INTRODUCTION

Biological hazards, also known as biohazards, refer to biological substances that pose a threat to the health of living organisms. Sources of biological hazards may include bacteria, viruses, insects, plants, birds, animals, and humans. Some diseases or infections caused by biohazards can be communicable, meaning they can be readily transmitted person-to-person after initial dissemination; some can only do so when the disease is in certain forms (e.g., pneumonic plague as opposed to bubonic plague); and others are not generally transmitted person-to-person (e.g., respiratory anthrax). Depending on the severity of the illness and the number of people affected, diseases caused by a biohazardous agent may result in a healthcare surge and require the appropriate application of control measures to contain the spread of disease.

The U.S. Centers for Disease Control and Prevention (CDC) categorizes various diseases according to risk level, with Level 1 corresponding to minimal risk and Level 4 corresponding to extreme risk.

- Biohazard Level 1: Includes agents that are non-pathogenic, do not cause disease in healthy humans or animals, and pose minimal potential hazard to the environment.
 Examples include Bacillus subtilis and non-pathogenic strains of Escherichia coli.
- Biohazard Level 2: Includes agents associated with human disease that are rarely serious and for which preventative or therapeutic interventions are often available with little risk to the environment. Examples include hepatitis A, B, and C, and Lyme disease.
- Biohazard Level 3: Includes agents associated with serious or lethal human disease for which preventative or therapeutic interventions may be available. Examples includes bacteria and viruses that can cause severe to fatal disease in humans or animals but does not ordinarily spread from one infected individual to another. Examples include anthrax and hantaviruses.
- Biohazard Level 4: Includes agents likely to cause serious or lethal human and animal disease for which preventative or therapeutic interventions are not usually available. These are high risk to individuals and the community. These agents may be readily transmitted from one individual to another, directly or indirectly. Examples include Bolivian and Argentine hemorrhagic fevers, Ebola virus, and other hemorrhagic illnesses. When dealing with biological hazards at this level, the use of a positive pressure personnel suit with a segregated air supply is mandatory. Currently there are no bacteria classified at this level.

The accidental or intentional release of a biohazard that threatens public health, property and the environment may include:

- Releases at facilities (including laboratories) that handle or store biohazardous materials
- Releases during the transportation of biohazardous materials
- Discovery of unidentified or unknown biohazardous materials
- Suspected or confirmed terrorism involving the release of biohazardous materials (bioterrorism)

The introduction of biological agents, whether natural or deliberate, may be first detected through clinical or hospital presentation of exposed individuals. Environmental surveillance systems such as BioWatch may detect the presence of a biological agent in the environment and trigger directed environmental sampling and intensified clinical surveillance to rule out or confirm an incident. Because there are no definitive field tests for biological agents, all suspected biohazard samples are transported to a Laboratory Response Network (LRN) laboratory for confirmatory testing. If the incident begins as an outbreak/epidemic of unknown origin detected through local health surveillance systems or networks, laboratory analysis is initiated through the routine public health laboratory network.

The LRN is a network of local, state and federal laboratories that provide the infrastructure and capacity to respond to biological terrorism and other public health emergencies. LRN-Biological (LRN-B) laboratories may be contacted through the LHD Communicable Disease Control Officer or the California Department of Public Health (CDPH) Duty Officer. In California, there are a number of LRN-B laboratories, including the state (CDPH) laboratory. LRN National Laboratories include CDC, U.S. Army Medical Research Institute of Infectious Diseases, and the Naval Medical Research Center. The LRN National Laboratories conduct specialized strain characterizations, bioforensics, select agent activity, and handling of highly infectious biological agents that can cause severe morbidity or mortality in humans and for which vaccines or other treatments may not be available. CDPH coordinates access to National Laboratories and LHDs must contact CDPH to facilitate access to the National Laboratories and other federal resources.

Local agencies, including the Local Health Department (LHD), Environmental Health Department (EHD), law enforcement, fire/hazardous materials, and local emergency management have the primary responsibility for responding to emergencies involving biohazards in accordance with local plans and procedures. Activities should prioritize the containment, management, and cleanup of the biohazard in addition to the protection, triage, and treatment of people, the environment, and property.

Activities may include the deployment of public health staff, hazardous materials response teams, law enforcement, emergency medical services providers, and other resources. Incident Command/Unified Command may be established if warranted by the type, size and scope of the biohazard incident.

RESPONSE ACTIONS

The response actions below summarize the activities undertaken by the principle local and state agencies/entities during emergencies involving a biohazard incident. The response actions will be prioritized and stratified by the biohazard level and magnitude of the incident.

The immediate task following the identification of a biohazard is to identify the population at risk and the source and geographic scope of the incident. Immediate control measures may be needed to contain the spread of disease such as drug treatments and/or vaccines. An assessment of the extent of biological contamination and identification of an effective environmental decontamination strategy may be necessary that includes risk assessment, environmental sampling, cleanup goals, and long-term monitoring.

<u>Local Health Department (LHD)/Environmental Health Department (EHD)</u>

During normal day-to-day activities, an LHD or EHD may contact the CDPH Center for Infectious Disease's Division of Communicable Disease Control (CID-DCDC) for technical guidance and/or assistance if an outbreak occurs, if there is an increase in disease prevalence, or in the case of biohazard/bioterrorism. During an unusual event or emergency involving a biohazard, the LHD/EHD should:

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- Local and state agencies in accordance with statutory and regulatory requirements and local policies and procedures
- MHOAC Program
- CDPH Duty Officer Program
- If bioterrorism is suspected, the LHD must also notify:
 - California State Warning Center (CSWC)
 - Local Federal Bureau of Investigation (FBI) office
 - Local law enforcement

Collect and submit samples to the appropriate local or state public health laboratory for testing, as necessary. If bioterrorism is suspected, submit samples as directed by the FBI for criminal investigation.
If the EHD is a designated Certified Unified Program Agency (CUPA) or hazardous materials (HAZMAT) response agency, provide support to Incident Command/Unified Command in identifying and obtaining samples of any unknown biohazardous materials/wastes

	If the EHD is the Local Enforcement Agency (LEA) (counties with delegated medical waste authority) for regulated medical waste and the incident is related to medical waste, provide support to Incident Command/Unified Command in the management of the waste.
	Coordinate with state and federal agencies on epidemiological activities and/or criminal investigation.
	Take steps necessary to protect public health and environmental health, including providing guidance on appropriate community mitigation activities or control measures to contain the spread of disease.
	Provide treatment/prophylaxis to field providers, response personnel and the public, as indicated.
	Provide situational information to the MHOAC Program in accordance with local policies and procedures.
	If medical and health resources are needed that cannot be obtained through existing agreements or commercial vendors, request resources through the MHOAC Program in accordance with local policies and procedures. Local policies and procedures will determine the appropriate contact within the MHOAC Program since MHOAC Program functions are typically shared between multiple departments including the LHD, EHD, LEMSA and mental/behavioral health agency. Include required logistical support ("wrap around services") such as food, lodging, and fuel as part of the resource request. If non-medical and health resources are needed, request resources through the appropriate local agency in accordance with local policies and procedures and inform the MHOAC Program.
	Coordinate with affected field-level entities, LEMSA, MHOAC Program, Incident Command/Unified Command and Department Operation Centers (DOCs)/Emergency Operation Centers (EOCs) in accordance with local policies and procedures.
Loca	I Emergency Medical Services Agency (LEMSA)
	Notify:
	 Local and state agencies in accordance with statutory and regulatory requirements and local policies and procedures
	MHOAC Program
	Provide protocols and guidance to EMS providers on personal protective equipment.

	Report potentially exposed EMS personnel to the LHD; screening and/or necessary treatment after exposure should be the responsibility of the worker's compensation occupational health service provider.
	Provide situational information to the MHOAC Program in accordance with local policies and procedures.
	If medical and health resources are needed that cannot be obtained through existing agreements or commercial vendors, request resources through the MHOAC Program in accordance with local policies and procedures. Local policies and procedures will determine the appropriate contact within the MHOAC Program since MHOAC Program functions are typically shared between multiple departments including the LHD, EHD, LEMSA and mental/behavioral health agency. Include required logistical support ("wrap around services") such as food, lodging, and fuel as part of the resource request. If non-medical and health resources are needed, request resources through the appropriate local agency in accordance with local policies and procedures and inform the MHOAC Program.
	Coordinate with affected field-level entities, MHOAC Program, Incident Command/Unified Command and DOCs/EOCs in accordance with local policies and procedures.
<u>MH</u>	OAC Program
	Notify:
	Regional Disaster Medical and Health Coordination (RDMHC) Program
	• CDPH and EMSA Duty Officer Programs (either directly or via the RDMHC Program)
	 Emergency management agency for the Operational Area and other agencies in accordance with local policies and procedures
	Prepare a Medical and Health Situation Report containing the minimum data elements. The initial Medical and Health Situation Report may be provided verbally to the RDMHC Program under pressing circumstances.
	Within two hours of incident recognition, submit the initial Medical and Health Situation Report to the:
	RDMHC Program
	CDPH and EMSA Duty Officer Programs (or the Medical and Health Coordination Center [MHCC) if activated)

 Emergency management agency for the Operational Area (or the Operational Area EOC if activated)
Provide updated Medical and Health Situation Reports as follows:
Once during each operational period at agreed upon times
When significant changes in status, prognosis, or actions are taken
 In response to state/regional agency request as communicated by the RDMHC Program
Coordinate with the affected field-level entities, LHD, EHD, LEMSA, and CDPH and EMSA Duty Officer Programs (or the MHCC, if activated) to report situational information.
Coordinate with the RDMHC Program to obtain information, state-level policy decisions for response activities, and guidance developed by state-level programs and coordinated through the MHCC.
Attempt to fill resource requests within the Operational Area or by utilizing existing agreements (including day-to-day agreements, memoranda of understanding, or other emergency assistance agreements).
If requested resources cannot be obtained within the Operational Area or through existing agreements, prepare a Resource Request that includes the need for logistical support ("wrap around services") such as food, lodging, and fuel. Submit the resource request to the:
RDMHC Program, which will begin to coordinate the resource acquisition process; confirm receipt by the RDMHC Program
 Emergency management agency for the Operational Area (or Operational Area EOC is activated). Confirm receipt and entry into the resource tracking system used by Cal OES (currently, Cal EOC)
Ensure that situational information is provided to the RDMHC Program, emergency management agency for the Operational Area (or Operational Area EOC if activated), and CDPH and EMSA Duty Officer Programs (or MHCC if activated) to support the requested resources. A Medical and Health Situation Report should be submitted with the resource request or as soon as possible.
Notify the requestor of the outcome of their request and delivery details if the request is filled.
Support the Medical and Health Branch of the Operational Area EOC if activated.

RDMHC Program

Notify and coordinate with the CDPH and EMSA Duty Officer Programs (or MHCC if activated).
Notify and coordinate with emergency management agencies in accordance with policies and procedures, including the Cal OES Regional Duty Officer (or Regional Emergency Operations Center (REOC), if activated).
Confirm that the MHOAC Program submitted the Medical and Health Situation Report to the CDPH and EMSA Duty Officer Programs (or MHCC if activated); if not, submit immediately.
Confirm that the MHOAC Program submitted the Medical and Health Situation Report to the emergency management agency for the Operational Area (or Operational Area EOC if activated); if not, submit immediately.
Confirm that the Cal OES Regional Duty Officer (or REOC if activated) received the information contained in the Medical and Health Situation Report; if not, submit immediately.
If resources have been requested, immediately begin the process of filling the resource request by coordinating with unaffected Operational Areas within the Mutual Aid Region.
Coordinate with the Cal OES Regional Duty Officer (or REOC if activated) to ensure proper tracking and fulfillment of the resource request.
Notify the CDPH and EMSA Duty Officers (or MHCC if activated) that a resource request is being processed.
Notify the requesting MHOAC Program, CDPH and EMSA Duty Officer Programs (or MHCC if activated), and Cal OES Regional Duty Officer (or REOC if activated) of the outcome of the request and delivery details if the request is filled within the Mutual Aid Region.
Coordinate with the MHCC to ensure that information, policy-level decisions for response activities, and guidance developed by state-level programs are distributed to the MHOAC Program(s).
Coordinate with CDPH and EMSA to support the Medical and Health Branch of the REOC if activated.

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	BIOLOGICAL HAZARD EMERGENCIE
<u>CDP</u>	PH Duty Officer
	Notify and provide situational information to local and state agencies, including LHD/EHDs, CDPH Programs, MHOAC Programs, RDMHC Programs, EMSA and Cal OES.
CDP (DC	PH Center for Infectious Disease, Division of Communicable Disease Control DC)
bioh requ the l	CDPH CID DCDC responds to unusual events and emergencies related to bioterrorism and azards by working with the affected LHDs and other local response agencies when lested. Notification of CID DCDC may be through the CDPH Duty Officer or may come from LHD to the DCDC Duty Officer. Upon notification of a biohazard incident or bioterrorism, H CID DCDC will:
	Communicate with LHDs and EHDs to obtain complete information about the incident and provide technical support, guidance, and assistance.
	Provide subject matter expertise and technical guidance for the incident. If the MHCC is activated, CID may provide staff for the MHCC Operations Section. As needed, the Sciences Branch may also be activated.
	Notifications:
	 The CDPH Duty Officer, if the incident information/notification was reported directly to the CDPH DCDC Duty Officer;
	 CDPH CID may request activation of the MHCC or Joint Disaster Policy Council (JDPC), as indicated by the magnitude and scope of the incident.
	 Appropriate CDPH Centers and Programs, primarily the Center for Environmental Health, and other Centers, as indicated; and
	Assess statewide LRN-B laboratory capacity and/or other networks that may be available to provide laboratory services and/or surge capacity for testing.
	Maintain the capacity and capability of CDPH laboratory and epidemiology and surveillance processes and activities to support response efforts.
	Support and coordinate investigation and response activities during multi- jurisdictional incidents.

☐ Collaborate with local partners and subject matter experts to develop guidance (e.g., community mitigation activities and infection control) for LHDs and healthcare

providers, as needed, for distribution through the MHCC, if activated.

Provide direct support to LHDs/EHDs when requested and staffing is available. Direct support may include deployment of epidemiologists to assist with surveillance, data collection, and interviews of exposed individuals.
Coordinate with other states and federal agencies and programs for information sharing, situational awareness, and subject matter expertise.
Responsibilities of the CDPH Microbial Diseases Laboratory are to:
 Analyze samples for bacterial agents and toxins (e.g., ricin, botulism, staphylococcal enterotoxin B and other microbial toxins). Refer specimens for other testing to appropriate laboratories.

- Provide diagnostic testing for special pathogen identification and environmental microbiological testing for various media such as water, shellfish and food.
- Test or refer environmental samples to other appropriate laboratories to test for bioterrorism agents.
- Provide laboratory services and consultation to local public health laboratories and LHDs, as needed.
- Function as the state-level laboratory for the LRN-B for microbial, parasitic and mycotic diseases and facilitate access to LRN National Laboratories.
- Responsibilities of the CDPH Viral and Rickettsial Diseases Laboratory Branch are to:
 - Analyze samples for viral and rickettsia agents; screen samples for rule out of smallpox and viral hemorrhagic fever agents; and refer specimens, as indicated, for further laboratory testing.
 - Test samples to rule in/out bioterrorism agents.
 - Work closely with local and federal partners.
 - Provide laboratory services and consultation to local public health laboratories and LHDs, as needed.
 - Provide surge support for local and conduct screening and definitive testing for disease control programs.
 - Function as the state-level laboratory for the LRN-B and facilitate access to LRN National Laboratories.

CDPH Center for Environmental Health (CEH)

CDPH CEH Food and Drug Branch (FDB) oversees protection of food and drug supplies, responds to foodborne illness outbreaks, food and drug tampering incidents, and bioterrorism/agroterrorism incidents. FDB works with food, drug, and medical device

manufacturers and wholesalers to ensure that potentially contaminated products are removed from commerce. CDPH CEH laboratories, Food and Drug Laboratory Branch (FDLB) and Drinking Water and Radiation Laboratory Branch (DWRLB), conduct microbial analyses on food and drinking water samples. The CDPH CEH Environmental Management Branch (EMB) provides subject matter expertise and technical guidance on unusual events and emergencies related to regulated medical waste /biohazardous wastes by working with the regulated community (hospitals, healthcare facilities, medical waste transport and disposal companies), affected LHDs and other local response agencies when requested.

Notification of CEH of a biohazard incident related to medical waste or foods and drugs may be through the CSWC or may come from the CDPH Duty Officer, LHD/EHD or a regulated facility. Upon notification of a biohazard incident, CDPH CEH will: Communicate with regulated facilities, LHDs and EHDs to obtain complete information about the incident and provide technical support, guidance, and assistance; Provide subject matter expertise and technical guidance for the incident. If the MHCC is activated, CEH programs may provide a representative for the MHCC Operations Section Sciences Branch. ☐ Notifications: The CDPH Duty Officer, if the incident information/notification was reported directly to the CEH o CDPH CEH may request activation of the MHCC or JDPC, as indicated by the magnitude and scope of the incident. Appropriate CDPH Centers and Programs, as indicated Local Enforcement Agencies (LEAs) (counties with delegated medical waste authority) Regulated facilities (hospitals, healthcare facilities, food processors, etc.) Assess statewide medical waste storage/treatment capacity that may be available to provide surge capacity. ☐ Support and coordinate investigation and response activities during multijurisdictional incidents. For example, CEH EMB coordinates with CDPH CID DCDC on medical waste issues related to infection control. ☐ Collaborate with local partners and subject matter experts to develop guidance for

LHDs/EHDs food and drug manufacturers, and healthcare facilities, as needed, for

distribution through the MHCC, if activated.

	Provide direct support to LHDs/EHDs when requested and staffing is available. Direct support may include deployment of EMB staff to assist with medical waste inspections, investigations and related concerns; FDB staff to conduct food-related inspections, etc.
	Coordinate with other states and federal agencies and programs for information sharing, situational awareness, and subject matter expertise.
	Responsibilities of the CDPH CEH laboratories are to:
	 Analyze food and drinking water samples for bacterial agents and toxins (e.g., ricin, botulism, e. coli and microbial agents).
	 Provide environmental microbiological testing for various media such as water, shellfish and food.
	 Test or refer environmental samples to other appropriate laboratories to test for bioterrorism agents.
	 Provide laboratory services and consultation to local public health laboratories and LHDs/EHDs, as needed.
	 If the MHCC is activated, FDLB and DWRLB may provide representatives for the MHCC Operations Section Sciences Branch.
<u>EMS</u>	SA Duty Officer
	Notify and share information with local and state agencies, including the LEMSA, RDMHC Programs, MHOAC Programs, CDPH and Cal OES. If the MHCC activates, activities related to the specific incident are coordinated through the MHCC.
CDP	PH Medical and Health Coordination Center (MHCC) (if activated)
and func	MHCC activates during emergencies to coordinate the state-level response of CDPH, EMSA the Department of Health Care Services in support of local jurisdictions. The MHCC tions as a central point of coordination between the involved state programs and RDMHC grams, MHOAC Programs, LHD/EHDs, and LEMSAs. The MHCC will:
	Send an alert through the California Health Alert Network (CAHAN) that the MHCC has activated, including MHCC contact information and hours of operation. (Note that the CDPH and EMSA Duty Officer Programs are the official points-of-contact outside MHCC operational hours.)
	Distribute state-level policy decisions, key information and guidance to the RDMHC Programs, MHOAC Programs, LHD/EHDs and LEMSAs, and support requests for state-level program information.

Prepare a statewide Public Health and Medical (CA-ESF 8) Situation Report and distribute it to state and local partners in accordance with policies and procedures.
Monitor medical and health resource requests in Cal EOC, determine if state resources are needed, and fill resource requests as necessary.
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OTHER RESPONSE AGENCIES/ENTITIES

The table below identifies other agencies/entities that have jurisdictional authority and/or responsibility during unusual events or emergencies involving biohazard emergencies in addition to agencies/entities that provide assistance and support.

Name	Role
CDPH Emergency Preparedness Office (EPO)	 Manages and coordinates the MHCC; Receipt, Store and Stage/Mobilization Center (RSS); and Richmond Campus Coordination Center (RCCC); activates as requested and/or as indicated by the magnitude and scope of the incident. Maintains pharmaceutical and medical caches and coordinates access to additional resources such as the Strategic National Stockpile.
CDPH Food and Drug Laboratory Branch (FDLB)	Conducts analysis of food samples for microbiological contaminants and bioterrorism threat agents
CDPH Drinking Water and Radiation Laboratory Branch (DWRLB)	Conducts analysis of water samples for microbial contamination.
CDPH Food and Drug Branch (FDB)	 Oversees protection of food and drug supplies. Works with food, drug, and medical device manufacturers and wholesalers to ensure that potentially contaminated products are removed from commerce. Investigates/responds to reports of foodborne Illness, food tampering, bioterrorism/agroterrorism
CDPH Environmental Management Branch	Provides technical support to LHD/EHDs and other local response agencies on biohazardous waste/medical wastes
CA National Guard Civil Support Teams (CSTs)	 Maintains response capabilities for bioterrorism incidents. Equipment includes mobile analytical laboratories for field analysis of biological agents.
U.S. Environmental Protection Agency (EPA)	Lead federal agency for a hazardous materials release not involving a federal or state owned or licensed facility.

Name	Role
Federal Bureau of Investigation (FBI)	 Lead law enforcement agency for all acts of terrorism. Establishes a joint task force of local, state and federal law enforcement following a terrorist incident.
U.S. Centers for Disease Control and Prevention (CDC)	Provides national-level communicable disease expertise/resources, including access to CDC laboratories, national LRN labs

RESOURCE MANAGEMENT

CDPH maintains specialized resources to support field-level entities, LHDs/EHDs, and response agencies during biohazard or bioterrorism incidents that may include:

- Epidemiologic and surveillance staff
- Subject matter expertise for state-level communications, including hotlines to support healthcare providers and LHDs and to provide public information
- Staff with communicable disease control expertise
- Subject matter expertise for analysis and reporting of data
- Assistance with obtaining and distributing certain vaccines
- Laboratory analytical capability for identification and confirmation of infectious and communicable disease agents and for technical guidance and assistance

During emergency system activations, all resources, including state and federal assets, should be requested in accordance with the Standardized Emergency Management System (SEMS).

ADDITIONAL INFORMATION

California State Warning Center:

Note: Hazardous materials spills or releases must be reported immediately to the California State Warning Center (CSWC). Other notifications may be required to comply with State and federal statutes and regulations.

Telephone: (916) 845-8911 Email: Warning.center@oes.ca.gov

CDPH Division of Communicable Disease Control:

- **During normal business hours**, call the appropriate DCDC Branch or Program or call (916) 552-9700 to be directed to the appropriate Branch or Program.
- After hours, holidays, and weekends, contact the CDPH Duty Officer who will notify the DCDC Duty Officer.

CDPH Duty Officer:

Telephone: (916) 328-3605 Email: CDPHDutyOfficer@cdph.ca.gov

EMSA Duty Officer:

Email: EMSADutyOfficer@emsa.ca.gov

California Poison Control System:

Telephone: (800) 222-1222

ACRONYMS

CA-ESF 8	California Emergency Support Function 8 (Public Health and Medical)
Cal OES	California Governor's Office of Emergency Services
CAHAN	California Health Alert Network
CDPH	California Department of Public Health
CSWC	California State Warning Center
CDC	U.S. Centers for Disease Control and Prevention
CEH	Center for Environmental Health (CDPH)
CID	Center for Infectious Diseases (CDPH)
CUPA	Certified Unified Program Agency
DCDC	Division of Communicable Disease Control (CDPH)
DWRLB	Drinking Water Radiation Laboratory Branch (CDPH)
EHD	Environmental Health Department
EMB	Environmental Management Branch (CDPH)
EMSA	California Emergency Medical Services Authority
EPO	Emergency Preparedness Office (CDPH)
FBI	Federal Bureau of Investigation
HAZMAT	Hazardous Materials
FDB	Food and Drug Branch (CDPH)
FDLB	Food and Drug Laboratory Branch (CDPH)
JDPC	Joint Disaster Policy Council
LEA	Local Enforcement Agency
LEMSA	Local Emergency Medical Services Agency
LHD	Local Health Department
LRN	Laboratory Response Network
LRN-B	Laboratory Response Network - Biological
МНСС	Medical and Health Coordination Center
MHOAC	Medical and Health Operational Area Coordination (Program)
RDMHC	Regional Disaster Medical and Health Coordination (Program)
REOC	Regional Emergency Operations Center
RSS	Receipt, Store and Stage/Mobilization Center
SEMS	Standardized Emergency Management System