7. COVID-19 Prevention and Control Graph

7.1Introduction and application scenarios

According to the guidelines or manuals for prevention and control on the Internet, a knowledge graph for COVID19 prevention and control is built, which contains a taxonomy of concepts, description of precautions and actions/places advised to avoid etc. It refers to the Medical Supplies graph when the prevention and control methods involves using/avoid using some particular items.

Potential applications include providing basic knowledge on prevention and control, integrating into the process information processing platform, and checking whether the prevention and control measures are correctly implemented in various places. In the following we give some examples

**Example 1:**

[input]: XX Plaza (Y1 store) has open for public in controlled manner. The staff have no suspicious symptoms, and no customer or other personnel with suspicious symptoms are identified. The surfaces of items contactable to the public have been disinfected regularly. The air conditioning system operates in good condition, its filter has been cleaned regularly. The windows are opened for ventilation. The supply of hand sanitizer in the toilet is sufficient. The water supply facilities work normally. The sanitary facilities are sterilized in a timely manner, and air disinfection and spray disinfection are used when necessary.

[output]:

XX Plaza (Y1 store) is a public place with a high crowd density.

Protection:

Properly protected

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**Example 2:**

[input]: in XX square (Y2 store) has opened for public in controlled manner, a working staff has fever, the windows have been opened for ventilation, the hand sanitizer in the washroom is equipped, the water supply facilities are working normally, the sanitary facilities are disinfected in time.

[output]

XX square (Y2 store) is a public place with a crowd density

Protection:

Improperly protected

Error:

Make sure the staff with suspicious symptoms stay away from work

Missing points:

The surfaces of items contactable to the public should be disinfected regularly.

The air conditioning system should work properly

The filter of air conditioner should be cleaned regularly

Clean up rubbish in time

Air disinfection spray disinfection is necessary when necessary.

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**Example three:**

[input] XX (Y3 store), has staff with fever

[output]

XX (Y3 store) is a public place with dense flow of people

:

Improperly protected

Error

Make sure the staff with suspicious symptoms stay off work

Missing points:

The surfaces of items contactable to the public should be disinfected regularly.

Normal operation of air conditioning system or ventilation fan

Regular cleaning of the filter in air conditioner

Improve ventilation by opening windows

Clean up rubbish in time

Sufficient hand sanitizer in toilet

Faucet and other water supply facilities should work normally

The sanitary facilities should be disinfected

Timely disinfection of sanitary facilities

Air or spray disinfection is used when necessary.

7.2 Data schema



7.3 Data source and scale

Novel coronavirus pneumonia protection manual from Wuhan Xiehe Hospital, http://pumcp.com/portal/sites/xiehe/pages/books/7/index.html

“Tips from Professor Zhang Wenhong regarding novel coronavirus prevention and control”(digital version), Shanghai science and Technology Press

Health protection guidance manual for different people, places and vehicles, prepared by the prevention and control group of the guidance group of the central government in Hubei Province, http://wjw.hubei.gov.cn/bmdt/ztzl/fkxxgzbdgrfyyq/jkkp/202002/t220200215\_.shtml

Data size:

Concept: 86

Instance: 265

Data attributes: 5

  Object properties: 14

7.4 Map specification

Namespace: http://www.openkg.cn/2019-ncov/prevention/

Property definition: http://www.openkg.cn/2019-ncov/prevention/ {concept identifier} / property {property name}

Concept definition: http://www.openkg.cn/2019-ncov/prevention/class / {concept identifier}

Entity definition: http://www.openkg.cn/2019-ncov/prevention/resource / {concept identifier}

The entity and concept identifiers are Base64 encoded, and the attribute names are URL Style encoded

7.5  Author introduction

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7.6 Visual example

