ED, or be discharged from one facility in the comprehensive care system to another.

Demographic Information: Basic patient identifying information such as name, age, gender, and primary language spoken.

Department of Health and Human Services (HHS): This is the federal agency responsible for human health, and has oversight over many other federal agencies such as FDA, NIH, CDC, CMS, AHRQ, SAMHSA, and others.

Designated Receiving Facility: A designated receiving facility is a facility where a patient will be sent for the next stage of treatment.

DHS: The U.S. Department of Homeland Security

Diagnostic Test Results: Results of any diagnostic tests ordered: blood or urine tests, X-rays, EKG, etc.

Disaster Medical Assistance Teams: Teams of medical professionals organized by the National Disaster Medical System pre-designated to respond to disasters with specific capabilities.

Discharge plan: A synopsis of the treatments recommended for the patient to complete upon leaving the institution, including medications, medical appointments, other therapeutic interventions, further diagnostic studies, and recommendations for follow-up.

DMORT: Disaster Mortuary Operational Response Teams.

DoD: The Department of Defense.

DOT: The Department of Transportation.

Electronic Health Record (EHR): The electronic health record is a longitudinal electronic record of patient health information generated in one or more encounters in any care delivery setting. This information may include patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory information and radiology reports.

Emergency Care: Emergency care is provided by clinical care personnel operating in a MTF. They usually work in an ED or equivalent military facility, evaluating and or treating patients before they are discharged, admitted to an inpatient facility, or deceased. They may include physicians, advanced practice nurses (e.g. nurse practitioners, nurse anesthetists), emergency nurses, physician's assistants, and military corpsmen.

Emergency Care Record: Record of patient care given in an ED. May be in an electronic format.

Emergency Contact Information/Next of Kin Registries: An emergency contact information/next-of-kin registry is an organized system for the registration, storage, retrieval, and dissemination of emergency contact information for individual persons.

Emergency Dispatch Center: The location where emergency resources at the local level are managed and dispatched; also known as a 911 Call Center or Public Safety Answering Point (PSAP).

Emergency Medical Dispatcher: A specially trained public safety telecommunicator with the specific emergency knowledge essential for the appropriate and efficient functioning of emergency medical dispatching.

Emergency Medical Systems (EMS): The organized arrangement of field and hospital clinicians, response and transport vehicles, protocols and procedures responsible for patient care and transport from time of injury/illness through the delivery of emergency care.

Emergency Medical Technician (EMT): There are four license levels defined by DOT. They are Medical First Responder (MFR), Emergency Medical Technician-Basic (EMT, EMT-B, Basic), EMT-Intermediate (EMT-I, Intermediate, EMT-S, Specialist), and EMT-Paramedic (EMT-P, Paramedic, Advanced EMT, AEMT).

Emergency Operations Center (EOC): An EOC is the physical location where various organizations come together under the direction of EOM during an emergency to coordinate response and recovery actions and resources. These centers may alternatively be called command centers, situation rooms, war rooms, crisis management centers, or other similar terms.

Emergency Operations Center systems: IT systems supporting the EOC. They manage the situational awareness, resource management and other functions.

Emergency Operations Management (EOM): Emergency operations management personnel are involved in planning, staffing, and information collection activities at the institution, community, or regional level to implement measures that will save the most patients. They track the status of available resources; allocate patients to the facilities best suited to care for them; and arrange staffing, logistics, and supplies to care for patients.

They may include disaster responders; patient tracking personnel who help provide family members with information on the status and location of patients; hospital planners; nursing supervisors; EMS managers/patient regulators who determine where ambulances take patients; other National Incident Management System (NIMS) roles; and emergency managers and planners.

Episode of Care: A patient health problem starting from the first encounter to discharge, release to the care of another facility, or departure against medical advice.

Evacuation Center: Shelter which provides a temporary “safe haven” to evacuated or displaced populations. Evacuation centers are austere and not intended for long-term occupancy. They are usually established by local governmental entities or organizations such as the American Red Cross.

Fatality Management Systems: IT systems used in support of the Medical Examiner/fatality manager in support of their mandated duties.

Federal Medical Station: A unit intended to provide a federal deployable medical capability (equipment, material, pharmaceuticals) to assist hospitals in meeting needed surge requirements, though in an emergency they may assist state and local governments.

FEMA: The Federal Emergency Management Agency.

FHA: Federal Health Architecture.

First Responder: Police and fire, whose primary expertise is something other than medical, but who can provide basic first aid.

Health Information Services (HIS): Services provided by Health Information Networks for information exchange and interoperability in a local market.

Health Information Service Providers: A network service provider that enables or oversees the access to and exchange of health information, in a secure manner, for the purpose of supporting clinician and consumer needs.

Health Record (EHR): The health record is a longitudinal electronic record of patient health information generated in one or more encounters in any care delivery setting. This information may include patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory information and radiology reports.

Health Registries: A health registry is an organized system for the collection, storage, retrieval, analysis, and dissemination of information on individual persons who have either a particular disease, a condition (e.g., a risk factor) that predisposes to the occurrence of a health-related event, or prior exposure to substances (or circumstances) known or suspected to cause adverse health effects.

Health Researchers: Organizations or individuals who normally perform analysis of health trend information. They normally use anonymized patient information in their studies.

Incident Commander: The officer in charge of the overall management of an incident at the incident site. He or she is responsible for building management organization based on a span of control and incident complexity. There is only one incident commander per incident.

Medical Examiner: A physician officially authorized by a governmental unit to ascertain the cause of death. Unlike a coroner, the medical examiner is always a physician.

MTF: Medical Treatment Facility. A facility established to provide medical treatment to patients including hospitals, urgent care centers, ambulatory care centers, and temporary medical facilities established for a large scale emergency.

National Incident Management System (NIMS): The NIMS integrates effective practices in emergency preparedness and response into a comprehensive national framework for incident management. The NIMS will enable responders at all levels to work together more effectively to manage domestic incidents no matter what the cause, size or complexity.

ONC: Office of National Coordinator for Health Information Technology.

On-site Care Record: The on-site care record is used to collect information provided at the scene of the incident by on-site care providers. This is typically provided to Emergency Department staff and becomes a part of the patient's electronic health record. The on-site care record is currently known by other titles, such as 'Ambulance Run Report'.

On-site Care Provider: On-site care providers are the initial personnel to deliver medical care at the scene of an incident. While this would typically be EMTs, it can also include medically trained fire, law enforcement, and uniformed services medical personnel and civilian DMATs.

OPHEP: HHS Office of Public Health Emergency Preparedness.

Patient Regulator: As used in the military services, those who determine where ambulances take patients. This term is also known in the non-military setting as Medical Control and/or EMS Director.

Personal Health Record (PHR): A health record that can be created, reviewed, annotated, and maintained by the patient or the care giver for a patient. The health record may include any aspect(s) of their health condition, medications, medical problems, allergies, vaccination history, visit history, or communications with their healthcare providers.

Problem List: A synopsis of the patient's medical conditions, such as diabetes, hypertension, ankle fracture, etc.

Public Health Systems: IT systems used by the various public health entities at the various levels of government (local, state, and federal). These systems are mostly used to perform the functions of bio-surveillance and health trend monitoring.

Rehabilitative Care: After hospitalization, people who need continued inpatient skilled nursing care to ease the transition back to home are taken care of in rehabilitative care.

Repository: A repository providing a central storage location for electronic health records – provides aggregation point for information used by public health practitioners and emergency operations management.

Specialty Treatment: Medical treatment provided by providers or in institutions designed uniquely for specific types of treatment.

Temporary Care Facilities: Facilities set up temporarily to care for patients when the situation dictates that normal facilities cannot receive them.

Triage: The sorting of and allocation of treatment to disaster victims according to a system of priorities designed to maximize the number of survivors.

Triage Collection Point: A temporary location, at or near an incident site, where patients who need medical care are situated until they can be transported to the ED or other appropriate medical care facility.