# WG2 City Platforms

## Smart public health emergency management and ICT implementations

Presented by:
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# About the deliverable

**Smart City Platforms Thematic Group**
Working Group 2: Smart Public Health Emergency Management

- **The question:** why smart cities did not predict or utilized to respond to the COVID-19 pandemic? How can they prevent mass surveillance?

- **Smart public health emergency management and ICT implementations**
  - Analysis of the terms
  - A gap analysis of existing relevant standards for smart public health,
  - literature analysis about pandemic management frameworks.
  - How cities responded to COVID-19.
  - Define a framework for smart public health management in smart city

# Identified terms

**Resilience:** ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt, transform and recover from the effects of a hazard in a timely and efficient manner, including the preservation and restoration of its essential basic structures and functions through risk management (United Nations Office for Disaster Risk Reduction)

**Public Health:** the science and art of preventing disease, prolonging life and improving quality of life through organized efforts and informed choices of society, organizations, public and private, communities and individuals

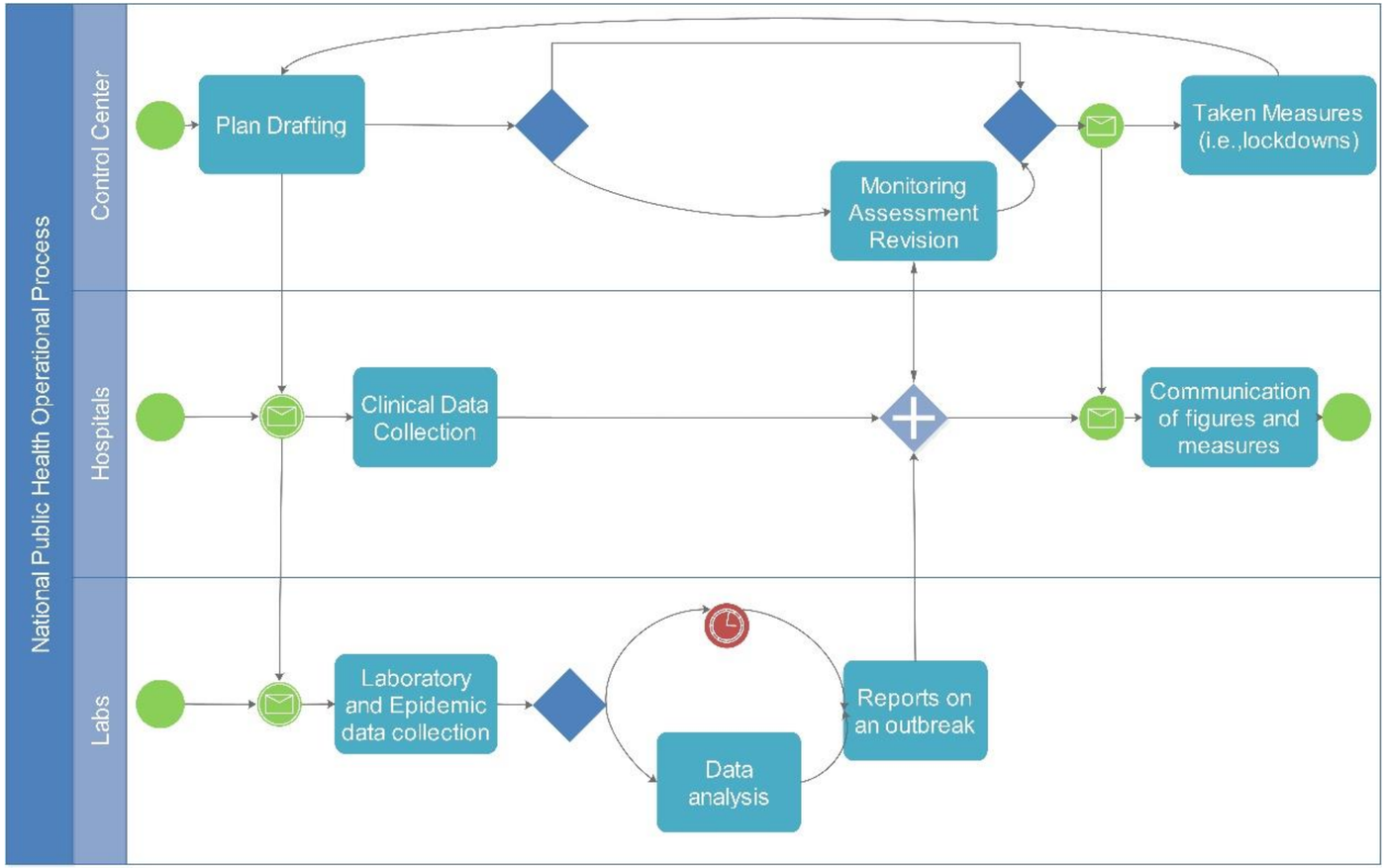
**Epidemic:** occurrence or imminent threat of an illness or health condition caused by bioterrorism, epidemic or pandemic disease, or a novel and highly fatal infectious agent or biological toxin that poses a substantial risk of a significant number of human facilities or incidents or permanent or long-term disability

**Surveillance:** surveillance is the ongoing systematic collection, analysis, interpretation and dissemination of health data for the planning, implementation and evaluation of public health action

**Indicative Surveillance systems:** U.S. Centres for Disease Control and Prevention (CDC); European Surveillance System (TESSy); UK Public Health Surveillance System ; Australian Communicable Diseases Intelligence; the Infectious Disease Surveillance Centre (NESID); and the Chinese Centre for Disease Control and Prevention (China CDC) etc.

# Findings & Experiences from pre-Covid-19 pandemics

**CDC response to H1N1 Influenza (Swine flu)**




*Generic public health operational process*

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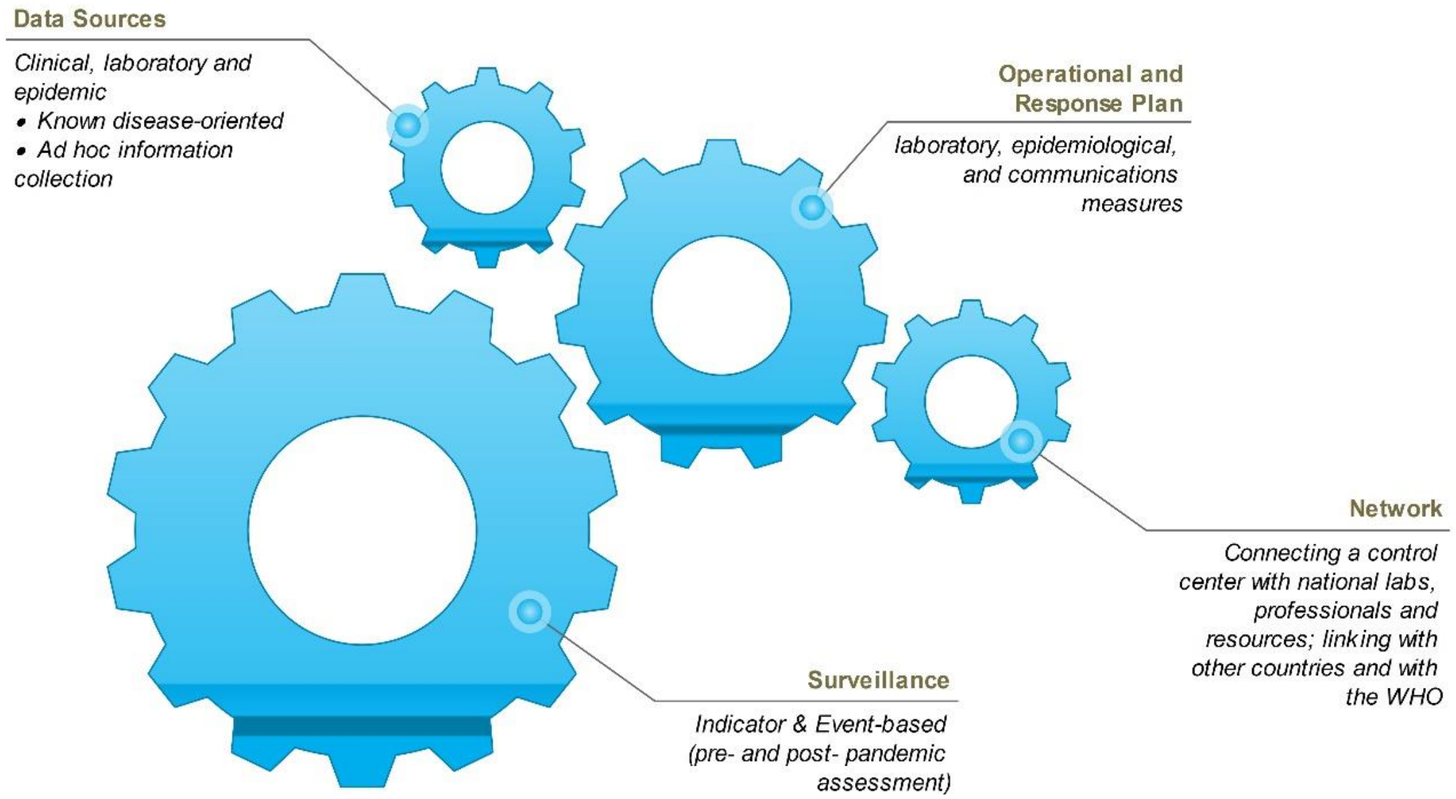
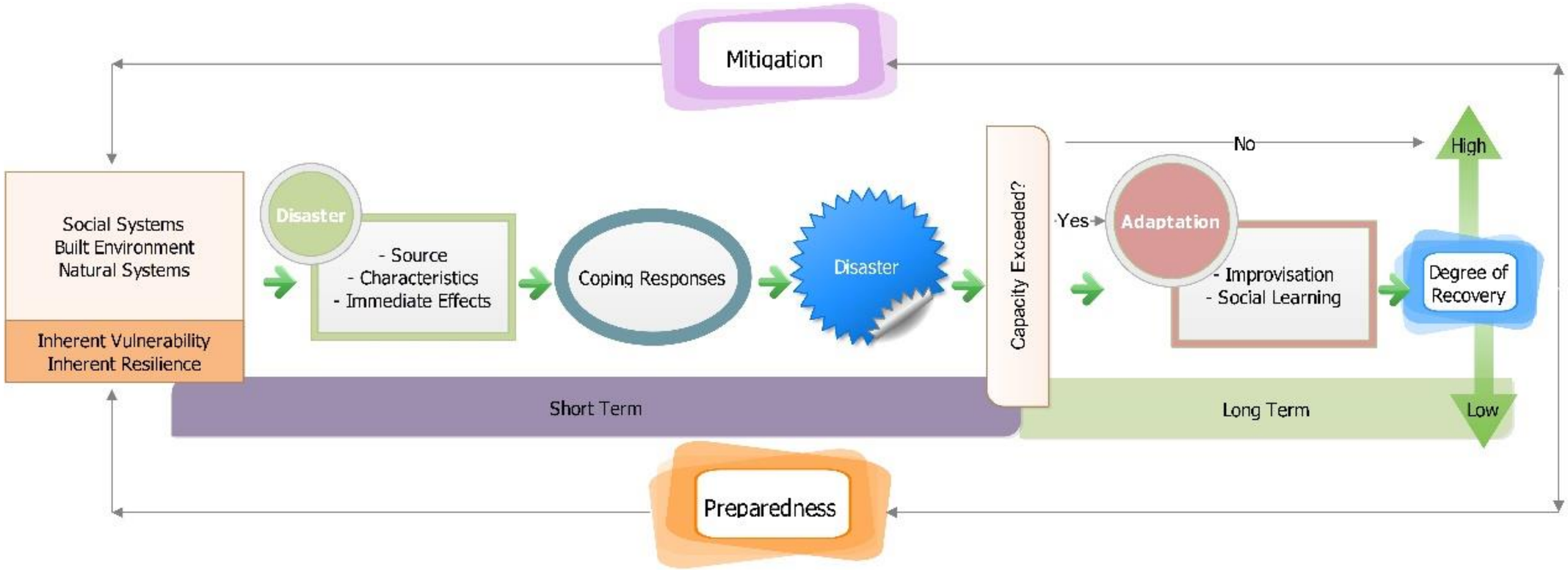



*Generic public health operational process*

# A review of existing public health systems

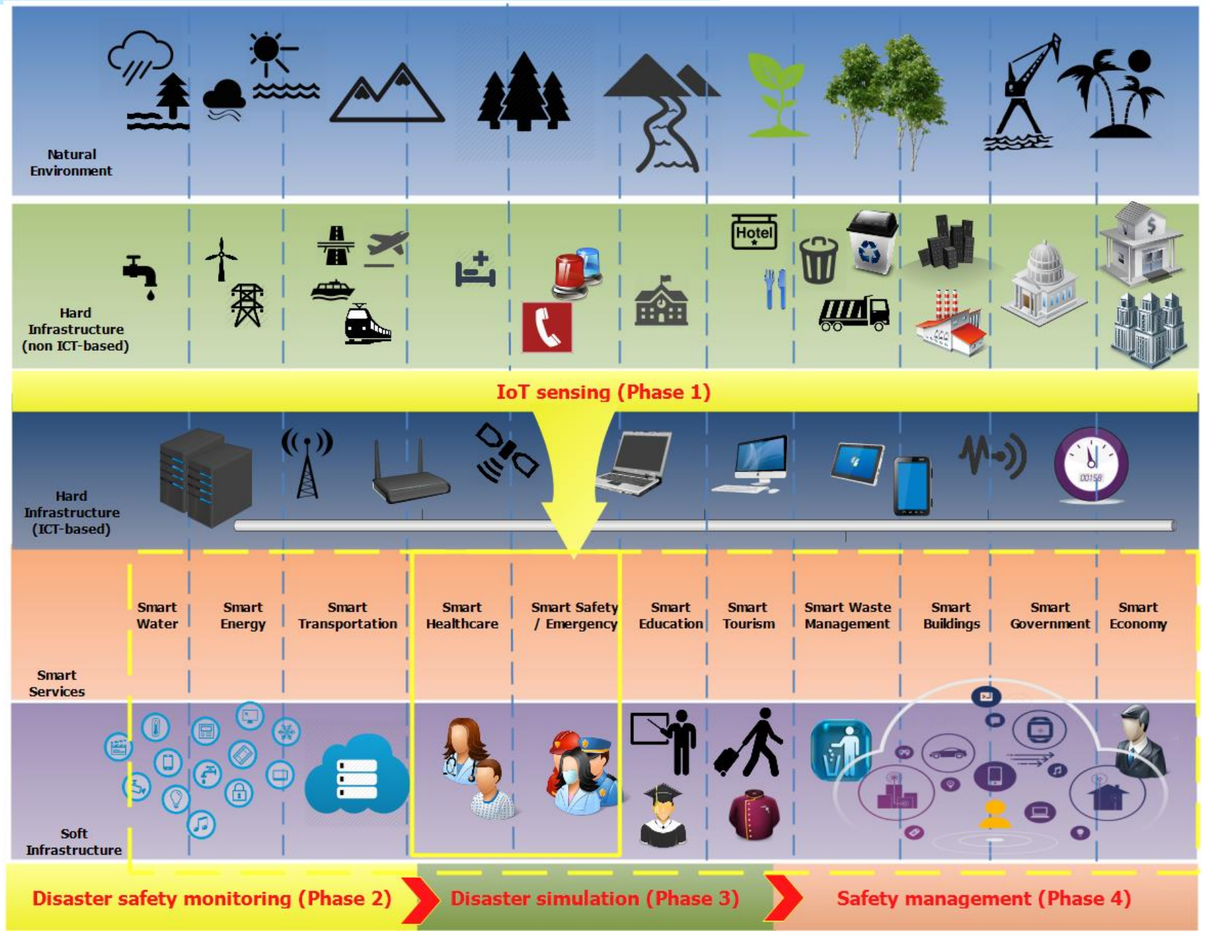
**Disaster resilience of place model**



# Examined cases

1. ‘Flattening the curve’: S. Korea’s 24-hour emergency citizen prevention system
2. TraceTogether from Singapore
3. GH Covid-19 Tracker App from Ghana
4. CovidWatch from Stanford University
5. HaMagen from Israel Ministry of Health
6. Corona DatenSpende - from German Watch co.
7. Covid Symptom Tracker from King’s College, London and others
8. NHS Smart Phone App from NHS, UK
9. Let’s Beat Covid-19 from MedShr , London
10. PeduliLindungi from Indonesia
11. Kwarantana Dommowa from Poland
12. Arogya Setu from Government of India (GOI)

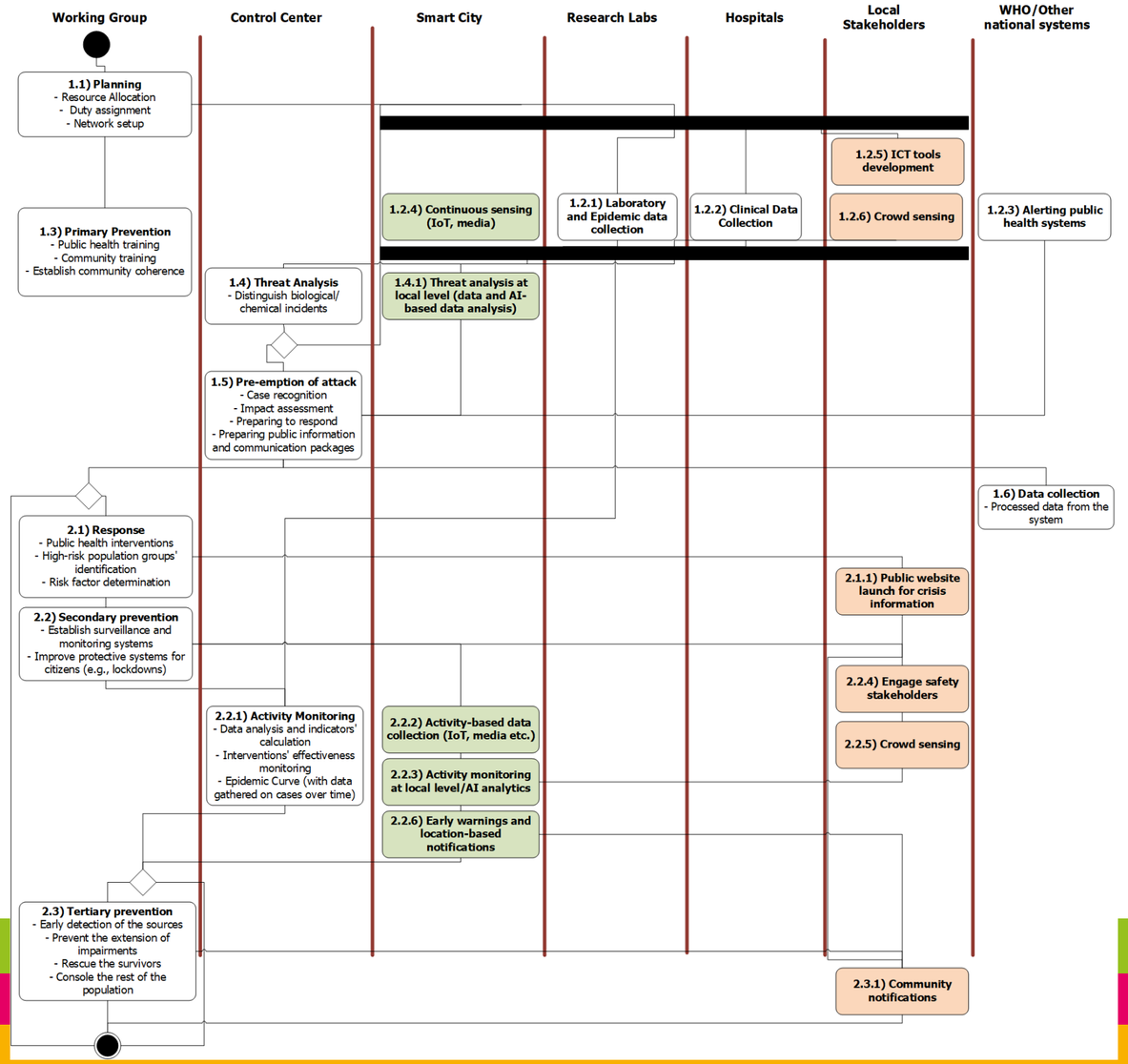
# A Smart Public Health Emergency Framework: the role of SSCs




*IoT-based safety management in SSC*

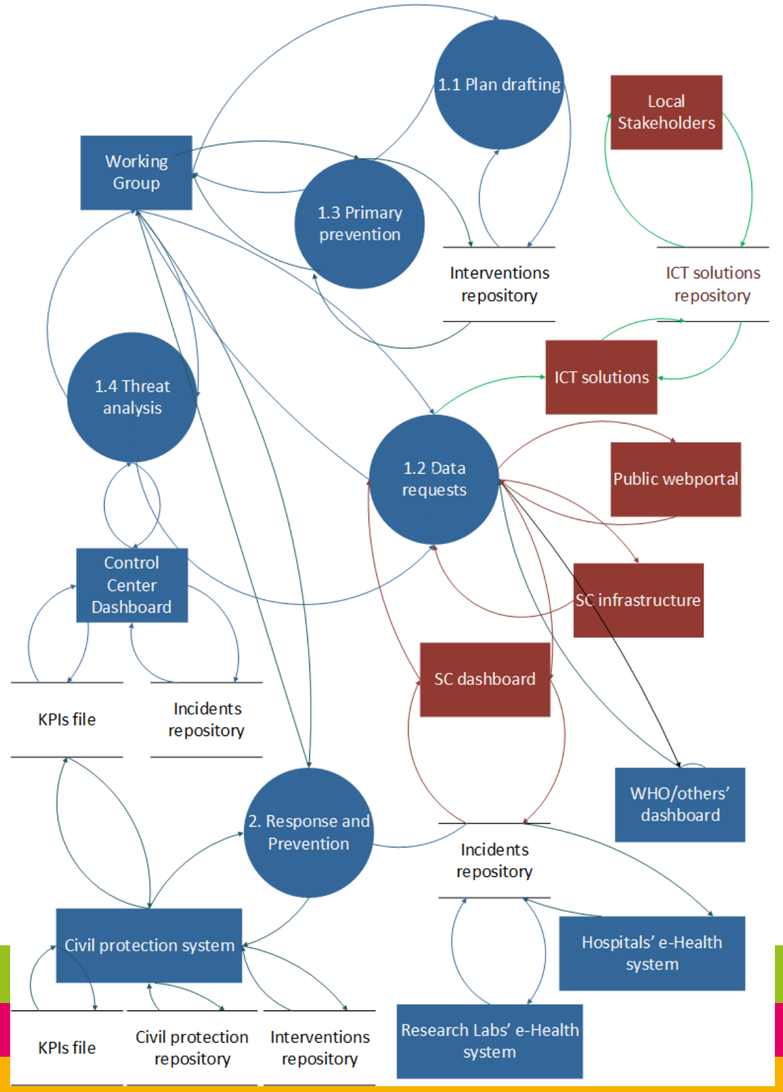
# A Smart Public Health Emergency Framework: the role of SSCs

*proposed UML use-case unified framework for public health management in SSC*



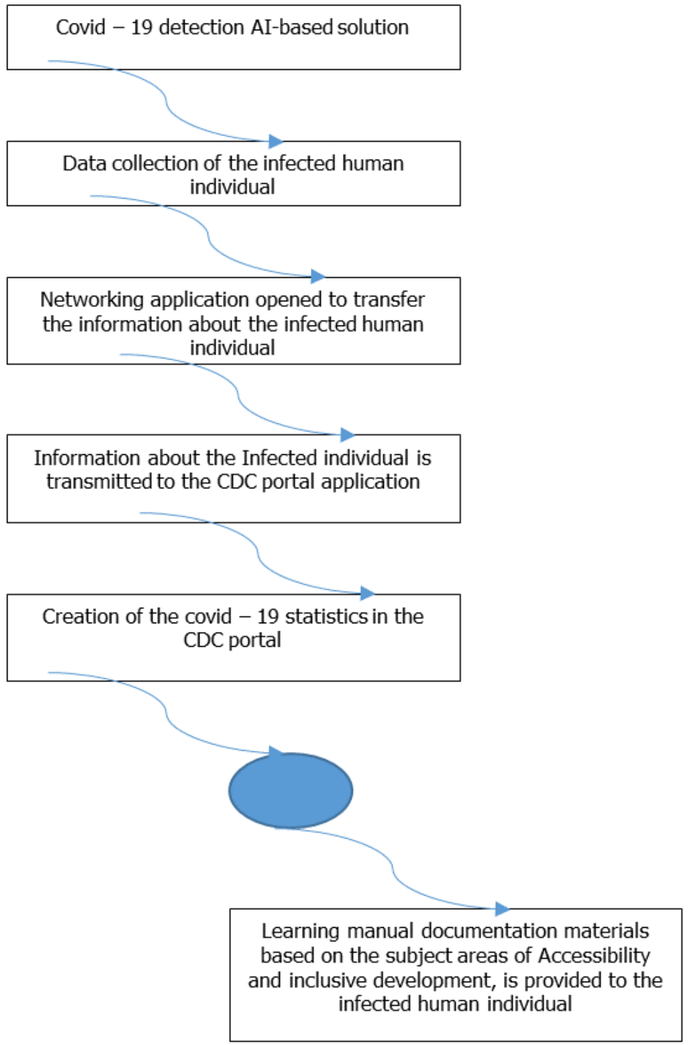
# A Smart Public Health Emergency Framework: the role of SSCs

*UML data flow diagram of the unified framework in SSC*



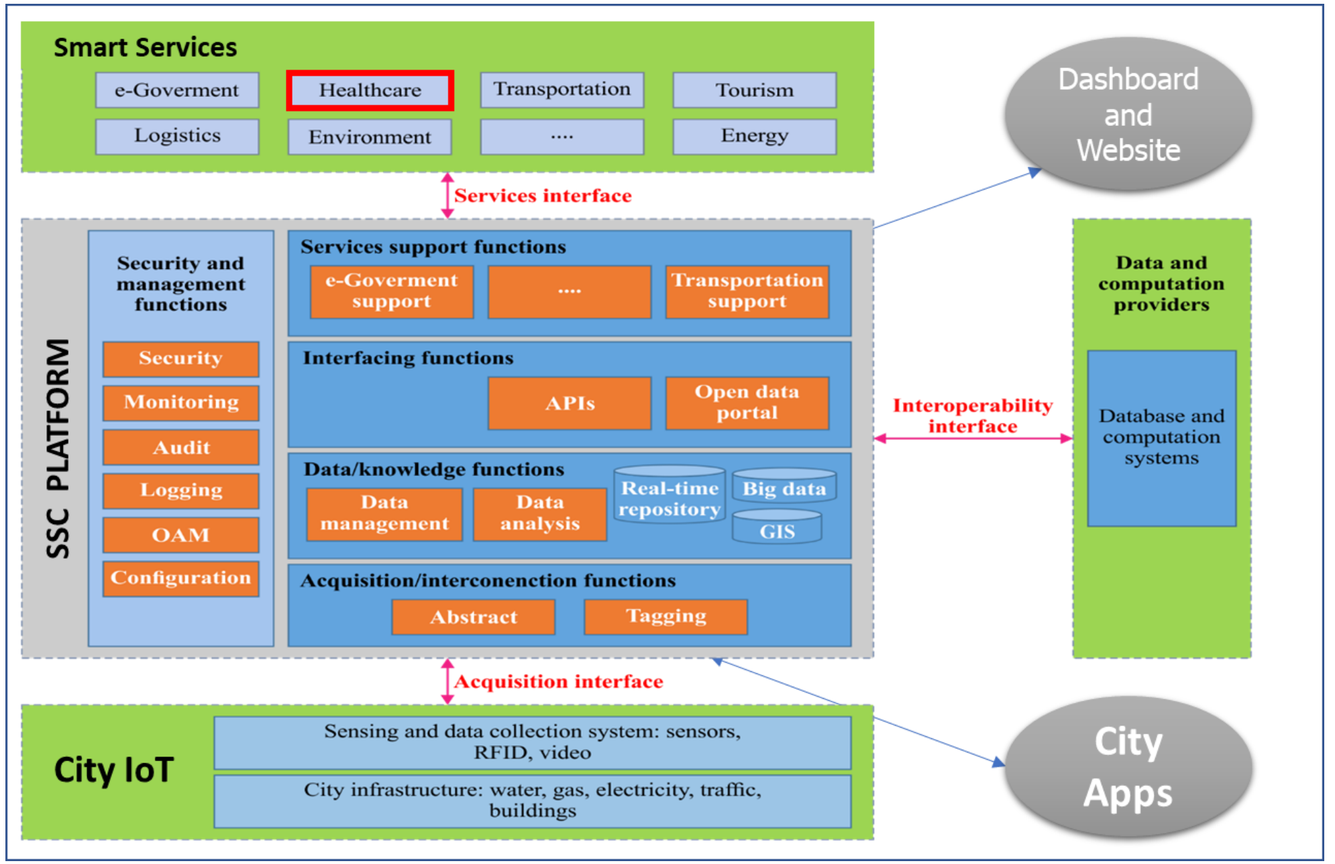
# A Smart Public Health Emergency Framework: the role of SSCs

*The role of an AI-based solution during Covid-19 pandemic*



# Integration with smart city platforms

1. City IoT infrastructure: collects information from the urban space (process step 1.2.4 and process step 2.2.2) and feeds into the public health threat analysis system (process step 1.4 e.g., the SIR functions) and the crisis curves (process step 2.2.1).
2. City Apps: These collect information from the community (process steps 1.2.5, 1.2.6 and 2.2.5).
3. City dashboard and public website: (process steps 2.1.1 and 2.2.3).
4. Smart services: ICT-based services that generate alerts when needed (process steps 2.2.6 and 2.3.1).




*requirements for ICT implementations*

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**https://www.itu.int/go/u4ssc**

# Thank you!