

Contact tracing of COVID-19 cases: experience at the district level in South Korea

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Background: Sangnoksu district health center

Population	361,349 (0.7% of total S. Korea pop)
Governance structure	13 towns
Hospitals	21 (8 secondary, 6 long-term care, and 7 oriental hospitals)
Clinics	266 (126 medical, 79 dental, and 58 oriental medicine clinics)
Public health facilities	3 (<u>1 district health centers,</u> 2 sub-health centers)

One of 254 District Health Centers in S. Korea





Main role of district health authority to respond to COVID-19

- Risk communication & health education
- Surveillance
- Coordination of laboratory testing
- **Contact tracing**
- Self-quarantine management
- Local-level resource mobilization and allocation

코로나바이러스감염증-19 대응 지침
[지자체용]

COVID-19 response guideline
for district level

제 8 판
8th edition

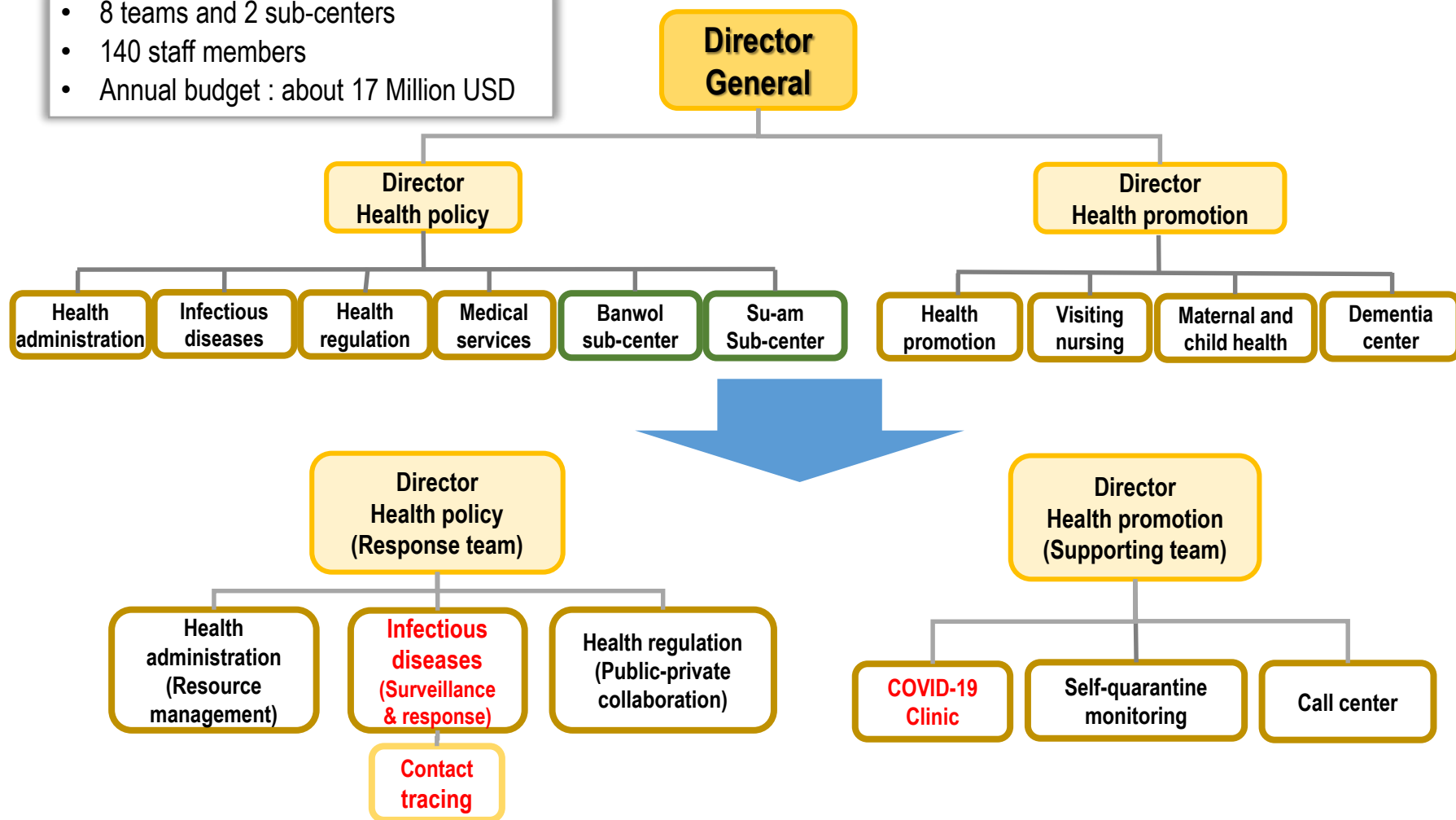
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KCDC, K-MOHW

District health office restructuring

- 8 teams and 2 sub-centers
- 140 staff members
- Annual budget : about 17 Million USD

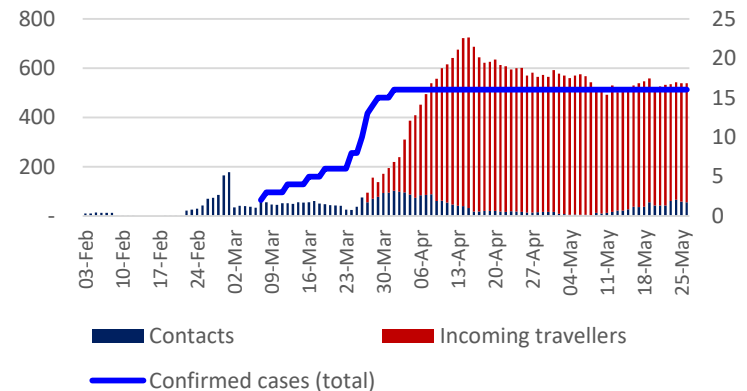




Health workforce relocation and on-the-job trainings at DHO: Strengthening surveillance capacity

- **Role of infectious disease surveillance officers**

- Conduct initial case investigation
- Assist contact tracing
- Initiate self-quarantine (self-isolation)
- Manage surveillance data



- **Before COVID-19: 2 officers**

- One well trained (FETP completed) officer and a semi-trained junior officer

- **Now: 4 officers** (ready to relocate more officers if confirmed cases increasing)

- Two additional semi-trained officers from other teams (health promotion and NCD teams) through on-the-job training



Health workforce relocation and on-the-job trainings at DHO: Contact tracing

- **Role of field supporters (or contact tracers)**
 - Assist field contact tracing work such as investigating CCTV and identifying close contacts
- **Basic training to field supporters**
 - Trainees: Pre-assigned group of officers (about 30 officers), mostly from the Health Promotion Department
 - Training time: One time one-hour training
 - Contents: The way to review CCTVs and the definition of close contact
 - Trainer: District infectious disease surveillance officers
 - Refresh trainings when the national guideline was updated
- **Operation of field supporters**
 - Called up when there is confirmed case
 - If there is no or less confirmed cases, they are supposed to continue their daily work (monitoring self-quarantine, risk communication or health education, etc.)



Health workforce relocation and on-the-job trainings at DHO: Self-quarantine management

• Role of self-quarantine managers

- Provide health education on how to maintain self-quarantine safely
- Deliver basic hygiene kit: thermometer, masks, hand sanitizer, waste bag etc.
- Arrange a facility if house or room is inappropriate for self-quarantine
- Check symptoms two times a day over the phone
 - Use smart phone app with GPS function when necessary

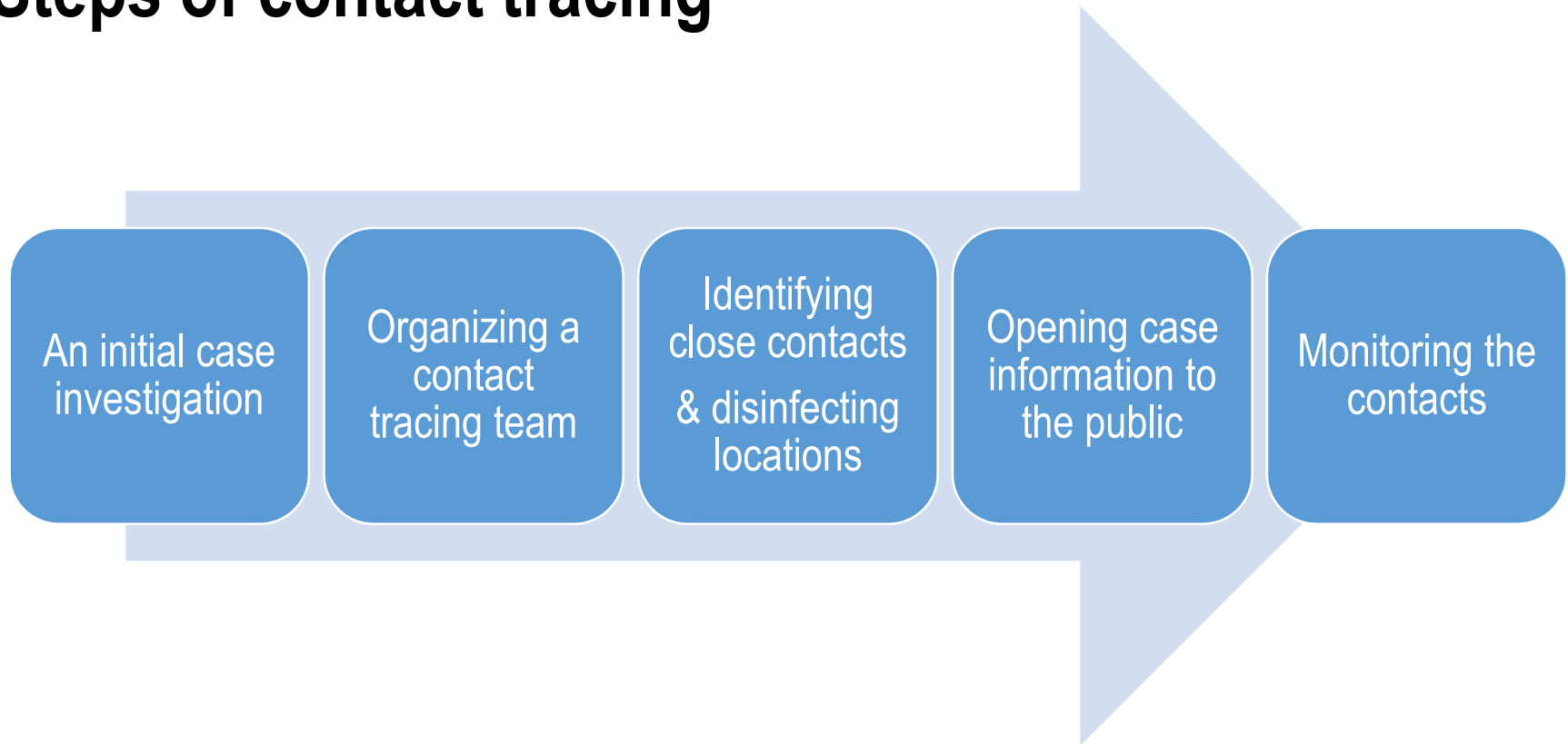
• Basic training to self-quarantine manager

- Trainees: About 50 district health officers (nurses, health technicians and public health officers) from the Health Promotion Department
- Training time: one time one-hour training
- Contents
 - Guideline of self-quarantine
 - The use of self-quarantine smart phone app





Steps of contact tracing



Legal background: Law on infectious diseases prevention and control

- Clause 18: Contact tracing
- Clause 34-2: Opening the information
- Clause 47: Disinfecting locations & self-quarantine



Conducting an initial case investigation

- Conducted by a district infectious diseases surveillance officer
- Report to the province health office and K-CDC through the centralized electronic system
- Information collected includes:
 - Symptoms, date of onset, comorbidities, suspected origin of the infection, history of high-risk facility (e.g., hospital, long-term care facility) utilization, and the initial number of close contacts from co-inhabiting family and high-risk facilities

Ref no.		Laboratory		Quarantine place	<input type="checkbox"/> Self-house <input type="checkbox"/> Designated residence <input type="checkbox"/> Hospital
Confirmed date		Test date		Quarantine starting date	
1. Personal information					
1.1 Name			1.2 ID	-	1.3 Gender
1.4 Nationality			1.5 Residential address		
1.6 Contacts	Patient		1.7 Occupation		
	Family				
1.8 Health worker	<input type="radio"/> Yes (Doctor, Nurse, Others) <input type="radio"/> No				
2. Symptoms and comorbidity					
2.1 Symptoms (14 days before the confirmation)	<input type="radio"/> Yes <input type="radio"/> No		2.2 Starting date		
2.3 Symptoms	<input type="checkbox"/> Fever		<input type="checkbox"/> Respiratory	<input type="checkbox"/> Others	<input type="checkbox"/> Pneumonia
	<input type="radio"/> Yes (. °C) <input type="radio"/> No		<input type="radio"/> Yes (cough, sputum, sore throat, dyspnea) <input type="radio"/> No		<input type="radio"/> Yes (myalgia, chilling) <input type="radio"/> No
2.4 Comorbidity	<input type="radio"/> Yes () <input type="radio"/> No		2.5 Pregnancy	<input type="radio"/> Yes (weeks) <input type="radio"/> No	
2.6 Condition	<input type="checkbox"/> Normal <input type="checkbox"/> Oxygen therapy <input type="checkbox"/> Ventilator <input type="checkbox"/> ECMO <input type="checkbox"/> Death <input type="checkbox"/> under investigation <input type="checkbox"/> other				
3. Suspected infection pathway					
3.1 International travel	<input type="radio"/> Yes (name of country, date of incoming)				<input type="radio"/> No
3.2 Contact of the confirmed	<input type="radio"/> Yes (<input type="checkbox"/> Family <input type="checkbox"/> other than family) Contact date:				<input type="radio"/> No
3.3 Outbreak cluster	<input type="radio"/> Yes (<input type="checkbox"/> Family <input type="checkbox"/> Health facility <input type="checkbox"/> Church <input type="checkbox"/> Long-term care facility <input type="checkbox"/> School <input type="checkbox"/> Other _____)				<input type="radio"/> No
3.4 Others					
4. Health facility and long-term care facility utilization					
<input type="radio"/> Yes (Name, , <input type="checkbox"/> Currently in-patient, <input type="checkbox"/> Currently out of facility (date of discharge:)					<input type="radio"/> No
5. Number of initial contacts					
5.1 Contacts from family	<input type="radio"/> Yes (Number of contacts:)				<input type="radio"/> No
5.2 Contacts from risk facility (Church, LTC facility, school, etc.)	<input type="radio"/> Yes (Name, number of contacts:)				<input type="radio"/> No
5.3 Contacts from health facility	<input type="radio"/> Yes (Name, numbers of contacts:)				<input type="radio"/> No

Organizing a contact tracing team

- **A “tracing diary”: more detailed self-record to identify the locations and times**
 - Staring two days prior to the onset of symptoms
 - Information about where s/he went, what time, and potential contacts
- **The contact tracing team**
 - A team leader: a rapidly established Epidemic Intelligence Service (EIS) officer from the provincial level
 - Field supporters (or contact tracers) from the district health office
 - Serious cases (e.g., if it involves a health facility or a long-term care facility with a high number of expected vulnerable contacts): Central CDC organizes a team and leads the investigation



Identifying close contacts

- **Go to the traced locations and review CCTVs at the locations to identify and confirm close contacts**
 - Review the distance and the duration of contact between the confirmed case and the contact, the use of personal protective equipment (PPE) such as face masks as well as the ventilation condition of the space
 - The national guideline provides the definition of what entails a “close contact”
- **The time when the patient visited the location is normally informed by the credit card utilization record**
 - If there is no credit card utilization record, the work relies on the patient’s memory and the CCTVs on the streets
 - If there is no CCTV at the location, rigorous contact tracing becomes challenging
 - When necessary and after the patient’s permission, the team works to review CCTVs nearby the patient’s residence and her/his mobile’s GPS record to find other routes which the patient might have forgotten to recall
- **Generally, the individual patient’s self-recorded diary covers most of the important locations and persons for contract tracing**





Disinfecting locations

- **A disinfecting team is dispatched before or during the contact tracing team visits**
 - If disinfecting is completed before the contact tracing team visits, the contact tracing team only wears face masks and sometimes gloves
 - If the EIS officer determines that the location is contaminated, the contact tracing team wears full PPE including Level-D protection suit, face masks, goggles and gloves
- **Shut down the location after disinfection decided by the provincial EIS officer**
 - Based on the severity of the symptoms of the confirmed case, duration of stay, range of movement within the location and the characteristics of the space (i.e., a health facility, etc.)



Opening case information to the public

- After investigation of each location is completed, when there is need to help identify otherwise unidentified close contacts, the information on the contact location and time is disclosed to the public through a city's official website and social media platforms
- The individual information is anonymized



Monitoring the contacts

- 1) Sending self-quarantine notice by the district health authority
- 2) Providing health education
- 3) Delivering basic hygiene kit : thermometer, face masks, hand sanitizer, waste bag, etc.
- 4) Arranging a facility if house is inappropriate for self-quarantine
- 5) Checking symptoms two times a day by phone call
 - Use smart phone app with GPS function when necessary



Self-quarantine guidelines

- ✓ **Do not leave the quarantine area to prevent the spread of disease.**
If you and those subject to self-isolation comply with quarantine measures to prevent the spread of infection, you can leave the quarantine area and return to work or school.
- ✓ **Stay alone in an isolated area.**
 - Keep the door closed and open the window frequently to ventilate. • Eat by yourself.
 - If possible, use a separate bathroom and sink.
(Shared bathroom and sink should be disinfected with a home disinfectant such as chlorine bleach after use.)
- ✓ **If you need to leave the area for an inevitable reason such as treatment, you must contact the local health center (Officer in charge) first.**
- ✓ **Avoid contact with family members or cohabiters. (speaking, etc.)**
 - If inevitable, do not face each other, wear masks, and keep at least 2m distance.
- ✓ **Use personal items separately. (personal towel, tableware, mobile phone, etc.)**
 - Wash clothes and bedding of suspected infectees separately from others.
 - Separate tableware, so others don't use it before it is cleaned.
- ✓ **Comply with the health guidelines.**
 - Comply with personal hygiene recommendations (washing hands, sneezing, etc.) • Wear a mask when coughing.
 - If you don't have a mask, cover your mouth and nose with your sleeve, and wash or sanitize hands after coughing or sneezing.

During the active monitoring period, your local public health center will contact you for symptoms, etc. Please maintain self-monitoring for 14 days from the date of contact with a diagnosed infectee.

Self-monitoring method

- ✓ Monitor your health conditions for any symptoms of infection such as respiratory symptoms
- ✓ Take the temperature every morning and evening
- ✓ Inform the public health center of your symptoms when they contact you once or more a day



Discussions

- **Cases overwhelmed and resource-limited situation**
 - Priorities: high-risk locations (e.g., health facility, a long-term care facility and highly populated locations) and high-risk population (e.g., elderly, comorbidities)
 - Minimum but essential way of contact tracing (e.g., diary kind self-tracing record) would be still important
- **Flexibility of human resource management at provincial and district levels**
- **Privacy and human rights issues**

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