

# Webinar

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# Occupational Health and Safety of Health Workers in COVID19

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## EPI-WIN: WHO information network for epidemics

EPI-WIN seeks to give everyone access to timely, accurate, and easy-to-understand advice and information from trusted sources on public health events and outbreaks: currently the COVID-19 public health emergency.

### Audiences



#### Individuals and communities

Information on COVID-19; How people can protect themselves and others; Updates on the evolving situation.



#### Travel & Tourism Sector

Guidance and resources for the travel and tourism sectors (*Balancing national travel restrictions and safety of passengers and staff*).



#### Health Sector

Guidance and resources for health facilities and healthcare workers (*Infection prevention and control, clinical care and healthcare workers rights*).



#### Employers & Workers

Guidance and resources for businesses and employees (*Health and safety for travelling employees*).



#### Faith-based organizations and faith leaders



#### Large event organizers



#### Countries



## Health Sector

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The health sector, including healthcare workers and professionals are the backbone of a country's defenses to save lives and limit the spread of disease. They play a central and critical role in global response efforts to the COVID-19 pandemic. Health workers face higher risks of potential COVID-19 infection in their efforts to protect the greater community and are exposed to hazards such as psychological distress, fatigue and stigma. WHO is providing essential advice, guidance and training for the health sector in critical areas from infection prevention and control, clinical management to health worker rights and protection and mental health.

## Advice

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### Recommendations for health workers with high risk for infection:

- Stop all health care interaction with patients for a period of 14 days after the last day of exposure to a confirmed COVID-19 patient;
- Be tested for COVID-19 virus infection;
- Quarantine for 14 days in a designated setting.

### Recommendations for health workers with low risk for COVID-19 infection:

- Self-monitor temperature and respiratory symptoms daily for 14 days after the last day of exposure to a COVID-19 patient. HCWs should be advised to call health care facility if he/she develop any symptoms suggestive of COVID-19;
- Reinforce contact and droplet precautions when caring for all patients with acute respiratory illness<sup>2</sup> and standard precautions to take care of all patients; - Reinforce airborne precautions for aerosol generating procedures on all suspect and confirmed COVID-19 patients;
- Reinforce the rational, correct and consistent use of personal protective equipment when exposed to confirmed COVID-19 patients;
- Apply WHO's "My 5 Moments for Hand Hygiene" before touching a patient, before any clean or aseptic procedure, after exposure to body fluid, after touching a patient, and after touching patient's surroundings;
- Practice respiratory etiquette at all times.

As of 8 April 2020, 22 073 cases of COVID-19 among HCWs from 52 countries had been reported to WHO. However, at the present time, there is no systematic reporting of HCW COVID-19 infections to WHO and therefore this number probably under-represents the true number of COVID-19 HCW infections globally.

## Risk assessment and management of exposure of health care workers in the context of COVID-19

Interim guidance  
19 March 2020



Current evidence suggests that the virus that causes COVID-19 is transmitted between people through close contact and droplets. People most at risk of acquiring the disease are those who are in contact with or care for patients with COVID-19. This inevitably places health care workers (HCWs) at high risk of infection. Protecting HCWs is of paramount importance to WHO. Understanding how HCW exposure to COVID 19 virus translates into risk of infection is critical for informing infection prevention and control (IPC) recommendations. This data collection form and risk assessment tool can be used to identify IPC breaches and define policies that will mitigate HCW exposure and nosocomial infection.

This tool is for health care facilities with COVID 19 patients. The form should be completed for all HCWs who have been exposed to a patient with confirmed COVID-19. This tool aids in the risk assessment for HCWs after exposure and provides recommendations for their management.

[https://apps.who.int/iris/bitstream/handle/10665/331496/WHO-2019-nCov-HCW\\_risk\\_assessment-2020.2-eng.pdf](https://apps.who.int/iris/bitstream/handle/10665/331496/WHO-2019-nCov-HCW_risk_assessment-2020.2-eng.pdf)

### Occupational risks for infections in healthcare settings\*:

- Late recognition or suspicion of COVID-19 in patients
- Work in high risk department
- Longer duty hours
- Suboptimal IPC – hand hygiene
- Lack of or improper use of PPE
- Insufficient training
- Long exposure to large number of COVID-19 patients

### \*WHO Situation Report, 11 April 2020

[https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200411-sitrep-82-covid-19.pdf?sfvrsn=74a5d15\\_2](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200411-sitrep-82-covid-19.pdf?sfvrsn=74a5d15_2)

# Coronavirus disease 2019 (COVID-19) Situation Report – 82

Data as received by WHO from national authorities by 10:00 CET, 11 April 2020

## SUBJECT IN FOCUS: Infection in health care workers

Finally, as HCWs caring for patients with COVID-19 are subject to long working hours, fatigue, occupational burn-out, stigma, physical and psychological violence, and back injury from patient handling, it is important that efforts be made to maintain the physical and mental health of HCWs and the quality of care. Therefore, WHO recommends that IPC measures be complemented by occupational safety and health measures, psycho-social support, adequate staffing levels, and clinical rotation, to reduce the risk of burn-out, for safe and healthy working environments and to respect the rights of health workers to decent working conditions.<sup>1</sup>

### Coronavirus disease (COVID-19) outbreak: rights, roles and responsibilities of health workers, including key considerations for occupational safety and health

Interim guidance  
19 March 2020



#### Background

Health workers are at the front line of the COVID-19 outbreak response and as such are exposed to hazards that put them at risk of infection. Hazards include pathogen exposure, long working hours, psychological distress, fatigue, occupational burnout, stigma, and physical and psychological violence. This document highlights the rights and responsibilities of health workers, including the specific measures needed to protect occupational safety and health.

#### Health work rights, roles and responsibilities

Health worker rights include the expectation that employers and managers in health facilities:

- assume overall responsibility to ensure that all necessary preventive and protective measures are taken to minimize occupational safety and health risks,<sup>1</sup>
- provide information, instruction, and training on occupational safety and health, including;
- refresher training on infection prevention and control (IPC),

- maintain appropriate working hours with breaks;
- consult with health workers on occupational safety and health aspects of their work, and notify the labour inspectorate of cases of occupational diseases;
- allow health workers to exercise the right to remove themselves from a work situation that they have reasonable justification to believe presents an imminent and serious danger to their life or health, and protect health workers exercising this right from any undue consequences;
- not require health workers to return to a work situation where there has been a serious danger to life or health until any necessary remedial action has been taken;
- honour the right to compensation, rehabilitation, and curative services for health workers infected with COVID-19 following exposure in the workplace – considered as an occupational disease arising from occupational exposure;
- provide access to mental health and counselling resources; and
- enable cooperation between management and health workers and their representatives.

Health workers should:

### Rational use of personal protective equipment for coronavirus disease (COVID-19) and considerations during severe shortages

Interim guidance  
6 April 2020



#### Background

This document summarizes WHO's recommendations for the rational use of personal protective equipment (PPE) in health care and home care settings, as well as during the handling of cargo; it also assesses the current disruption of the global supply chain and considerations for decision making during severe shortages of PPE.

This document does not include recommendations for members of the general community. See here: for more information about [WHO advice of use of masks in the general community](#).

In this context, PPE includes gloves, medical/surgical face masks - hereafter referred to as "medical masks", goggles, face shield, and gowns, as well as items for specific procedures: filtering facepiece respirators (i.e. N95 or FFP2 or FFP3 standard or equivalent) - hereafter referred to as "respirators" - and aprons. This document is intended for those involved in distributing and managing PPE, as well as public health authorities and individuals in health care and home care settings involved in decisions about PPE use and prioritization; it provides information about when PPE use is most appropriate, including in the context of cargo handling. This document has been updated to address key

- avoiding touching your eyes, nose, and mouth;
- practicing respiratory hygiene by coughing or sneezing into a bent elbow or tissue and then immediately disposing of the tissue;
- wearing a medical mask if you have respiratory symptoms and performing hand hygiene after disposing of the mask;
- routine cleaning and disinfection of environmental and other frequently touched surfaces.

In health care settings, the main infection prevention and control (IPC) strategies to prevent or limit COVID-19 transmission include the following:<sup>2</sup>

1. ensuring triage, early recognition, and source control (isolating suspected and confirmed COVID-19 patients);
2. applying standard precautions<sup>3</sup> for all patients and including diligent hand hygiene;
3. implementing empiric additional precautions (droplet and contact and, wherever applicable for aerosol-generating procedures and support treatments, airborne precautions) for suspected and confirmed cases of COVID-19;
4. implementing administrative controls;
5. using environmental and engineering controls.<sup>4</sup>



## Mental health and psychosocial considerations during the COVID-19 outbreak

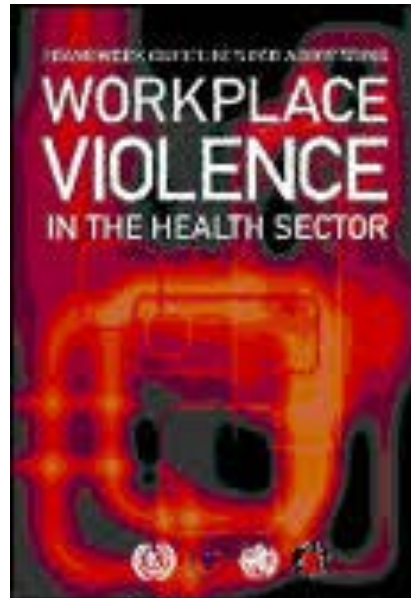
18 March 2020

In January 2020 the World Health Organization (WHO) declared the outbreak of a new coronavirus disease, COVID-19, to be a Public Health Emergency of International Concern. WHO stated that there is a high risk of COVID-19 spreading to other countries around the world. In March 2020, WHO made the assessment that COVID-19 can be characterized as a pandemic.

### Messages for healthcare workers

7. Feeling under pressure is a likely experience for you and many of your colleagues. It is quite normal to be feeling this way in the current situation. Stress and the feelings associated with it are by no means a reflection that you cannot do your job or that you are weak. Managing your mental health and psychosocial well-being during this time is as important as managing your physical health.

8. Take care of yourself at this time. Try and use helpful coping strategies such as ensuring sufficient



[https://www.who.int/violence\\_injury\\_prevention/violence/activities/workplace/en/](https://www.who.int/violence_injury_prevention/violence/activities/workplace/en/)

RESPECT



## Social Stigma associated with COVID-19



### A guide to preventing and addressing social stigma<sup>1</sup>

**Target audience:** Government, media and local organisations working on the new coronavirus disease (COVID-19).

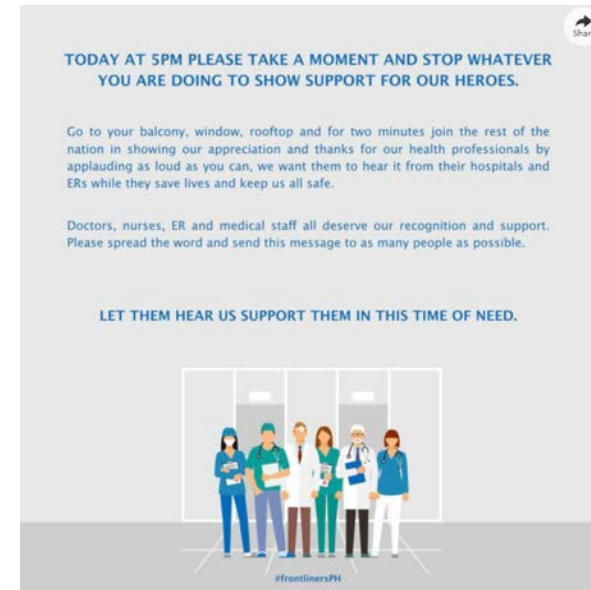
#### WHAT IS SOCIAL STIGMA?

Social stigma in the context of health is the negative association between a person or group of people who share certain characteristics and a specific disease. In an outbreak, this may mean people are labelled, stereotyped, discriminated against, treated separately, and/or experience loss of status because of a perceived link with a disease.

Such treatment can negatively affect those with the disease, as well as their caregivers, family, friends and communities. People who don't have the disease but



<https://www.who.int/docs/default-source/coronaviruse/covid19-stigma-guide.pdf>





[https://www.ilo.org/sector/Resources/training-materials/WCMS\\_250540/lang--en/index.htm](https://www.ilo.org/sector/Resources/training-materials/WCMS_250540/lang--en/index.htm)



<https://www.who.int/publications-detail/occupational-safety-and-health-in-public-health-emergencies-a-manual-for-protecting-health-workers-and-responders>





**WHO cares for  
those who care.**

**Keep safe,  
keep serving!**

Dr Tedros Adhanom  
Ghebreyesus  
WHO Director-General

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# Webinar on the Protection of Health Workers in COVID-19: Lessons Learned from China

16 April 2020 • 13:00 – 14:30 Beijing/Manila



# Holistic approaches of occupational health for HWs during COVID-19 outbreak in China

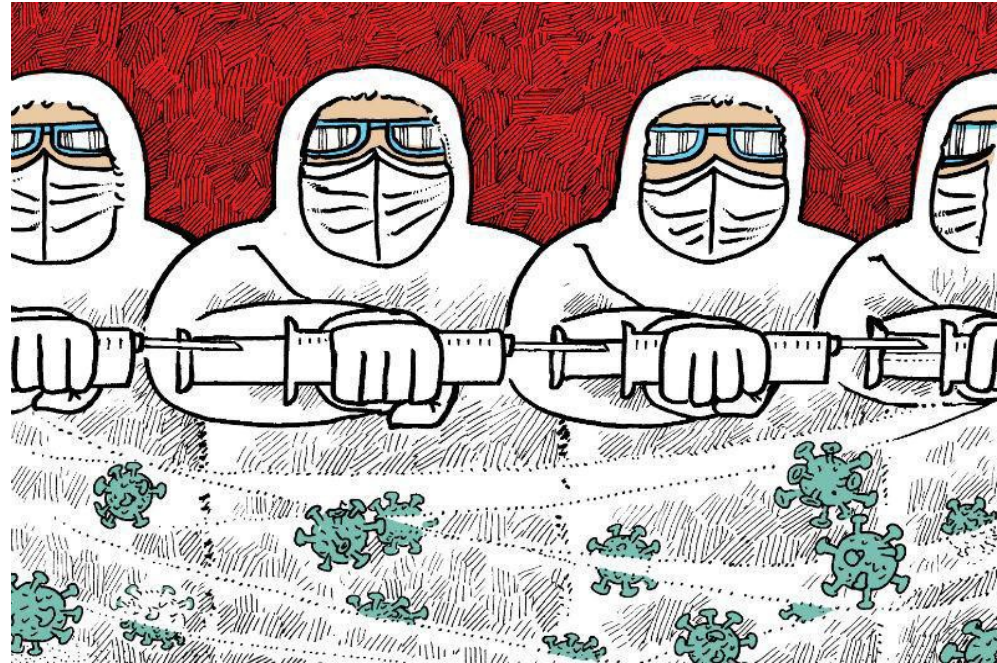


**Prof. Min Zhang /MD PhD**

School of Public Health, Chinese Academy of Medical Sciences (CAMS) and Peking Union Medical College (PUMC)

Vice-Chairman, Occupational Health Standards Committee of the National Health Standards Commission, China

- Based on occupational health practice in China, after confirming human-human transmission of COVID-19 virus, holistic approaches were implemented to protect HWs during COVID-19 outbreak both at work and community.



## The progress of occupational health for HWs in China before COVID-19 outbreak

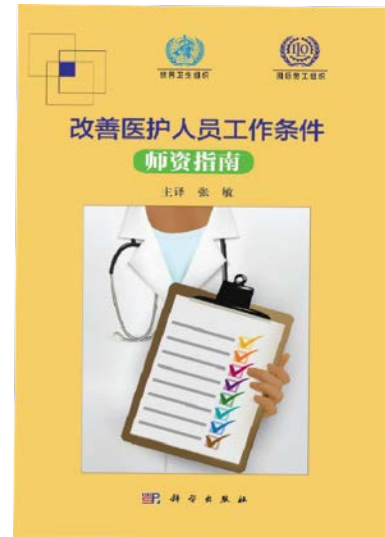
- The first stage (2003-2009): policy analysis and the development of evidence-based national guideline.
- The second stage (2009-2012): implementation of the Guidelines and hospital intervention pilots.
- The third stage (2013-present): a systematic approach toward the upgraded health and well-beings of HWs.



- A systematic approach toward the upgraded health and well- beings of HWs by integrating national and international instruments/ technical tools, with special reference to the joint ILO/WHO product- HealthWISE, ILO/IEA Ergonomic Checkpoints.



Mr. CHEN Zhu  
Vice Chairman, Standing Committee of the National People's Congress, wrote the preface for the Chinese version of HealthWISE.



- **The Model of Hospital Initiative on Systematic Occupational Health (HISOH Model)** was gradually established, HISOH Model has been applied in a wide range of pilot hospitals across the country.
- The core principle of the HISOH Model is the protection and maintenance of the possible highest degree of safety, health and well-being of HWs, through the establishment of a safer and healthy working environment and working conditions by means of comprehensive occupational health management system and culture.
- HealthWISE projects had successfully engaged with all the top seven medical colleges in China and 130 hospitals across provinces, **lead to a multi-sectoral, multi-disciplinary network with both national and international resources.**
- The Occupational Health Protection Committee for Health Care Workers under the Chinese Association on AIDS/STD Prevention and Control was initiated in 2015.



- | The Programme worked closely with the Chinese national and local governmental organizations, trade unions, pilot hospitals and professional organizations, NGOs, as well as international organizations (ILO, WHO).
- | More than 20 national workshops were organized and supported by the Programme.
- | 15 workshops on application of HealthWISE were carried on since 2013, more than 450 leaders who were from major hospitals, local trade unions, universities, national and local CDC, professional associations, health service institutions, attended the workshops.



left to right  
 1.Ms. Xioyan Liu,  
 Leader from All-  
 China Federation  
 of Trade Union  
 2.Ms. Min Zhang

3.Mr. Tim De Meyer, former  
 director, ILO Country Office  
 for China and Mongolia  
 4.Ms. Brigitte Zug-Castullo, ILO  
 HQ expert  
 5.Ms. Rulian Wu, program  
 officer, ILO Country Office



ILO HQ expert  
 Ms. Christiane Wiskow



ILO HQ expert  
 Mr. Shengli Niu





I The Programme worked closely with the Chinese national and local governmental organizations, trade unions, pilot hospitals and professional organizations, NGOs, as well as international organizations (ILO, WHO).



participatory training



welcome ceremony



field visit



leadership forum



group discussion



closing ceremony





# 职业医学与医护人员健康防护的理论和实践

## Occupational medicine and health protection for healthcare workers— Theory and practice

课程负责人: 张敏 博士/研究员

所在院所: 公共卫生学院  
环境与职业健康系

北京协和医学院研究生新开课程-2018

- Carried on studies on violence in health care workplace, published more than 20 articles on occupational health protection for HCWs in China
- organized two special sections on this topic in the journal of Chinese Nursing Management
- communicated information by social media

In Peking Union Medical College, provided courses and teaching materials on occupational health protection for HCWs for graduate students in School of Nursing, and post graduate medical students.





Prof. Min Zhang was one of the interviewees by Bulletin of the WHO on Health workforce burn-out in issue of Sep. 2019,



- Prof. Min Zhang published a book in 2018-The Implementation Note for Guideline for Prevention and Control for Occupational Exposure to Bloodborne Pathogen, as the leading expert to the national standard.
- Chinese translation of the ILO report for 2016 World Day for Safety and Health at Work- Workplace Stress: A Collective Challenge





# 中国人民政治协商会议全国委员会

The National Committee of the Chinese People's Political Consultative Conference

第14卷 第11期 中国安全生产科学技术 Vol. 14 No. 11  
2018年11月 Journal of Safety Science and Technology Nov. 2018

特约稿件

doi: 10.11775/j.issn.1673-101X.2018.11.001

## 完善《中华人民共和国基本医疗卫生与健康促进法(草案)》 涉及职业健康安全相关内容的思考与建议\*

张敏

(中国医学科学院/北京协和医学院 公共卫生学院,北京 100730)

摘要:在我国大力推进健康中国战略的过程中,《中华人民共和国基本医疗卫生与健康促进法(草案)》的立法接受全社会关注,该法在征求意见2017年底向社会公布征求意见稿,围绕职业健康安全相关内容的完善,在职业健康专业理论和中国实践的基础上,梳理主要的修改完善思路,最后提出相关条款的15条具体建议,以期有关部门和从业者进一步修改完善该法草案相关内容。

关键词:基本医疗卫生;健康中国;职业健康安全  
中图分类号:R521 文献标志码:A 文章编号:1673-101X(2018)-11-0001-07

Thinking and suggestions on improving relevant contents of occupational health and safety  
involved in Basic Medical, Healthcare and Health Promotion Law of the People's  
Republic of China (Draft)

ZHANG Min

(School of Public Health, Chinese Academy of Medical Sciences/ Peking Union Medical College, Beijing 100730, China)

Abstract: During the process of vigorously advance and implement the Health China strategy in our country, the legislation of Basic Medical, Healthcare and Health Promotion Law of the People's Republic of China (Draft) has received much concern of the whole society. Aiming at the opinion soliciting draft issued for public comment of this draft law in the end of 2017, focusing on the improvement of contents relevant to occupational health and safety, the progress in the professional theory and practice were summarized systematically, then the main ideas of modification and improvement were generalized, and fifteen specific suggestions of relevant terms were put forward, so as to provide the reference for the relevant departments and organizations to modify and improve this draft law further.

Key words: basic medical and healthcare; health promotion; legislation; occupational health and safety



首页 概述 新闻中心 思想理论 组织制度 参政议政 社会服务 历史纵览 综合园地 专题

当前位置: 首页 > 专题 > 第2019次全国两会 > 提案议案 全文检索

## 关于完善职业健康与职业病防治相关法律的提案

来源: 农工党中央 时间: 2019-02-27 15:12:00 编辑: 陈静

The proposal on improving laws relevant to occupational health and occupational diseases

During the legislation of the Chinese Law on Basic Health Care, Medicine and Health Promotion since 2014, and amendment of the Chinese Law on Occupational Diseases Prevention and Control since 2010, Prof. Min Zhang actively advocated the occupational health by means of:

- publishing articles and books
- **submitting proposals to the National Committee of the Chinese People's Political Consultative Conference**
- providing opinions to the national health authority and leaders of the higher level



## Occupational health for HWs during COVID-19 outbreak in China

- From 20 to 29 January, all provincial regions have activated top-level public health emergency response to the epidemic, China carried out the most comprehensive and rigorous prevention and control in a people's war. Up to date, there were differentiate level of public health emergency response among provinces based on individual situation.
- On 8 April, travel restrictions in Wuhan city was lift, ending the 67-day lockdown of the hardest-hit area from 23 January, it became a milestone for China in securing final victory in the people's war against the COVID-19 outbreak.
- **Four stages were divided during the national campaign to contain the COVID-19, policies and practice for HWs' protection became integrated parts of public health emergency response.**



### Min Zhang: Protecting healthcare workers in China during the coronavirus outbreak

February 14, 2020

*Protecting healthcare staff on the frontline is a critical challenge for this outbreak, says Min Zhang*



Much has been written about the novel coronavirus now known as covid-19 since the first cases were reported in December 2019. However, one aspect of the virus's spread that I do not think has received

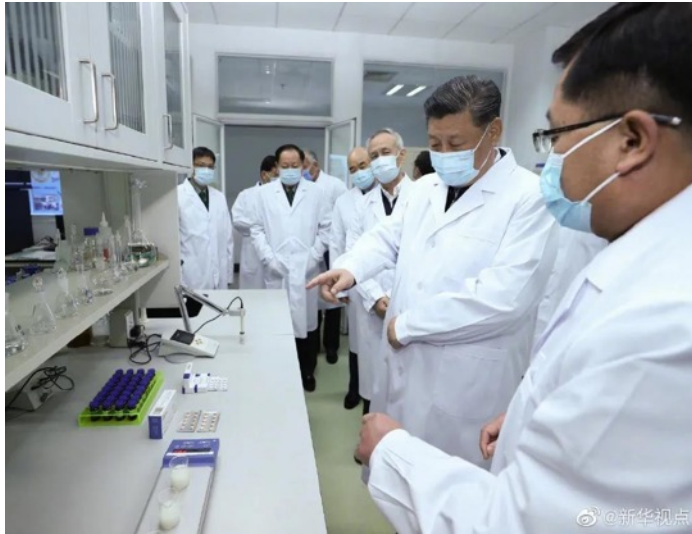
adequate attention is the occupational protection that is being afforded to healthcare workers, which is a critical challenge in this outbreak.

The WHO has been recording the number of confirmed cases of covid-19 globally, although there are not (as far as

- **On 20 Jan**, the first infection of 15 HWs was reported, it also the first evidence for human transmission of the COVID-19 in China.
- **A leading expert in pulmonary medicine**, who was dispatched from Beijing by the National Health Commission to Wuhan to investigate the outbreak, contracted COVID-19 during his field visit.
- **On 25 Jan, the first fatality** among healthcare workers in China was confirmed.
- **On 14 Feb, we had the first official announcement** by the National Health Commission on the number of health workers affected. The government reported that as of midnight on 11 February, a total of 1716 medical workers had been infected by COVID-19 and six had died.
- **Until now, of the more than 42,000 medical workers** who were dispatched to Hubei province from provinces and military to help fight the COVID-19 outbreak, 28,000 of them were female, **none was infected**.



- China's president and the government have urged healthcare workers to take certain precautionary measures, with relevant policies intended to help healthcare workers already integrated into the public health emergency response.
- For example, at the technical level, a national guideline on diagnosing and treating COVID-19 has been developed and implemented, which includes detailed information on procedures healthcare workers should follow and best practice for protecting themselves against different infectious risks.



- Measures to offer financial support to staff have also been rolled out.
- HWs with COVID-19 infection qualify for the work-related injury insurance.
- A temporary subsidy has also been provided by the central government to people working towards the outbreak's prevention and control.





- Despite all these efforts, gaps still exist between these well intentioned policies and the effective protection and support of staff, three aspects are of particular importance:
- Firstly, HWs' need for protective equipment at work has been outpacing supply.
- From the initial phases of the outbreak, there have been shortages of personal protective equipment, such as suits, masks, and eye protection.



- Secondly, the continual reports of healthcare workers becoming infected would suggest that staff are not always aware of or able to implement the standard precautions, as required by the technical guidance provided by the National Health Commission and World Health Organization (WHO).
- This seems to especially be the case for those who work in posts outside of the emergency department or infectious disease, or the designated hospitals that have been established for COVID-19.
- For instance, five medical workers in a Beijing hospital's cardiology department were recently infected. Making sure that staff have the awareness and capacity to protect themselves is especially a challenge in local level health services.



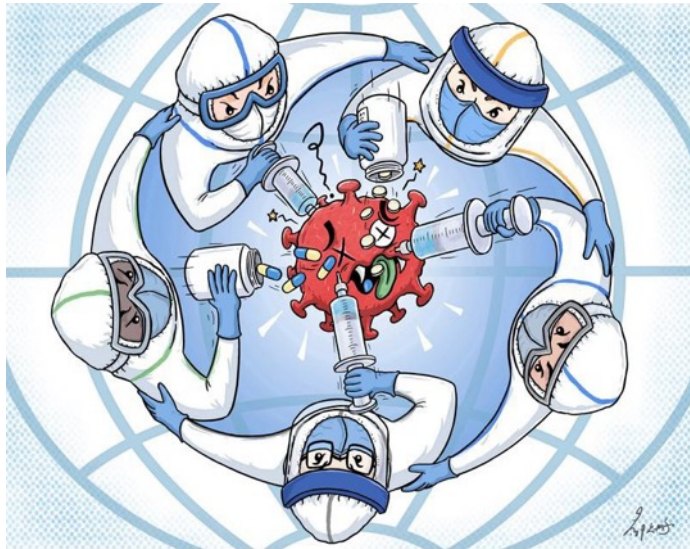
- Thirdly, there is no standardised procedure for daily or even routinely carrying out the health surveillance and environmental monitoring of healthcare workers.
- We translated and published the Chinese version of ILO and WHO joint instrument- *the Occupational safety and health in public health emergencies: A manual for protecting health workers and responders*.
- On 21 January 2020, we widely provided the draft of the translation towards central governmental departments, and shared it to professional organizations and HWs by social media.
- By the end of February, the Chinese version of manual was formally published, then the hard copy manuals were presented to governmental departments, including the National Health Commission, Ministry of Emergency Management and All-China Federation of Trade Unions, ebook was available freely online.



- Support for the mental health of healthcare workers (with a view to preventing stress, burnout, or post-traumatic stress disorder) was not given priority in the early stages of the outbreak.
- Later, the central government announced that healthcare workers will have improved access to psychological crisis intervention and counselling, and instructed local authorities to ensure medical staff have adequate working conditions, including access to food, rest, and equipment.



- In the long term, the outbreak of this virus has underlined how crucial it is for China to **develop a comprehensive system that provides occupational health for healthcare workers at each health facility**, with essential preventive services provided.



# Who should be protected and compensated ?

- | First responders from emergency medical teams.
  - | Health-care workers in emergency units and specialized treatment units, and laboratories that are directly involved in rescue, transportation, first aid, emergency care and treatment of affected communities.
  - | Cleaners, laboratory workers, traditional healers, traditional midwives, funeral and burial workers, home-care workers and religious leaders.
  - | Workers at risk of contact with undiagnosed patients included those conducting contact-tracing (including public health and community workers), point-of-entry and exit screening personnel, and travel industry staff (i.e. on aircraft, ground transport and ships).
  - | Taxi drivers, security forces (guards, police and soldiers), and workers handling waste in COVID-affected communities were also at risk.
- **Special attention should be paid: It's difficult to distinguish between occupational and community or residential exposure, particularly among local workers who maintained daily contact with their family members and the community.**



# What kinds of workplaces should be managed?

COVID-19 treatment and care units;

laboratories handling infectious agents;

Community settings:

- Community work (e.g. social mobilization, contact-tracing, case-finding);
- Ambulances and vehicles for patients or dead bodies;
- Post-mortem examinations;
- Safe and dignified burials;
- Points of entry and exit, land crossings, airports and sea ports;
- Aircraft;
- Ships;
- Taxis and public transport;
- Waste-water workers;
- Insecticidal spraying for virus control activities.



# Application of universal precaution and standards precaution during COVID-19 outbreak

The principle underlying universal precautions is that the blood and certain other body fluids of all recipients of health care are to be considered potentially infected with human immunodeficiency virus (HIV), hepatitis B virus (HBV), and other bloodborne pathogens. Universal precautions apply to blood, unfixed tissues (except intact skin), cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, amniotic fluid, semen, and vaginal secretions, but not to feces, nasal secretions, sputum, sweat, tears, urine, or vomitus unless these materials contain visible blood. Specific precautions are prescribed with respect to mouth-to-mouth resuscitation, surgery, invasive diagnostic procedures, obstetrics, renal dialysis, dentistry, clinical laboratories, morgues, and morticians' services. Barrier devices such as gloves, gowns, waterproof aprons, masks, and protective eyewear are required in certain settings, to prevent exposure to blood and other biologically hazardous materials.





**Standard precautions** are a simple set of effective practices designed to protect health workers and patients from infectious pathogens from recognized and unrecognized sources. These include:

- Ensure hand hygiene products availability (e.g. clean water, soap, single-use clean towels, alcohol-based hand rub)
- Comply with WHO hand hygiene practices
- No recapping of needles
- Use and availability of puncture- and liquid-proof sharps safety boxes at site of use
- Use proper personal protective equipment based on the type of exposure to blood (gloves, gown, mask and eye protection, face shield, etc.)
- Use gloves for contact with blood, non-intact skin, and mucous membranes
- Cover all cuts and abrasions on workers with a waterproof dressing
- Clean spills of blood promptly and carefully

WHO/ILO-HealthWISE



HWs are facing challenges:

- | we don't know who is infected
- | multiple exposure to biological hazards
- | knowleged gaps about the full picture of COVID-19

Biological hazards are organic substances that pose a threat to the health of humans and other living organisms. The essential difference between biological agents and other hazardous substances is their ability to reproduce. A small amount of a microorganisms may grow considerably in a very short time under favorable conditions. The most common biohazards are:

- | Bacteria; e.g. E. Coli, tuberculosis, tetanus.
- | Viruses; e.g. influenza, the corona virus which causes SARS, Hepatitis, and HIV.
- | Fungi; e.g. thrush.

Health workers are exposed to biohazards via contact with body fluids such as blood, urine, faeces, or cell cultures, which can contain virus or bacteria. Kitchen staff who work with animal products (blood, tissue, milk, eggs) can also be exposed to diseases and infections.



Some infectious agents are transmitted directly:

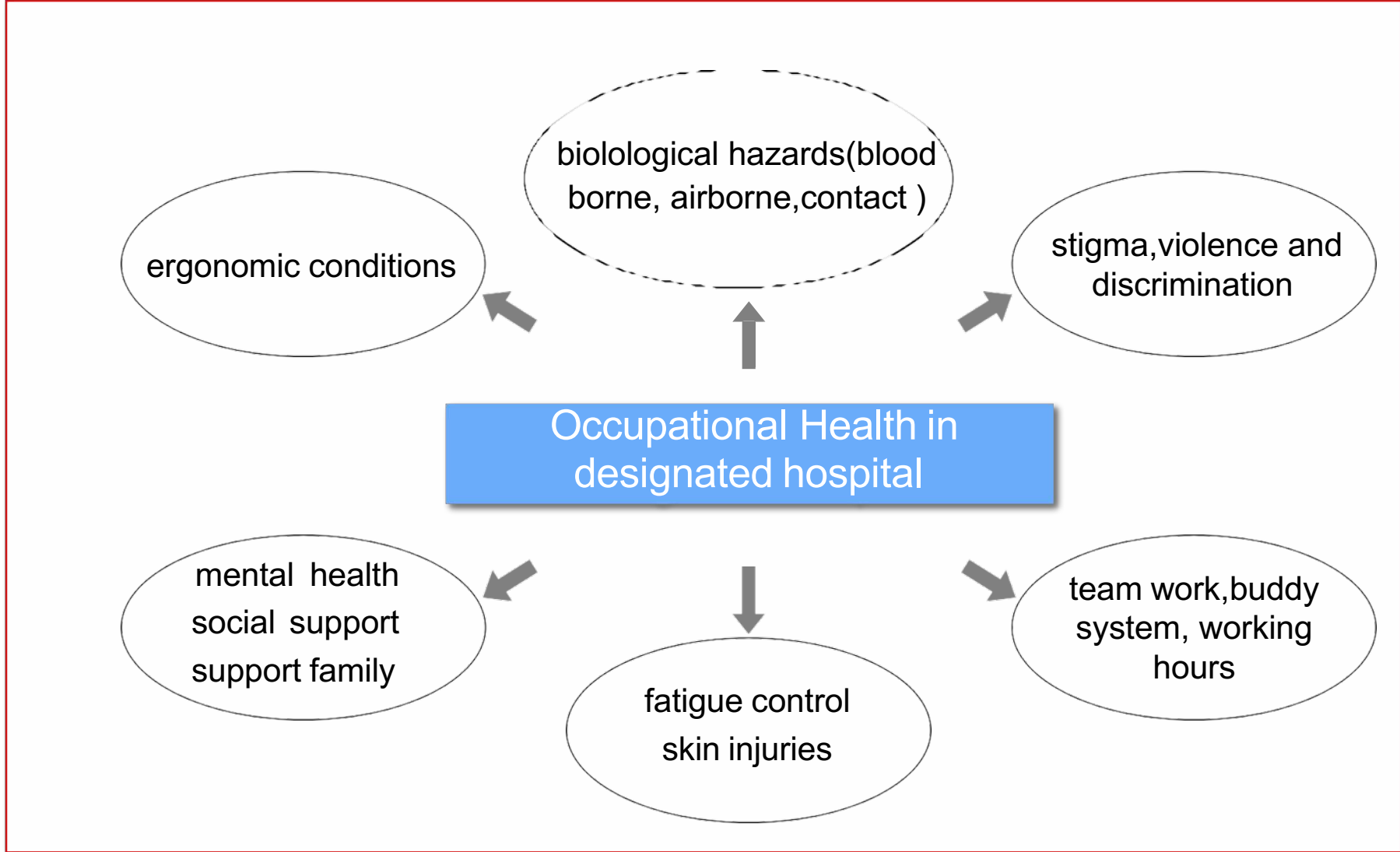
- Through physical contact between an infected and non-infected person.
- When droplets are projected, by a cough or a sneeze, into the mucous membranes of another person's nose, eyes, or mouth.
- When a person is injected or punctured by an infected object, such as a needle.

Other infectious agents are transmitted indirectly:

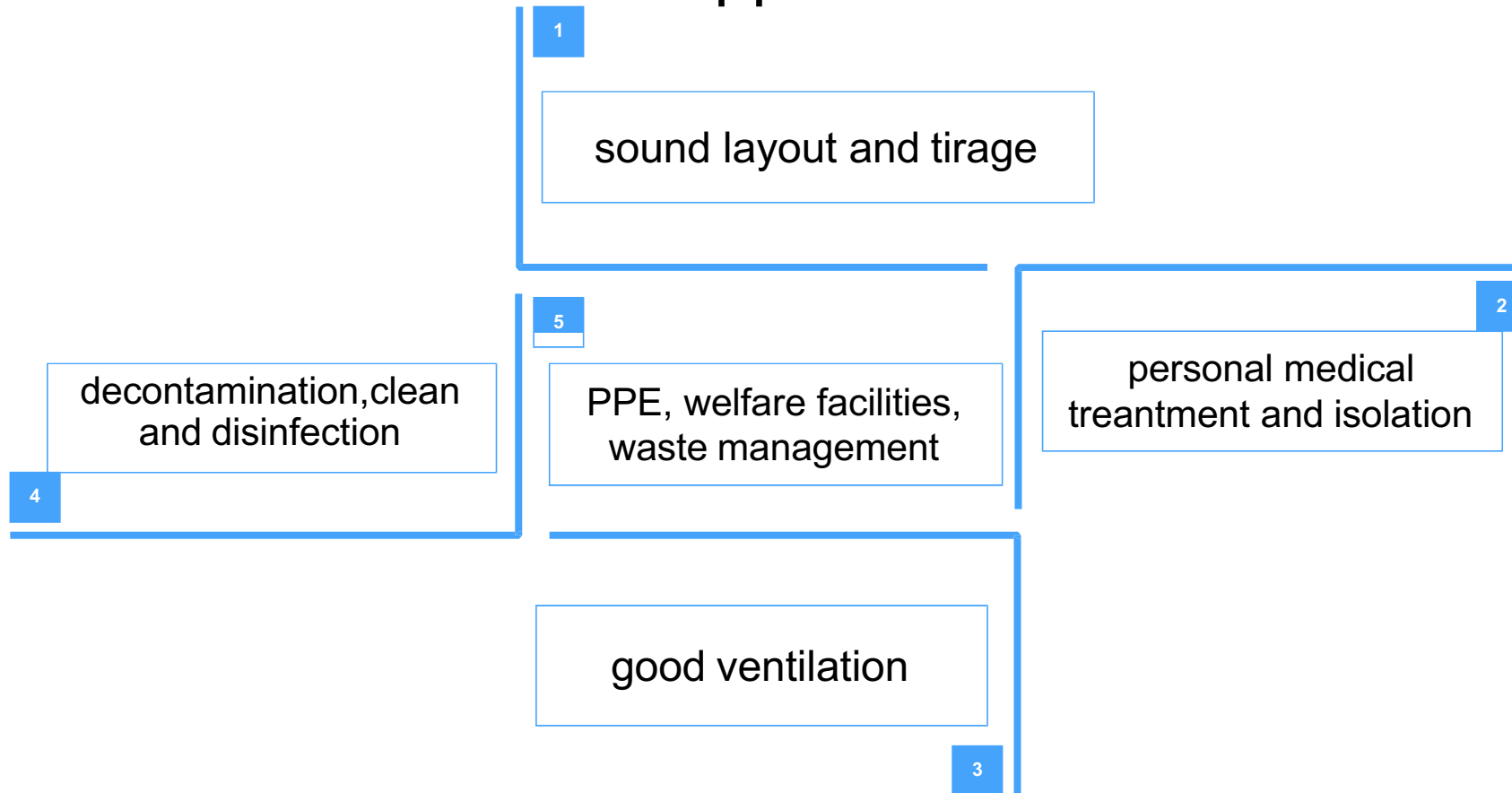
- By attaching themselves to food, water, cooking or eating utensils.
- When an insect (the vector) carries them from an infected to a non-infected person.

Biological hazards enter the body through-

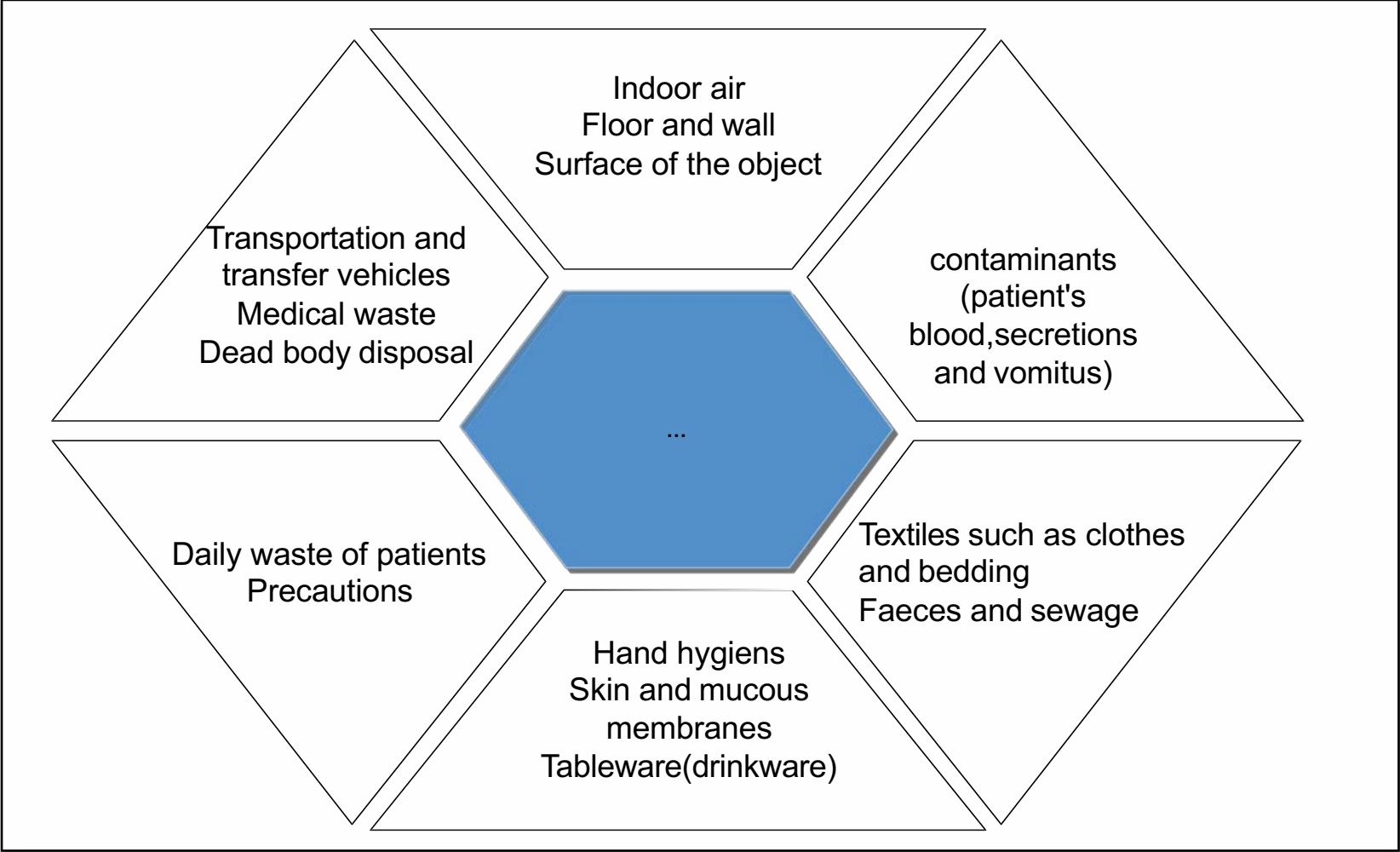
- Inhalation: breathing.
- Absorption: direct contact through breaks in the skin –even chapped skin or a hangnail, or through mucous membranes.
- Ingestion: swallowing.
- Injection: through a puncture in the skin.



# What are holistic approaches?



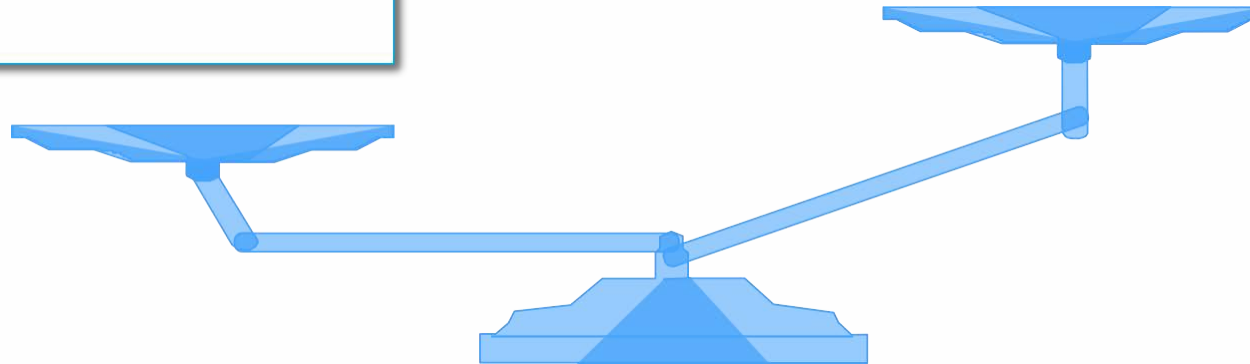
# Main locations of the disinfections



# What did we learn?

Stop HWs being overwhelmed with four early principle:  
**early detection**  
**early reporting**  
**early isolation**  
**early treatment**

Protection of HWs should focus on prevention and control of nosocomial and community infection.



- Publication list of our research relevant to this presentation:

1. ZHANG Min. chief in translation. ILO, WHO. HealthWISE-Trainer's Guide (Chinese version). Work improvement in health services. Beijing: Science Press; 2016.
2. ZHANG Min. chief in translation. ILO, WHO. HealthWISE-Action Manual (Chinese version). Work improvement in health services. Beijing: Science Press; 2016.
3. ZHANG M, Liu T, Chen L, Shi CL. Fifteen-year experience on occupational health protection for healthcare workers in China. International Commission on Occupational Health(ICOH) Newsletter. 2018; 3: 17-23.
4. ZHANG M, Wu RL. The Implementation Note for Prevention and Control of Occupational Exposure to Blood Borne Pathogens. Beijing: China Science Publishing & Media Ltd,2018.
5. ZHANG M, Xu LH, Liu T, Du XY, Li Q, Chen L, Shi CL. Model of Hospital Initiative on Systematic Occupational Health: from advocacy to practice of health protection for healthcare workers. Chinese Nursing Management. 2018; 18(2):145-149. Chinese.
6. ZHANG Min. Thinking and suggestions on improvement relevant contents of occupational health and safety involved in Basic Health Care, Medicine and Health Promotion Law (Draft). Journal of Safety Science and Technology. 2018; 14(11):5-11.
7. ZHANG Min. International consensus on workplace violence in health sector and its meaning to practice in China. Chinese Nursing Management. 2019;19(6): 923-928.
8. Chen N , Zhang M , Li R , Wang P , Wang YP. Investigation on workplace violence in a Grade 2 hospital. China Occupational Medicine.2019;46(4): 157-162.
9. ZHANG Min.How to implement workplace violence prevention and control at hospital level? Chinese Nursing Management. 2019;19(4): 481-487.
10. ZHANG Min. chief in translation. ILO. Workplace Stress : A Collective Challenge (Chinese version). Beijing: Science Press; 2019.
- 11.ZHANG Min. Protecting healthcare workers in China during the coronavirus outbreak. BMJ Opinion. 2020 Feb 18. Available from: <https://blogs.bmj.com/bmj/2020/02/14/min-zhang-protecting-healthcare-workers-china-coronavirus-outbreak/> .
- 12.ZHANG Min. chief in translation. WHO/ILO. Occupational safety and health in public health emergencies: A manual for protecting health workers and responders (Chinese version). Beijing: Science Press; 2020.





**Work together to defeat COVID-19 and build a healthier, more equitable, just and resilient world !**



**Thank colleagues of WHO and ILO  
very much for your strong support  
for many years!**



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# Webinar on the Protection of Health Workers in COVID-19: Lessons Learned from China

16 April 2020 • 13:00 – 14:30 Beijing/Manila



# Occupational health inspection of healthcare facilities in China

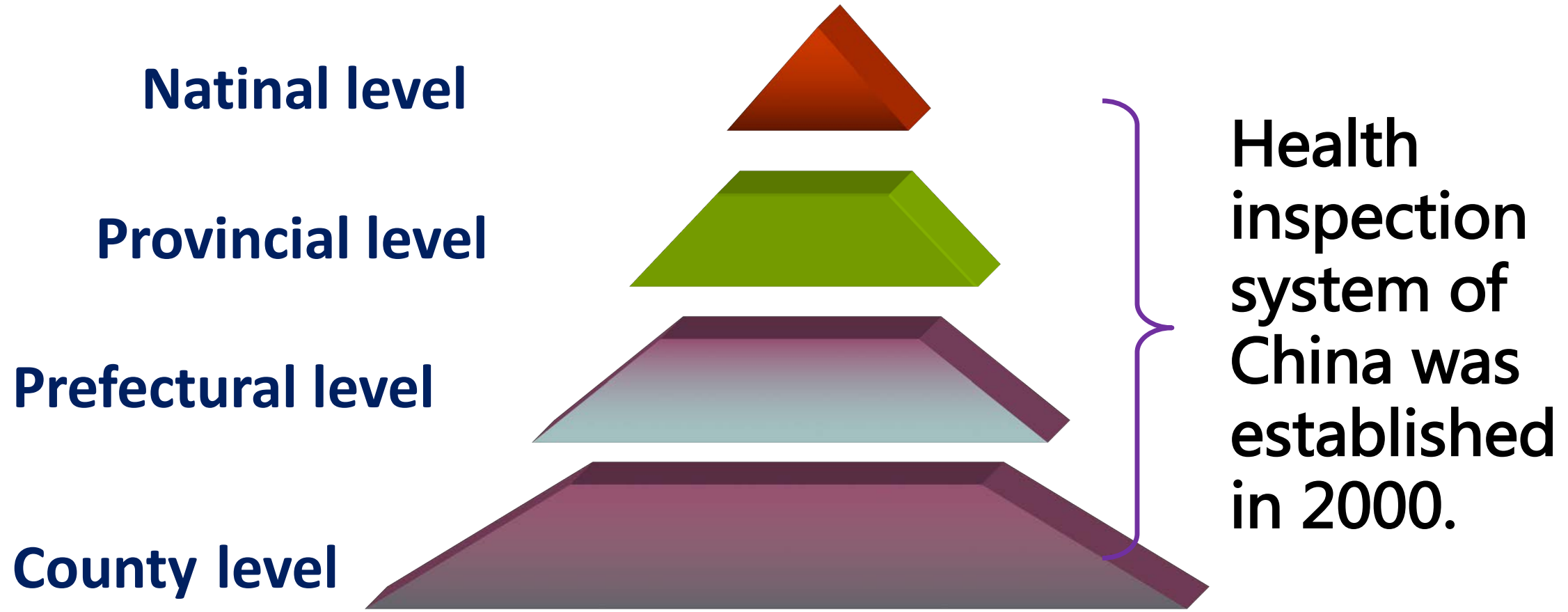
Mr. Bo JIA

National Health Committee  
People's Republic of China

## Major Contents

- **Health inspection system of China**
- **What did health inspectors do?**

# Health inspection system of China



## Job Scope of Health inspection bureaus of China

1. Enforce the health laws and regulations in the field of medical services, occupational health and other public health areas and penalize those illegal acts.
2. The objects of inspection include hospitals, clinics, schools, and enterprises etc.

# What did health inspectors do?

- The key HCW occupational health issue is to protect them from infection within the health care facilities.
- check if there were any situation that did not satisfy the requirements of laws and regulations in health care facilities.
- provide suggestions for correction.

# core components of inspection

- the self-protection of healthcare workers,
- infection prevention and control,
- clinical triage,
- fever clinics,
- department of infectious disease,
- appointed areas for treating COVID19 patients,
- centralized quarantine sites,
- laboratory testing, and
- medical wastes disposals.



# Inspect infection prevention and control



# Inspect the clinical triage



# Inspect the laboratory



# Inspect medical waste disposal



## great efforts made by health inspectors

- Many health inspectors gave up their holidays and weekends.
- Several of them even lost their lives.
- Health inspectors are also the soldiers in the battle and made great efforts.

Thank you !

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# Webinar on the Protection of Health Workers in COVID-19: Lessons Learned from China

16 April 2020 • 13:00 – 14:30 Beijing/Manila





# COVID-19 Protection Guidance in Chinese Comprehensive Hospital

--Experience from Beijing Chao-Yang hospital

Dr. Yong-Zhe Liu

Infectious Diseases and Clinical Microbiology





# Outline

- I. Suspected COVID-19 contaminated area in comprehensive Hospital
- II. Medical workers PPE wear and underwear procedure in fever clinic and quarantine wards (vedio)
- III. Patients personal protective measures in hospital



# Brief Introduction



- Comprehensive Hospital with 1500 beds, 3 million patients per year
- No 3. Teaching Hospital of Capital Hospital
- Top 5 in Respiratory and Critical Care Medicine

# Fever Clinic Function



- Seasonal and Epidemic infectious diseases ( respiratory tract and diarrhea ) surveillance and treatment; ( 03-SARS、09-H1N1、19-H5N6、19-plague )
- Bacteria resistance surveillance and Unknown Pathogen detection

# Seasonal Flu in 2018-2019



- Influenza like illness (ILI) 50,000 cases per year in fever clinic



- I. Suspected COVID-19 contaminated area in comprehensive Hospital



## Zones Setup in COVID-19 period

- **Red Zone** : Dangerous ! Fever clinic、 Quarantine wards,
- **Yellow Zone** : Transitional ! Emergency Room、 Operation waiting room,
- **Green Zone** : Safe! Internal、 Surgery、 Gynecology、 Pediatrics、 Ophthalmology、 Stomatology、 Dermatology and Others department

# Red Zone

**Fever Clinic**



**Quarantine Zone**



**Mobile CT**

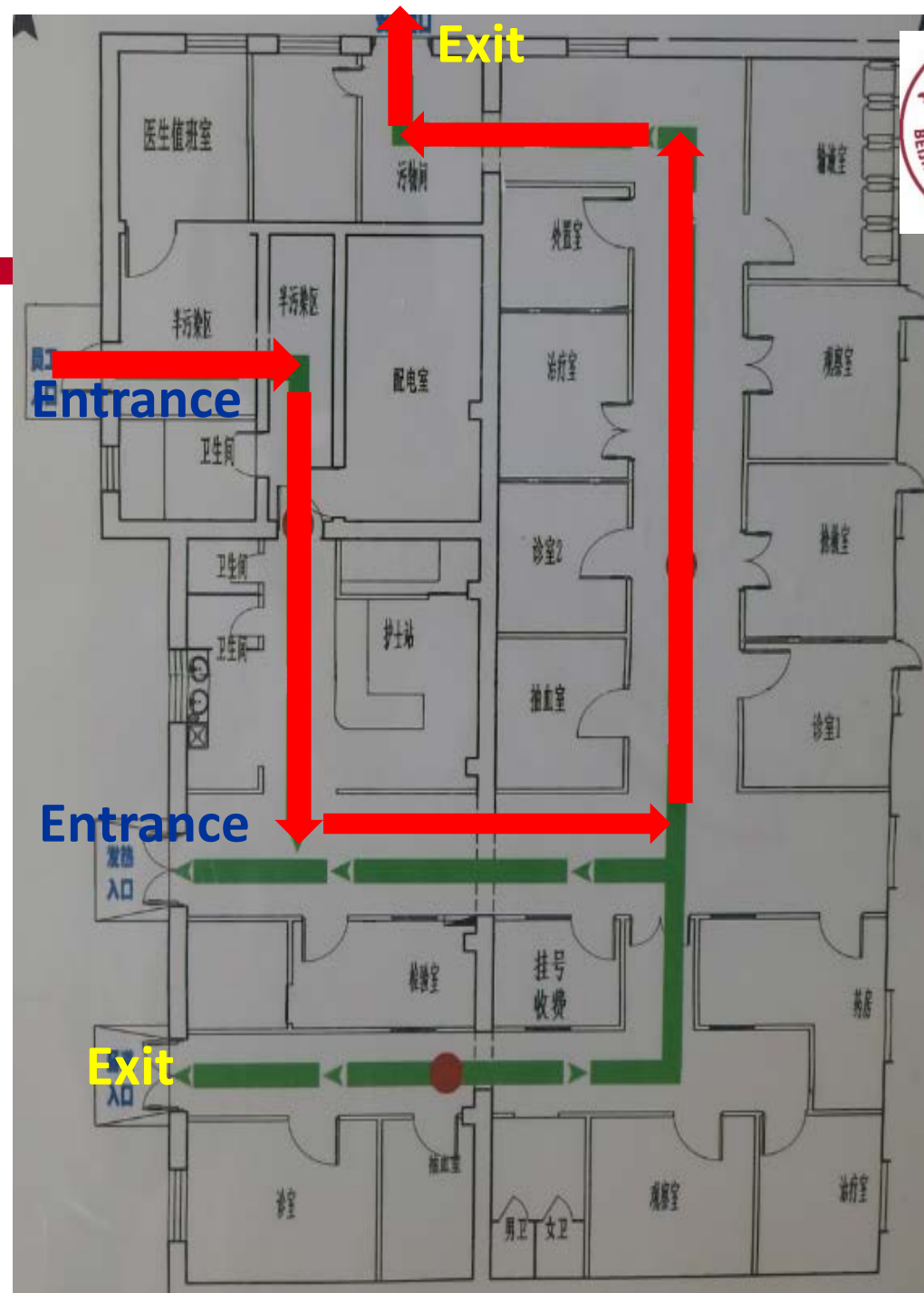


**ID ward  
ICU**



# Fever Clinic

- Two routes separately for patients and medical workers (green and red)
- **Entrance** and **Exit**
- Reception, Consulting room, Nurse Station, Blood test Lab, Pharmacy





# Entrance and Exit



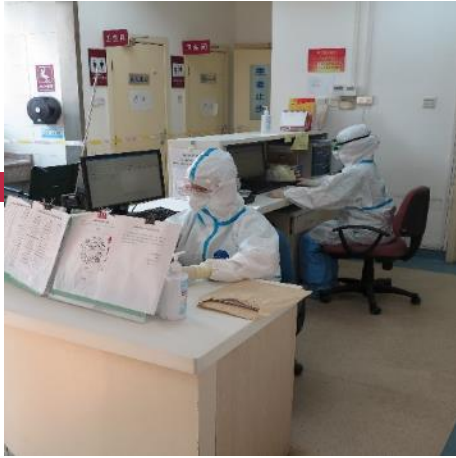
## Exit

1. Contaminated Protective suits ;
2. Waste mask and cap



## Entrance

Medical worker with PPE enter the door



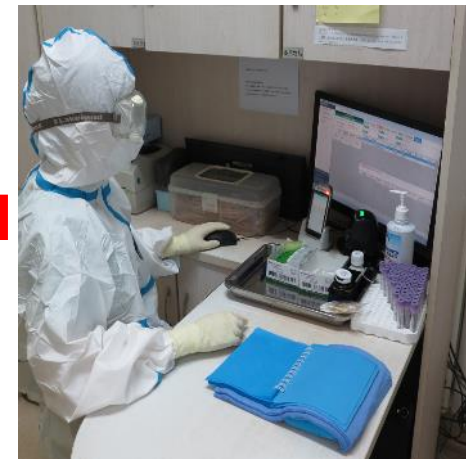
Reception



Consulting room



Payment



Blood and swab  
Sample collection



CT scan



Consulting room  
prescription

Stay-at-Home  
Quarantine zone



# Protection in treatment and resuscitation



# Medical protection in sample management



**Swab sample storage**



**sample transfer**



**sample receiver in BSL-2 lab**



**Coronavirus RT-PCR**



**Blood tests**



**Isolated CT cabin**



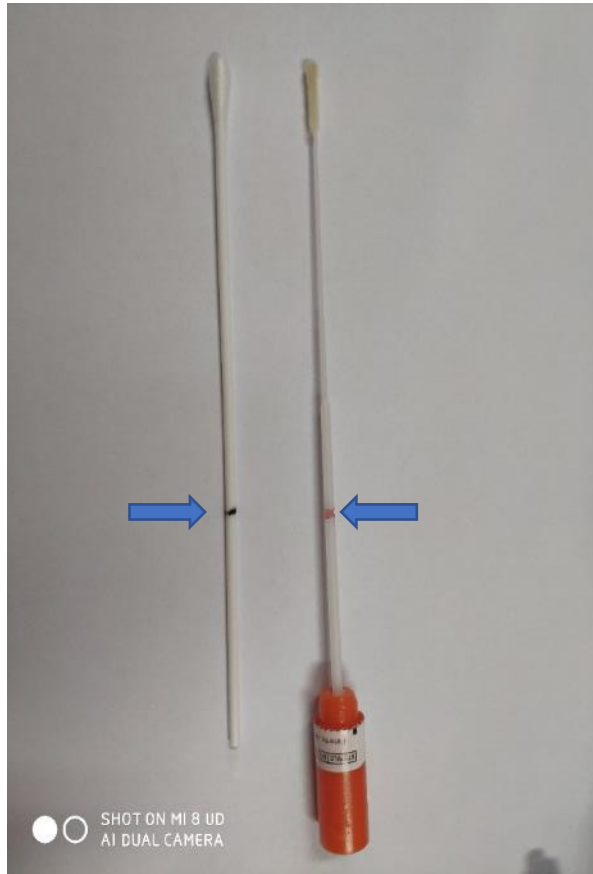
- II. Medical workers PPE wear and underwear procedure in fever clinic and quarantine wards (vedio)



## II. PPE wear and underwear procedure



# Sample Collection



nasopharygeal swab

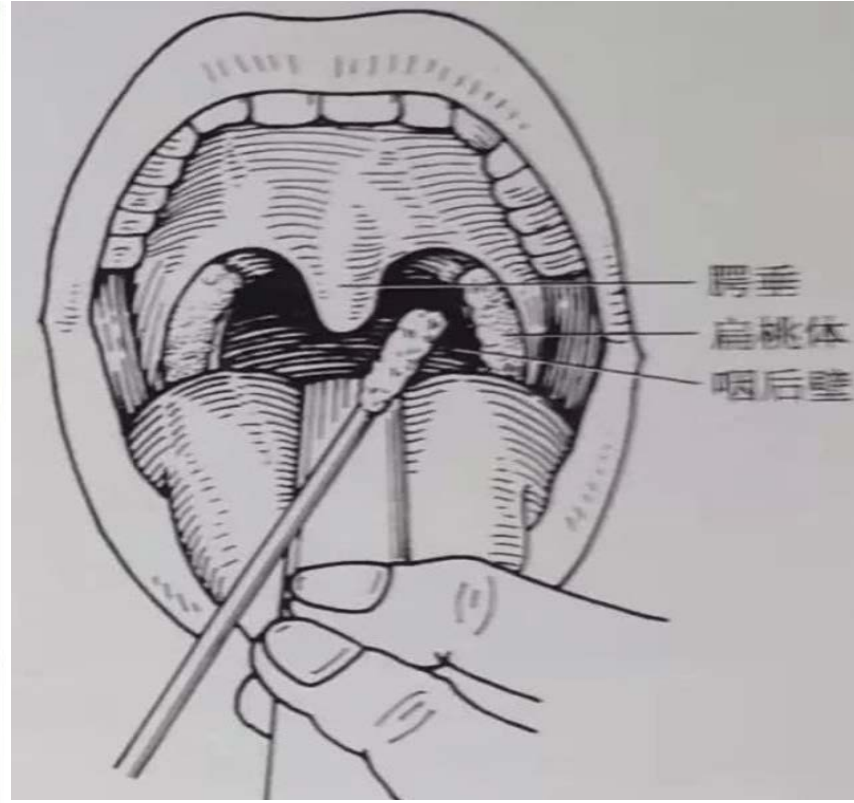


Flu antigen rapid test



sample storage fluid

# Pharyngeal swab







- III. Patients personal protective measures in hospital



# COVID-19 suspected cases criteria

- January 2020, patients from WuHan City with
- Fever、 respiratory sypmtoms (cough、 pharyngalgia、 shortness of breath) or cluster pneumonia;
- February- Early March, patients from COVID-19 epidemic provinces or reported regional outbreak;
- Late March up-to-date, patients from COVID-19 epidemic country or overseas traveler with fever or respiratory sypmtoms



- **Personal Protection:** Mask, gloves (optional)
- **Distance:** One patient in a consulting room
- **Order:** keep safety distance and wait in order
- **Self-service:** obtain examination information  
byself

**Reception  
Station**



**Consulting  
room**



**Consulting  
room**



**Consulting  
room**



# Self-service Procedure

**Vital Signs**



**App**



**Printer**

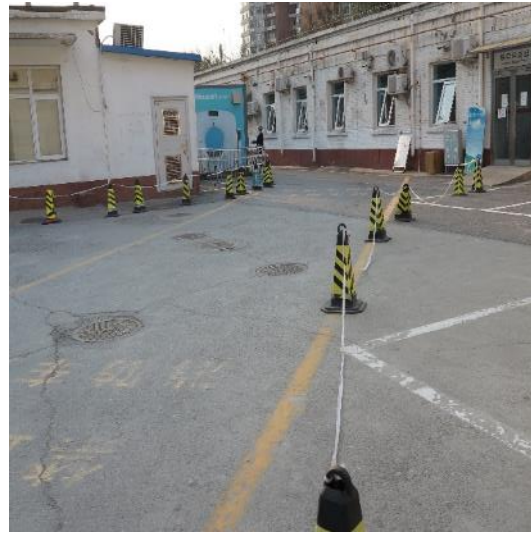


**Chest CT**



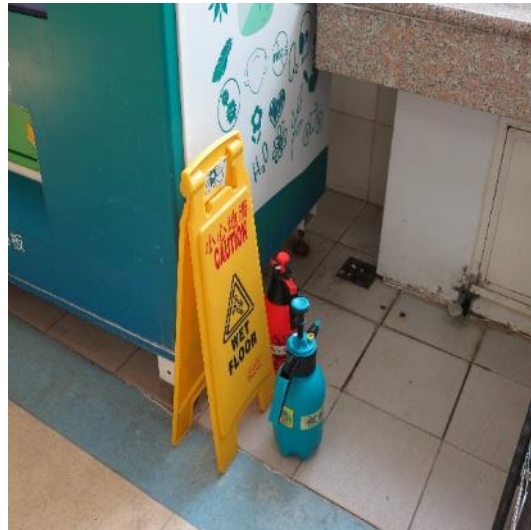
# Patients protection

**Patients' route special for fever clinic**



**Security keep the Order**

**Spray pot for Sterillization**



**Social worker guide the CT scan**



Thank your attention !

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# Webinar on the Protection of Health Workers in COVID-19: Lessons Learned from China

16 April 2020 • 13:00 – 14:30 Beijing/Manila







中国疾病预防控制中心  
CHINESE CENTER FOR DISEASE CONTROL AND PREVENTION

# Occupational Health Protection in Environmental Clean-up and Disinfection --COVID-19 Prevention and Control

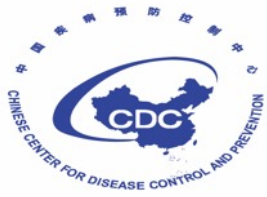
**National Institute of Environmental Health  
Chinese Center for Disease Control and Prevention  
Hongyang Duan**





# Contents

- Role of environmental cleaning and disinfection
- Clean-up and disinfection in different places
- Disinfection methods and disinfectants
- PPEs used during disinfection
- PPEs used during cleaning
- Choice of PPEs
- Notes of PPEs



# Role of Environmental cleaning and disinfection (1)

## □ *Route of Transmission*

- Transmission of the **SARS-Cov-2** happens mainly through respiratory droplets and close contact.
- **Aerosol transmission** is possible in a relatively closed environment with a long-time and high-concentration exposure to the aerosols containing the virus particles.
- The virus can be isolated in feces and urine, attention should be paid to feces or urine contaminated environment that may lead to aerosol or contact transmission.

□ *Disinfection*: the process is to kill and remove **pathogenic microorganisms** from the media.



## Role of Environmental cleaning and disinfection (2)

- ❑ Disinfection is an important means to **cut off** the transmission route
  - Preventive disinfection & disinfection of epidemic focus
  - Concurrent disinfection & terminal disinfection
  - Cleaning is also important
- ❑ Environmental cleaning and disinfection *aims at*:
  - **Environmental surface**—blocking contact transmission(e.g. droplet)
  - **Air**—blocking aerosol transmission
  - **Excrement, waste**



# Clean-up and disinfection in different places

## □ *Medical Institutions*

- Doctors, nurses, sanitation workers

## □ *Community, family*

- **Clean-up**: the public
- **Preventive disinfection**: the public, public interest group, governmental personnel
- **Disinfection of epidemic focus**: health professionals, staff of third-party professional organization

## □ *Shopping malls, supermarkets and other places*

- **Clean-up**: sanitation workers
- **Preventive disinfection**: sanitation workers, staff of third-party professional organization, health professionals
- **Disinfection of epidemic focus**: health professionals, staff of third-party professional organization



# Disinfection methods and disinfectants- disinfection of epidemic focus

## □ *Air*

- chlorine dioxide, hydrogen peroxide, peracetic acid or other disinfectants, aerosol spray, vacant space

## □ *Environmental surface*

- chlorine disinfectant or chlorine dioxide, constant spray or wipe disinfection

## □ *Fabric, tableware*

- chlorine disinfectant

## □ *Waste*

- is treated as medical waste
- The garbage and the ground of the temporary storage area are disinfected by spraying with chlorine disinfectant or chlorine dioxide





# PPEs used in the disinfection process- disinfection of epidemic focus

- Wear work clothes, disposable work caps, disposable gloves and long-sleeved thick rubber gloves, protective clothing, KN95 / N95 or above particulate protective masks or medical protective masks, goggles, protective face shields, work shoes, rubber boots
- If necessary, wear waterproof boot covers, waterproof aprons, or waterproof isolation gowns.
- When using non-powered air-purifying respirator with full-face mask, one should select a dust-and-toxicant filter box or canister according to the type of disinfectants.





# Disinfection methods and disinfectants- Preventive disinfection

## □ *Air*

- Ventilate

## □ *Flooring*

- Use a low concentration of chlorine disinfectant or chlorine dioxide, spray or wet mop to disinfect

## □ *High-frequency contact with surfaces*

- Use chlorine disinfectant, chlorine dioxide, quaternary ammonium disinfectant, medical alcohol, spray or wipe disinfect

## □ *Fabric*

- Chlorine disinfectant, chlorine dioxide, phenolic disinfectant, exposure to the sun outdoor, etc.







# PPEs-Preventive disinfection

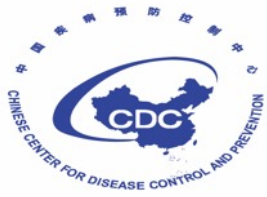
- Wear work clothes, disposable work caps, disposable gloves or long-sleeved thick rubber gloves, general masks or KN95 / N95 masks, work shoes or rubber boots
- If necessary, wear goggles, waterproof boot covers, waterproof aprons, or waterproof isolation gowns.



# PPEs-Cleaning

- *PPEs should be used depending on the locations*
  - Designated hospitals for COVID-19, suspected patient isolation places, etc. (Note: pay attention to protection against pathogens)
  - Other general places: work clothes, long-sleeved thick rubber gloves, general masks. If necessary, disposable work caps, goggles, work shoes or rubber boots, waterproof boot covers





# PPEs-Choice

□ Pathogenic organisms and chemicals

□ **No virus exposure risk:**

- In general, cleaning or preventive disinfection is enough, just consider protection **against chemicals**: general mask, long-sleeved thick rubber gloves, work shoes/rubber boots and work clothes

□ **With virus exposure risk:**

- Protection against pathogenic organisms and chemicals
- **PPEs against virus**: work clothes, disposable work caps, disposable gloves, protective clothing, KN95 / N95 or above particulate protective masks or medical protective masks, goggles, protective face shields, work shoes
- During disinfection of epidemic focus, the concentration of chemicals in a confined space may be high. It is necessary to use non-powered air-purifying respirator with full mask, to protect **against chemicals**.





# PPEs-Notes

## □ When taking off PPEs:

- Focus on safety during the removal of PPE
- Avoid contact with contaminated surfaces during the removal of PPE
- **Hand disinfection** should be carried out at every step in the process of removing protective equipment. After all PPEs are removed, wash hands and disinfect hands again.

## □ Other notes for masks and PPEs:

- KN95 / N95 or above particulate protective masks or medical protective masks, non-powered air-purifying respirator with full-face masks: **face-seal check**
- non-powered air-purifying respirator with full-face masks: **timely cleaning and disinfection**
- Disposable protective clothing, disposable masks and other disposable supplies **should not be reused**



中国疾病预防控制中心  
CHINESE CENTER FOR DISEASE CONTROL AND PREVENTION

# Thank you!



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# Webinar on the Protection of Health Workers in COVID-19: Lessons Learned from China

16 April 2020 • 13:00 – 14:30 Beijing/Manila





中国疾病预防控制中心  
CHINESE CENTER FOR DISEASE CONTROL AND PREVENTION

# COVID-19 Protective Guidance for Epidemiological Investigators

----Experience from China CDC Support Contingent To Wuhan

**National Institute of Occupational Health and Poison Control (NIOHP)**

**China CDC, Feng Han. PhD (汉锋)**



2020/4/16



# China CDC Support Contingent To Wuhan



**The Epidemiological Investigator Team  
40 members**

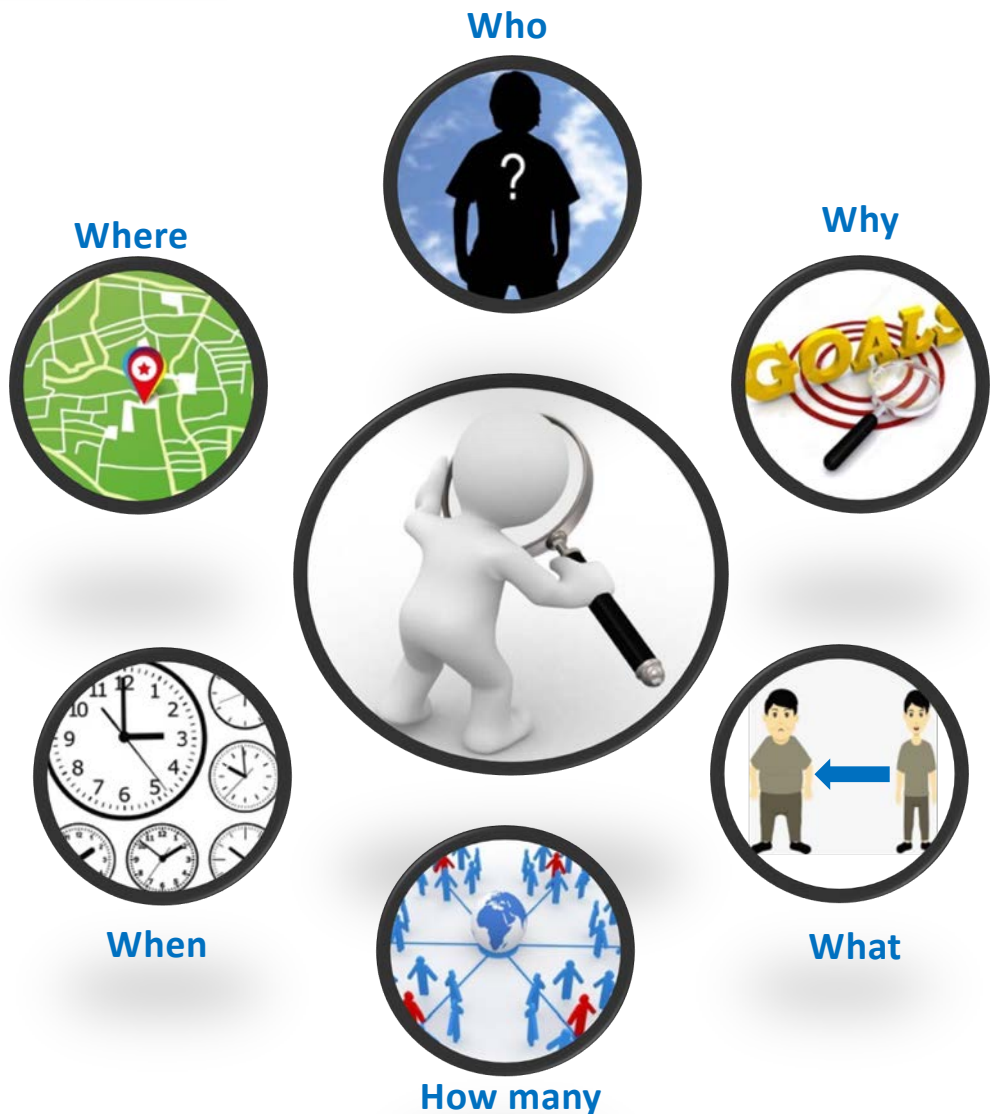
**The Group of East Lake High-tech Development District**

2020/4/16





# What do Epidemiological Investigators do?



- **Patients**
  - Family/Neighbours/Colleagues ←
- **Medical Record(when/where)**
- **Collecting Methods**
  - Telephone
  - Electric Questionnaire
  - **Field Survey**
    - **Face to Face**



1. Name: \_\_\_\_\_  
 Department: \_\_\_\_\_  
 Employee number: \_\_\_\_\_

2. On which regulations is the training program based?  
 ICAQTI and WADGDR  
 UN Orange Book and ICAQTI  
 WADGDR and REDG  
 49 CFR and UN Orange Book

3. "Keep away from heat" handling label must be used in addition to the applicable hazard label on packages and overpacks containing self reactive substances in Division 4.1 and division 5.2, organic peroxides.  
 TRUE  
 FALSE

4. Is dangerous goods is divided into 12 classes?  
 TRUE  
 FALSE





# Field Survey

A Medical  
Observation Site

An Asymptomatic  
infected person



2020/4/16

A Welfare institute

Confirmed cases



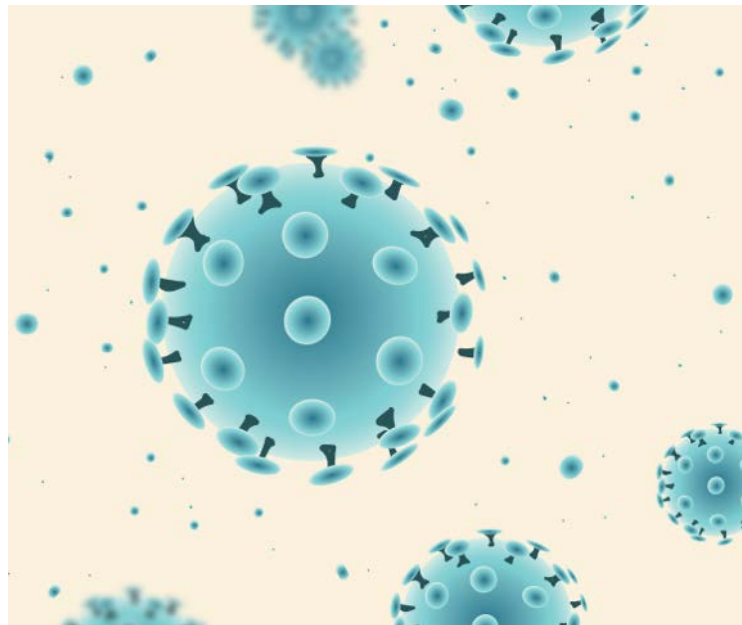
100



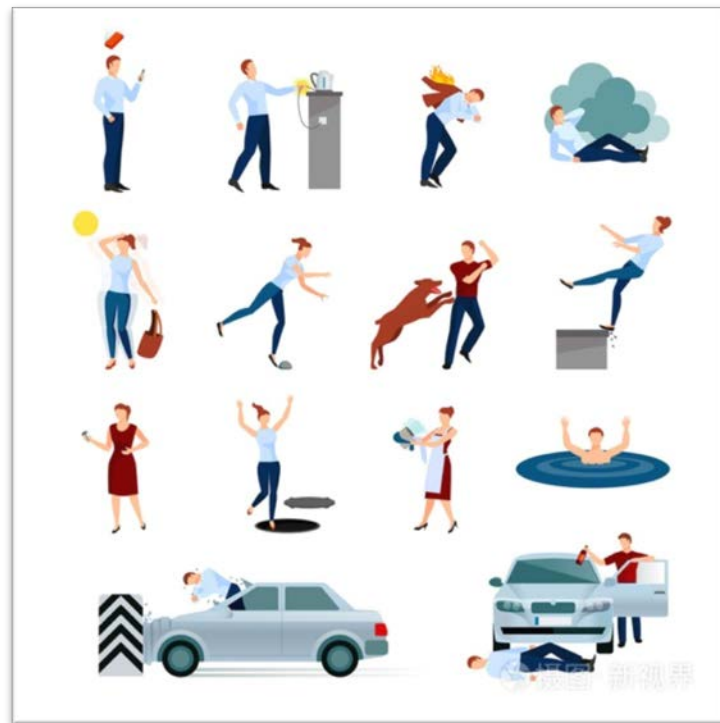
# Survey Patients



# Hazards during Field Survey



**2019-nCoV**

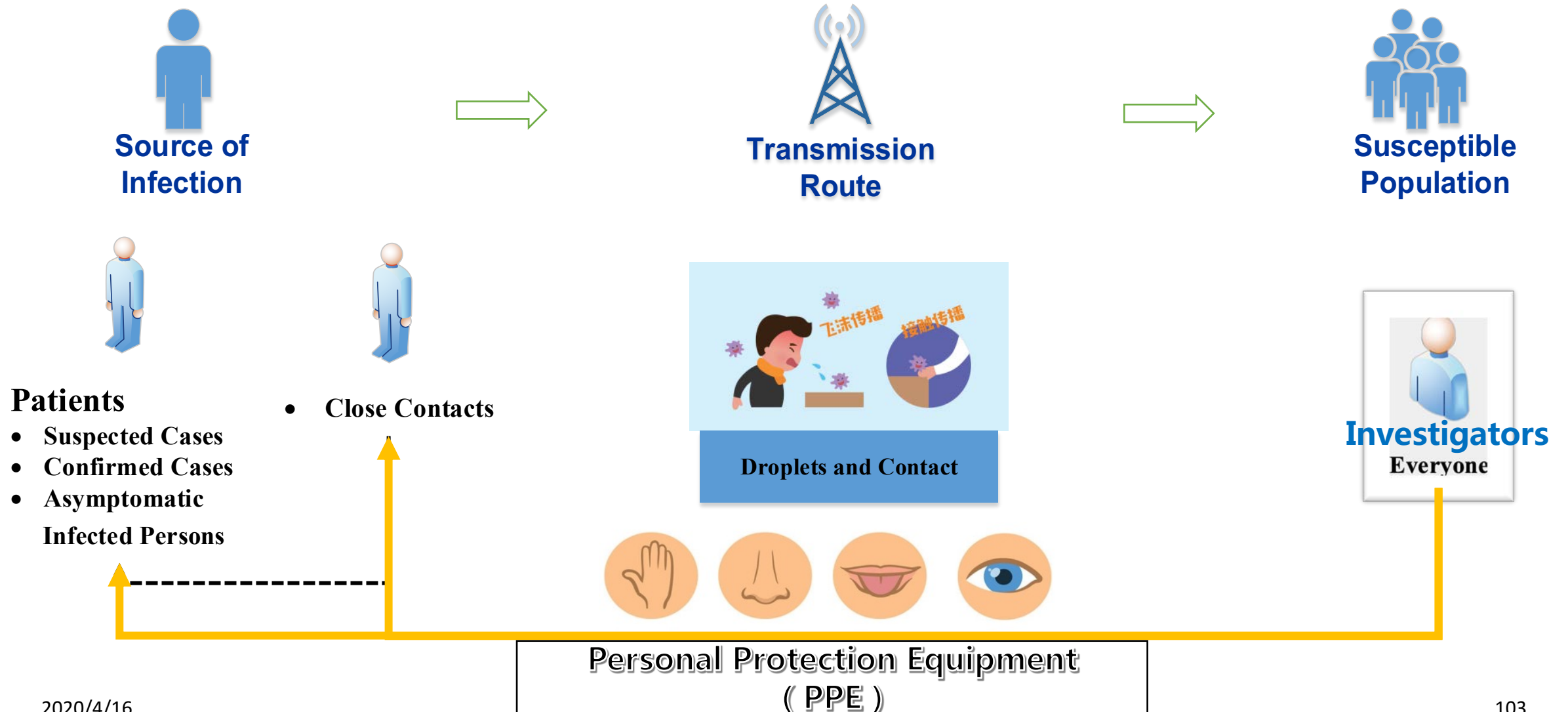


**Accidental injury**



**Psychological damage**

# Epidemiology of COVID-19



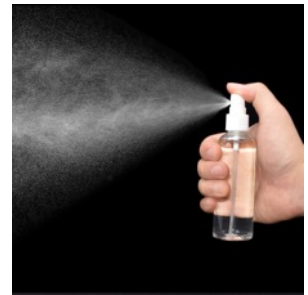
# Critical Points of Protection During Field Survey

**Patients Droplets**



**Survey Papers And Pens**

**PPE**



# PPE for Field Survey



**Protective face shields**



**Patients**

- Suspected Cases
- Confirmed Cases
- Asymptomatic Infected Persons



**Protective goggles**



**Disposable work caps**



**Disposable gloves**



**Disposable gloves**



**Boot covers**



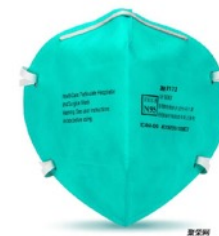
**Disinfectants**



**N95 or above masks**



**Protective clothing**



**Medical protective masks**



**Patients**

- Suspected Cases
- Confirmed Cases
- Asymptomatic Infected Persons

**Close contacts**



# Cautions of PPE (1)

- PPE: Torn
  - Handles
  - Keys
  - Nails
  - Thorns
- Replace





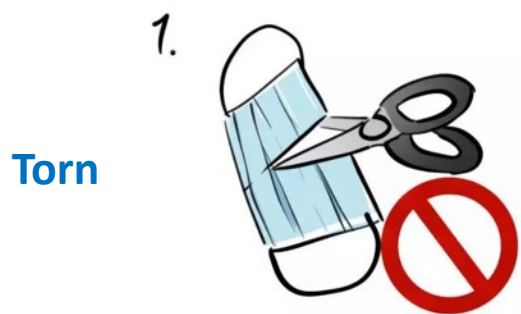
# Cautions of PPE (2)

- Wear for hours
  - Drink and eat little
  - Over 4h
    - Diapers
- Female hygiene products



# Notes of Masks (1)

## Replacement

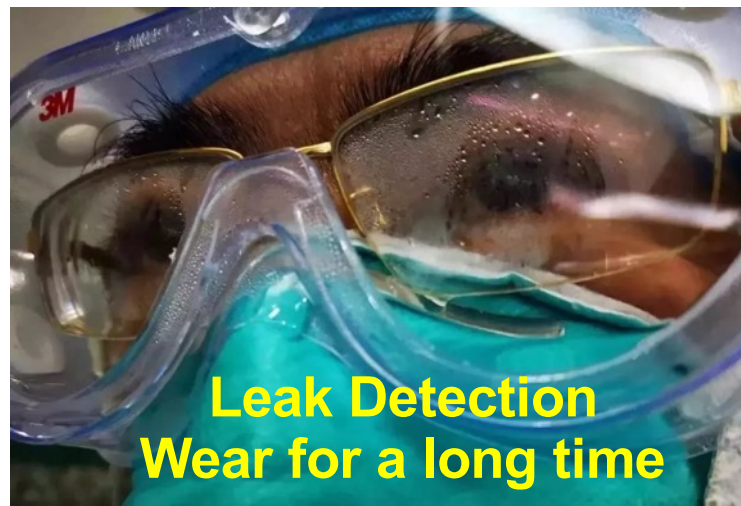


**75% Ethanol**

# Notes of Masks (2)

**Breather valve**

**Patients X**



**Leak Detection**  
**Wear for a long time**



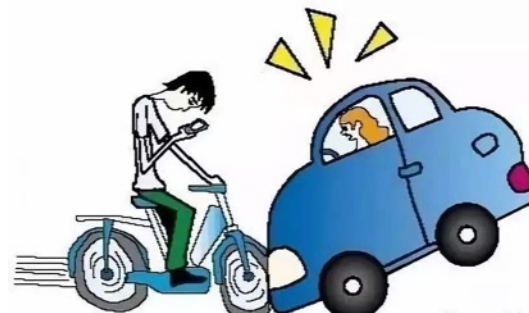
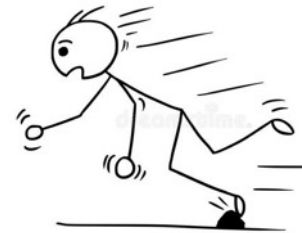
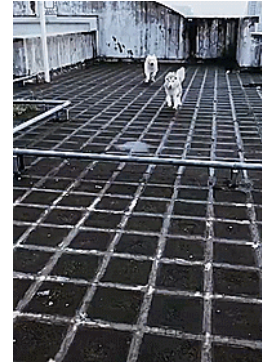
**Antifoggant**

**Beard X**

**↓ Tightness**

# Accidental injury

- Objects
  - Liquid: water/oil
  - Pipes/Ropes
  - Steps/Ladders
  - Stones/Bottles
- Environment
  - Darkness
  - Rainy/Snowy/Windy
- Traffic
  - Car/Bike
- Activity
  - Jump/Run



# Psychological damage

- Fear
  - COVID-19
- Death
  - Patients
  - Colleagues/Friends
- Others' Offensive
  - Hit
  - Scold
- Fatigue



- COVID-19
  - Preventable
  - Controllable
- Talk
  - Parents/Lover/Family/Friends/Colleagues
- Comfort
- Support
- Physical Exercise
  - Strong body
  - Release
  - Immunity



中国疾病预防控制中心  
CHINESE CENTER FOR DISEASE CONTROL AND PREVENTION

Protect ourselves, save more lives!

**Thanks For Attention !**  
THANKS FOR ATTENTION !



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