Digital Gov’t System for COVID-19 TREATMENT

COVID-19 Patient Management Information System

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This course will focus on the Patient Management Information system (PMI), which is developed to systematically manage COVID-19 patients to check their real-time status. The lecture will cover background and objective of PMI system, the system process as well as what to be needed for the system establishment and how to use the system.
Course Structure

1. Overview of Patient Management Information System
2. Patient Management Information System Description
3. Functions of Patient Management Information System
4. Expected Outcome
Course Objectives

To help you understand how Korea manages COVID-19 patient information in real time

To learn Registration of COVID-19 patients and allocation to local management units

To give insight into effective and efficient patient management system
Error found during the process of collecting patient information from each medical institution due to the surge of COVID-19 confirmed cases.

To assist prompt allocation of quarantine facilities to COVID-19 patients by severity, manage their information, and use the system for the national infectious disease prevention and control policy in order to prevent further spread of COVID-19 and provide the precise information to the public.
02 Patient Management Information System Description

Legal ground: Article 76-2 (request for provision of information, etc.) of 「Infectious Disease Control and Prevention Act」

System flow

KCDC
1. Patient registration
   - Patient ID
   - Registration date
   - Confirmed date
   - Residential ID
   - Name
   - Competent city/province/district
2. Status management

Patient management unit in cities and provinces
1. Severity classification
   - None
   - Mild
   - Moderate
   - Severe
   - Very severe
2. Agency allocation
   - Medical institution
   - Temporary treatment center
   - Public health center

Medical institution
- Hospitalization
- Hospital transfer
- Release from quarantine, Deceased

Temporary treatment center
- Admission
- Release

Public health center
- Self-quarantine
- Release
02 Patient Management Information System Description

| Hardware and Software Configuration |

- Medical Institutions
- Temporary Treatment Centers
- Public Health Centers
- City/Provincial Patient Management Teams
- Patient Management Information Portal
- KCDC
- Patient Management Information System
  - Patient Allocation Information
  - Patient Status Information
  - Patient Management Information Web Service
  - Patient Management Information Database

Health Insurance Review and Assessment Service

Other Systems
- Medical Institutions Status Management
- Portal Service for Citizens
- Portal Service for Nursing Care Institutions
03 Functions of Patient Management Information System

<table>
<thead>
<tr>
<th>Registration of confirmed cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage the basic information of COVID-19 patients</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient allocation to local governments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocate the patients to the competent local governments and patient management teams in cities/provinces</td>
</tr>
</tbody>
</table>

Note: All the input data is sample, so it is not prohibited to use this data.
03 Functions of Patient Management Information System

Patient allocation
Check the diagnosis state and allocation to quarantine facilities

Registration of reconfirmed cases
Register reconfirmed cases among those released from self-quarantine

City/Provincial Patient Management Teams
© Patient Allocation by Local Government

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03 Functions of Patient Management Information System

| Register the patient status information |
| Manage the severity, hospitalization, and release of patients |

| Register hospital transfer of patients |
| Manage the transfer of patients to other medical institutions |

Patient management by medical institution
© Hospitalized COVID-19 patient management

- General medical care
- Oxygen therapy (nasogastric tube insertion)
- Oxygen therapy (oxygen mask)
- AIRVO 2 (High Flow)
- Mechanical ventilator (artificial respiration), CRRT, ECMO
- T-cannula

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03 Functions of Patient Management Information System

| Patient log and statistics management |
| Trace the history of patients including their status by transferred facility, etc. |

City/Provincial Patient Management Teams

Note: All the input data is sample, so it is not prohibited to use this data.
03 Functions of Patient Management Information System

Patient log and statistics management
Data entry status and statistics of patient quarantine data by city/province

<table>
<thead>
<tr>
<th>City/ province</th>
<th>Total no. of confirmed cases</th>
<th>Registration in progress</th>
<th>Registration completed (allocated to city/province)</th>
<th>Total</th>
<th>Data entry by quarantine facilities completed</th>
<th>Healthcare Institutions</th>
<th>Temporary treatment center</th>
<th>Health center (self-quarantine)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>대전</td>
<td>47</td>
<td>0</td>
<td>2</td>
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<td>44</td>
<td>97.8%</td>
<td>42</td>
<td>41</td>
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<td>대구</td>
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<td>53</td>
<td>50</td>
<td>92.2%</td>
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<td>59</td>
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<td>100%</td>
</tr>
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<td>16</td>
<td>15</td>
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<td>1,269</td>
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<td>0</td>
<td>0</td>
<td>117</td>
<td>116</td>
<td>99.1%</td>
<td>117</td>
<td>115</td>
<td>99.1%</td>
</tr>
</tbody>
</table>

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**04 Expected Outcome**

- **Provide information** on COVID-19 to the public in real time

- **Allow prompt quarantine** of confirmed cases based on the availability of negative pressure room in each medical institution

- Utilize as a **base material for policy-making** responding to infectious disease

- Link with **healthcare big data** to conduct a statistical analysis on COVID-19 confirmed cases

- **Monitor and manage the risk of patients** and provide other services to support **clinical treatment and diagnosis**