

SYSTEMS REFERENCE DELIVERABLE

**Smart city use case collection and analysis - Managing public health
emergencies in smart cities -
Part 1: High level analysis**



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CONTENTS

FOREWORD	8
INTRODUCTION	10
1 Scope	11
2 Normative references	11
3 Terms, definitions and abbreviated terms	11
3.1 Terms and definitions	11
3.2 Abbreviated terms	12
4 Public health emergency management	13
4.1 General	13
4.2 Scenarios	13
5 Testing and checking	14
5.1 General	14
5.2 Objectives	14
5.3 Widespread testing	14
5.3.1 Current practice	14
5.3.2 Rational for the new practice	15
5.3.3 Example case studies	15
5.3.4 Stakeholder roles and responsibilities	15
5.3.5 Stakeholder relationships	15
5.4 Tracking	16
5.4.1 Current practice	16
5.4.2 Gaps	16
5.4.3 Case studies	16
5.4.4 Stakeholder roles and responsibilities	16
5.4.5 Stakeholder relationships	17
6 Effective treatment	17
6.1 General (need statement)	17
6.2 Objectives	17
6.3 Current practice	17
6.4 Gaps	17
6.5 Case studies	18
6.6 Stakeholder roles and responsibilities	18
6.7 Stakeholder relationship	18
7 Medical supplies and facilities	19
7.1 General	19
7.2 Objectives	19
7.3 Basic workflow	19
7.3.1 Current practice	19
7.3.2 Gaps	20
7.3.3 Case studies	21
7.3.4 Stakeholder roles and responsibilities	21
7.3.5 Stakeholder relationships	22
7.3.6 Implementing during different stages of the emergency and beyond	22
7.4 Temporary medical treatment facilities	23
7.4.1 General	23
7.4.2 Current practice	23

7.4.3	Gaps	23
7.4.4	Example case studies.....	24
7.4.5	Stakeholder roles and responsibilities	24
7.4.6	Stakeholder relationships.....	24
7.4.7	Implementing during different stages of the emergency and beyond	25
8	Supply chains and services.....	27
8.1	General	27
8.2	Objectives.....	27
8.3	Transportation and logistics	27
8.3.1	Current practice.....	27
8.3.2	Gaps	27
8.3.3	Example case studies.....	27
8.3.4	Stakeholder roles and responsibilities	27
8.3.5	Stakeholder relationships.....	28
8.3.6	Implementing during different stages of the emergency and beyond	29
8.4	Food supplies.....	29
8.4.1	Current practice.....	29
8.4.2	Gaps	29
8.4.3	Example case studies.....	29
8.4.4	Stakeholder roles and responsibilities	29
8.4.5	Stakeholder relationships.....	30
8.4.6	Implementing during different stages of the emergency and beyond	31
8.5	Energy and water supplies.....	31
8.5.1	Current practice.....	31
8.5.2	Gaps	31
8.5.3	Example case studies.....	31
8.5.4	Stakeholder roles and responsibilities	31
8.5.5	Stakeholder relationships.....	32
8.5.6	Implementing during different stages of the emergency and beyond	33
8.6	Telecoms (tele-communications)	33
8.6.1	Current practice.....	33
8.6.2	Gaps	33
8.6.3	Example case studies.....	33
8.6.4	Stakeholder roles and responsibilities	33
8.6.5	Stakeholder relationships.....	34
8.6.6	Implementing during different stages of the emergency and beyond	35
8.7	Volunteering.....	35
8.7.1	General.....	35
8.7.2	Current practice.....	35
8.7.3	Gaps	35
8.7.4	Example case studies.....	35
8.7.5	Stakeholder roles and responsibilities	35
8.7.6	Stakeholder relationships.....	36
8.7.7	Implementing during different stages of the emergency and beyond	37
8.8	Communications.....	37
8.8.1	Current practice.....	37
8.8.2	Rational for the new practice.....	37
8.8.3	Example case studies.....	37
8.8.4	Stakeholder roles and responsibilities	37

8.8.5	Stakeholder relationships.....	38
8.8.6	Implementing during different stages of the emergency and beyond	39
9	Digital supplies and technology support	39
9.1	General	39
9.2	Objectives.....	39
9.3	Collecting and analysing data	39
9.3.1	General.....	39
9.3.2	Current practice.....	39
9.3.3	Gaps	40
9.3.4	Example case studies.....	40
9.3.5	Stakeholder roles and responsibilities	40
9.3.6	Stakeholder relationships.....	41
9.3.7	Implementing during different stages of the emergency and beyond	41
9.4	Developing models	41
9.4.1	General.....	41
9.4.2	Current practice.....	41
9.4.3	Gaps	42
9.4.4	Example case studies.....	42
9.4.5	Stakeholder roles and responsibilities	42
9.4.6	Stakeholder relationships.....	43
9.4.7	Implementing during different stages of the emergency and beyond	43
9.5	Acting in response to the data and the models.....	43
9.5.1	General.....	43
9.5.2	Current practice.....	44
9.5.3	Gaps	44
9.5.4	Example case studies.....	44
9.5.5	Stakeholder roles and responsibilities Table 9-2.....	44
9.5.6	Stakeholder relationships.....	45
9.5.7	Implementing during different stages of the emergency and beyond	46
9.6	Continuously optimize the models	46
9.6.1	General.....	46
9.6.2	Current practice.....	46
9.6.3	Gaps	46
9.6.4	Example case studies.....	47
9.6.5	Stakeholder roles and responsibilities	47
9.6.6	Stakeholder relationships.....	47
9.6.7	Implementing during different stages of the emergency and beyond	48
9.7	Data security and privacy protection	48
9.7.1	General.....	48
9.7.2	Current practice.....	48
9.7.3	Gaps	48
9.7.4	Example case studies.....	49
9.7.5	Stakeholder roles and responsibilities	49
9.7.6	Stakeholder relationships.....	50
9.7.7	Implementing during different stages of the emergency and beyond	51
10	Management platform	51
10.1	General	51
10.2	Objectives.....	51
10.3	Digital platform.....	51

10.3.1	General.....	51
10.3.2	Current practice.....	51
10.3.3	Gaps	51
10.3.4	Example case studies.....	52
10.3.5	Stakeholder roles and responsibilities	52
10.3.6	Stakeholder relationships.....	52
10.3.7	Implementing during different stages of the emergency and beyond	52
10.4	Privacy between individual and community.....	53
10.4.1	Current practice.....	53
10.4.2	Gaps	53
10.4.3	Example case studies.....	53
10.4.4	Stakeholder roles and responsibilities	53
10.4.5	Stakeholder relationships.....	54
10.4.6	Implementing during different stages of the emergency and beyond	55
10.5	Cost benefit analysis.....	55
10.5.1	General.....	55
10.5.2	Current practice.....	55
10.5.3	Gaps	55
10.5.4	Example case studies.....	55
10.5.5	Stakeholder roles and responsibilities	56
10.5.6	Stakeholder relationships.....	56
10.5.7	Implementing during different stages of the emergency and beyond	57
10.6	Budgets.....	57
10.6.1	Current practice.....	57
10.6.2	Gaps	57
10.6.3	Example case studies.....	58
10.6.4	Stakeholder roles and responsibilities	58
10.6.5	Stakeholder relationships.....	58
10.6.6	Implementing during different stages of the emergency and beyond	59
11	Finances plans.....	59
11.1	General	59
11.2	Objectives.....	59
11.3	Basic finances for citizens	60
11.3.1	Current practice.....	60
11.3.2	Gaps	60
11.3.3	Example case studies.....	60
11.3.4	Stakeholder roles and responsibilities	60
11.3.5	Stakeholder relationships.....	61
11.3.6	Implementing during different stages of the emergency and beyond	62
11.4	Basic finances for enterprises	62
11.4.1	Current practice.....	62
11.4.2	Gaps	62
11.4.3	Example case studies.....	62
11.4.4	Stakeholder roles and responsibilities	62
11.4.5	Stakeholder relationships.....	63
11.4.6	Implementing during different stages of the emergency and beyond	63
11.5	Banking services	64
11.5.1	Current practice.....	64
11.5.2	Gaps	64

11.5.3	Example case studies.....	64
11.5.4	Stakeholder roles and responsibilities	64
11.5.5	Stakeholder relationships.....	65
11.5.6	Implementing during different stages of the emergency and beyond	65
12	Maintaining normal life	65
12.1	General	65
12.2	Objectives.....	66
12.3	Online life	66
12.3.1	General.....	66
12.3.2	Current practice.....	66
12.3.3	Rational for the new practice.....	66
12.3.4	Example case studies.....	66
12.3.5	Stakeholder roles and responsibilities	66
12.3.6	Stakeholder relationships.....	67
12.3.7	Implementing during different stages of the emergency and beyond	68
12.4	Remote and home working	68
12.4.1	General.....	68
12.4.2	Current practice.....	68
12.4.3	Gaps	68
12.4.4	Example case studies.....	68
12.4.5	Stakeholder roles and responsibilities	68
12.4.6	Stakeholder relationships.....	69
12.4.7	Implementing during different stages of the emergency and beyond	70
12.5	Exercise and entertainment	70
12.5.1	General.....	70
12.5.2	Current practice.....	70
12.5.3	Gaps	70
12.5.4	Example case studies.....	70
12.5.5	Stakeholder roles and responsibilities	70
12.5.6	Stakeholder relationships.....	71
12.5.7	Implementing during different stages of the emergency and beyond	72
13	City collaboration.....	72
13.1	General	72
13.2	Objectives.....	72
13.3	Learning from what is working elsewhere (see Table 13-1).....	72
13.3.1	Current practice.....	72
13.3.2	Gaps	72
13.3.3	Example case studies.....	73
13.3.4	Stakeholder roles and responsibilities	73
13.3.5	Stakeholder relationships.....	74
13.3.6	Implementing during different stages of the emergency and beyond	74
13.4	Sharing between cities (see Table 13-2)	74
13.4.1	Current practice.....	74
13.4.2	Gaps	74
13.4.3	Example case studies.....	75
13.4.4	Stakeholder roles and responsibilities	75
13.4.5	Stakeholder relationships.....	75
13.4.6	Implementing during different stages of the emergency and beyond	76
13.5	Working with local companies and organizations (see Table 13-3).....	76

13.5.1	Current practice.....	76
13.5.2	Gaps	76
13.5.3	Example case studies.....	76
13.5.4	Stakeholder roles and responsibilities	76
13.5.5	Stakeholder relationships.....	77
13.5.6	Implementing during different stages of the emergency and beyond	78
Annex A (informative)	Use case database collection and descriptions	79
Bibliography.....		81
Figure 4-1	– The structure of public health emergency management.....	13
Figure 5-1	– Stakeholder relationship for widespread testing.....	15
Figure 5-2	– Stakeholder relationship for PHE tracking.....	17
Figure 6-1	– stakeholder relationship for effective treatment	18
Figure 7-1	– Information management platform of emergency medical supplies and facilities.....	20
Figure 7-2	– The relationships of all stakeholders of the basic workflow	22
Figure 7-3	– The relationships of all stakeholders of temporary medical facilities	25
Figure 8-1	– Relationship between transportation logistics supply chain and service stakeholders	28
Figure 8-2	– Stakeholder relationships.....	28
Figure 8-3	– Relationship between food supply chain and service stakeholders	30
Figure 8-4	– Stakeholder relationships.....	30
Figure 8-5	– Relationship between energy and water	32
Figure 8-6	– Stakeholder relationships.....	32
Figure 8-7	– Relationship Telecoms	34
Figure 8-8	– Stakeholder relationships.....	34
Figure 8-9	– Relationship Volunteering	36
Figure 8-10	– Stakeholder relationships.....	36
Figure 8-11	– Relationship Communications.....	38
Figure 8-12	– Stakeholder relationships.....	38
Figure 9-1	– Stakeholder relationships for collecting and analysing data	41
Figure 9-2	– Stakeholder relationships for developing models	43
Figure 9-3	– Stakeholder relationships for acting in response to the data and the models	46
Figure 9-4	– Stakeholder relationships for continuously optimize the models.....	48
Figure 9-5	– Stakeholder relationships for data security and privacy protection.....	50
Figure 10-1	– Relationship Digital public health emergency platform.....	52
Figure 10-2	– Stakeholder relationships.....	55
Figure 10-3	– Relationship between cost benefit analysis and modelling	56
Figure 10-4	– Stakeholder relationships.....	57
Figure 10-5	– Relationship Managing overall budgets.....	58
Figure 10-6	– Stakeholder relationships.....	59
Figure 11-1	– The relationships of all stakeholders of basic financial plan for citizens.....	61
Figure 11-2	– The relationships of all stakeholders of finances for enterprises	63
Figure 11-3	– The relationships of all stakeholders of banking services.....	65

Figure 12-1 – Relationship Online life	67
Figure 12-2 – Stakeholder relationships	67
Figure 12-3 – Relationship between remote and home working	69
Figure 12-4 – Stakeholder relationships	69
Figure 12-5 – Relationship between exercise and entertainment	71
Figure 12-6 – Stakeholder relationships	71
Figure 13-1 – The relationships of stakeholders in the scenario of learning from what is working elsewhere	74
Figure 13-2 – The relationships of stakeholders in the scenario of city-to-city sharing	76
Figure 13-3 – The relationships of stakeholders in the scenario of working with local companies and organizations	77
Table 7-1 – Requirements and needs about the workflow for the demand of medical supplies and facilities in different stages	23
Table 7-2 – Requirements and needs of temporary medical facilities in different stages	25
Table 9-1 – Stakeholder roles and responsibilities for developing roles	43
Table 9-2 – Stakeholder roles and responsibilities in acting in response to data and models	45
Table 9-3 – Stakeholder roles and responsibilities in continuously optimizing models	47
Table 9-4 – Stakeholder roles and responsibilities in Data security and privacy protection	50
Table 10-1 – Stakeholder roles and responsibilities in Privacy between individual and community	54
Table 11-1 – Stakeholder roles and responsibilities of basic financial plan for citizens	61
Table 11-2 – Stakeholder roles and responsibilities of basic finances for enterprises	63
Table 11-3 – Stakeholder roles and responsibilities of working with banks	65
Table 13-1 – Stakeholder roles and responsibilities in 13.3 Learning from what is working elsewhere	73
Table 13-2 – Stakeholder roles and responsibilities in 13.4 Sharing between cities	75
Table 13-3 – Stakeholder roles and responsibilities in 13.5 Working with local companies and organizations	77

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**Smart city use case collection and analysis –
Managing public health emergencies in smart cities -
Part 1: High level analysis**

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The text of this Systems Reference Deliverable is based on the following documents:

Draft	Report on voting
SyCSmartCities/378/DTS	SyCSmartCities/389/RVDTS

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Systems Reference Deliverable is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 63347 series, published under the general title *Smart city use case collection and analysis – Managing public health emergencies in smart cities*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

Smart cities are a key trend of urban development in the new information age, and an effective way to ensure that cities are built and managed in a way that best supports the needs of their residents. The major international standardization organizations are vigorously promoting the research and development of standards. However, the Covid 19 pandemic has demonstrated that there are few relevant international standards that provide guidance for the smart city to respond to public health emergencies, as well as a lack of unified understanding and systematic review, and clear direction for the development of such standards, which affects the development and application of international standards for smart city public health emergency (PHE).

In response to the above issues, this document: "Use case collection and analysis – Management of public health emergencies in smart cities" has been developed to collect relevant use cases in important scenarios of smart city management under public health emergencies in order to enable national and international standards development organizations develop a comprehensive portfolio of standards to help cities be well prepared for any future public health emergency.

1 Scope

This part of IEC 63347 describes and analyses a comprehensive set of high-level scenarios of how smart cities can best respond to public health emergencies, and strengthen their "urban immune system", using evidence from as many countries as possible. It covers use cases related to the prevention, the control and the successful ending of public health emergencies, and to dealing with the longer-term harm that these can cause. It considers a wide range of different scenarios and reviews both the management challenges and the range of technology solutions, including the use of IoT, telecommunications, AI, big data, and cloud computing, available in each of them, in order to provide a comprehensive outline of the standardization requirements to develop an effective urban immune system.

The public health emergencies envisaged are those relating to pandemics resulting from novel forms of disease, for which there is no natural immunity within the population and no tried and tested treatment. However, some of its provisions will be helpful to dealing with pandemics of existing diseases such as typhoid and cholera brought on through natural disasters or war.

This document will provide useful information to international and national standards development organizations and thus facilitate and promote the development of the smart city standards required. Annex A gives a use case database collection and descriptions.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1 Terms and definitions

3.1.1

smart city

city where improvements in quality of life, services, sustainability and resilience are facilitated by the effective integration of many and various types of physical, digital and social systems and the transformative use of data and technology

Note 1 to entry: This is a general definition of a smart city. The IEC looks at these aspects from an electrotechnical perspective.

Note 2 to entry: The effective integration of physical, digital and social systems may be facilitated by integration of digital twins of all these systems.

[IEC 60050-831:2025 [1], 831-01-19]

3.1.2

health emergency

sudden events that cause or can cause serious damage to public health

Note 1 to entry: Such public health emergencies include, but are not limited to, major infectious diseases, mass unexplained diseases, major food and occupational poisoning.