Protocol for assessment of potential risk factors for 2019-novel coronavirus (2019-nCoV) infection among health care workers in a health care setting

医疗机构中医务人员新型冠状病毒（2019-nCoV）感染的潜在危险因素评估方案

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目录

指南概要

Study population Health care workers in a health care setting in which a confirmed 2019-nCoV case has received care	研究人群 在有确诊新型冠状病毒（2019-nCoV）病例的卫生机构中的医务工作者
Potential output and analysis Transmissibility in healthcare settings, through estimates of: • Secondary Infection rate (SIR) among healthcare workers • Range of clinical presentation, risk factors for infection • Serologic response following symptomatic 2019-nCoV infection • Identification of possible routes of transmission	可能的结果与分析 通过对以下方面的估计，来分析医疗卫生场所中的可传播性： • 医务工作者的续发感染率 • 临床表现范围，感染危险因素 • 2019-nCoV 感染出现症状的后的血清学应答 • 确定可能的传播途径
Study design Prospective study of health care workers involved in care of any confirmed 2019-nCoV case, irrespective of symptoms	研究设计 参与医疗护理 2019-nCoV 确诊病例（不考虑是否有临床症状）的医务工作者的前瞻性研究
Minimum information and specimens to be obtained from participants	参与者的最少信息和样本
Data collection: Epidemiological data including: clinical symptoms, exposures in health care facility, including contact with confirmed case(s) and use of personal protective equipment.	资料收集：流行病学资料包括：临床症状，在医疗机构中的暴露史，包括与确诊病例的接触以及个人防护设备的使用。
Specimens: Serum to inform seroepidemiological inferences, optional - respiratory (and other) to diagnose current 2019-nCoV infection	样本：血清用于提供血清流行病学推断，可选-呼吸（及其他）系统的样本用以诊断是否感染 2019-nCoV

1 背景

The detection and spread of an emerging respiratory pathogen are accompanied by uncertainty over the key epidemiological, clinical and virological characteristics of the novel pathogen and particularly its ability to spread in the human population and its virulence (case-severity). This is the case for the novel coronavirus (2019-nCoV), first detected in Wuhan city, China in December 2019 (1).

新呼吸道病原体的发现和传播伴随着对其关键流行病学，临床和病毒学特征的不确定性，尤其是其在人群中的传播能力及毒力（病例严重性）。新型冠状病毒（2019-nCoV）就是这种情况，该病毒于 2019 年 12 月在中国武汉市首次发现(1)。

Other coronaviruses such as Severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV) have been characterized by inefficient transmission in general community settings, but also by amplification events in health care settings occasionally resulting in large nosocomial outbreaks. Overcrowding in emergency rooms, non-adherence to infection prevention and control precautions, as well as possible environmental contamination are thought to be implicated in such amplification in MERS-CoV outbreaks (2-6).

其他冠状病毒例如严重急性呼吸系统综合症冠状病毒（SARS-CoV）和中东呼吸系统综合症冠状病毒（MERS-CoV），它们的特征是在一般社区环境中传播效率低下，但在医疗机构中也存在感染扩增事件，偶尔会导致大规模医院感染暴发。急诊室人满为患，未遵守预防感染防控措施以及可能存在的环境污染均被认为与 MERS 暴发相关(2-6)。

Health care workers play a critical role, not only in the clinical management of patients, but also in ensuring adequate infection prevention and control measures are implemented in healthcare facilities. Initial surveillance focuses primarily on patients with severe disease, and as such, the full spectrum of diseases, including the extent and fraction of mild or asymptomatic infection that do not require medical attention and the role they may play in secondary transmission are not clear.

医务工作者不仅在病人的临床管理中发挥着重要作用，而且也在确保医疗卫生机构充分落实感染防控措施中发挥着关键作用。由于最初的监测主要集中在重症患者身上，因此，疾病的全貌包括不需要医疗护理的轻症病例或无症状感染的程度和比例，以及它们在继发性传播中可能发挥的作用尚不明确。

Understanding 2019-nCoV infection among healthcare workers and the risk factors for adverse outcomes is important not only for characterising virus transmission patterns and risk factors for infection, but

了解医务工作者中 2019-nCoV 的感染情况和危险因素不仅对明确病毒传播模式和感染的危险因素具有重要意义，而且对于预防今后医务人员和其他

also for preventing future infection of healthcare workers and other patients, for informing and updating infection prevention and control measures at healthcare facility and national level and for reducing secondary 2019-nCoV transmission within healthcare settings.

患者感染、通知和更新医疗卫生机构和国家级的感染防控措施，并减少医疗卫生机构内 2019-nCoV 的二次传播至关重要。

At this stage, the extent of 2019-nCoV infection in health care settings is not clear, nor whether there are certain risk factors associated with infection in health care workers. The following protocol has been designed to investigate the extent of infection and risk factors for infection among health care workers. Follow-up and testing of respiratory specimens and serum of health care workers within a facility in which a confirmed case of 2019-nCoV infection is receiving care can provide useful information on transmissibility and routes of transmission, and are important for limiting amplification events in health care facilities.

现阶段，医疗卫生机构中 2019-nCoV 感染的程度，医务工作者是否存在一定的感染危险因素皆不明确。 以下方案旨在调查医务工作者感染的程度和感染的危险因素。在有 2019-nCoV 确诊病例的医疗卫生机构中，随访医务工作者，检测其呼吸道标本和血清标本可以提供有关病毒传播能力和传播途径的有用信息，对限制卫生机构的感染扩增事件非常重要。

Each country may need to tailor some aspects of this protocol to align with public health, laboratory and clinical systems, according to capacity, availability of resources and cultural appropriateness. However, using a standardized protocol such as the protocol described below, epidemiological exposure data and biological samples can be systematically collected and shared rapidly in a format that can be easily aggregated, tabulated and analyzed across many different settings globally for timely estimates of 2019-nCoV infection severity and attack rates, as well as to inform public health responses and policy decisions. This is particularly important in the context of a novel respiratory pathogen, such as 2019-nCoV.

各个国家可能需要根据能力，资源的可及性和文化适宜性来调整本方案的某些方面，使之与公共卫生，实验室和临床系统相一致。 但是，使用如下所述的标准化方案，可以系统地快速收集和共享流行病学暴露数据和生物样本，并可以方便地对其进行汇总，制表和分析，以便在全球范围内对许多不同的环境进行及时估计，以对 2019-nCoV 进行及时估算感染的严重程度和罹患率，并为公共卫生应对和政策决策提供信息。这对于新型呼吸道病原体（例如 2019-nCoV ）而言尤其重要。

Comments for the user’s consideration are provided in purple text throughout the document as the user may need to modify methods slightly because of the local context in which this study will be carried out.

由于实施研究的环境不同，使用者可能需要对研究方法进行微调。因此，在整个文档中供用户考虑的注释以紫色文字形式提供。

1.1 目标

There are three primary objectives of this investigation among health care workers in a health care setting where a 2019-nCoV infected patient is being cared for:

1. To better understand the extent of human-to-human transmission among health care workers, by estimating the secondary infection rate1 for health care worker contacts at an individual level.
2. To characterize the range of clinical presentation of infection and the risk factors for infection among health care workers.
3. To evaluate effectiveness of infection prevention and control measures among health care workers
4. To evaluate effectiveness of infection prevention and control programmes at health facility and national level

在有 2019-nCoV 确诊病例的医疗卫生机构中开展医务人员调查，其主要目标有三个：

1. 通过在个体层面估算医务人员的继发感染率[1]，更好地了解医务工作者之间人际传播的程度。
2. 明确医务工作者感染的临床表现范围和感染危险因素的特点。
3. 评估医务工作者感染预防和控制措施的有效性。
4. 评估国家层面以及医疗卫生机构的感染预防和控制措施的有效性

This investigation among health care workers can permit evaluation of secondary objectives such as, but not limited to:

1. To determine the serologic response for health care workers with symptomatic and possibly asymptomatic 2019-nCoV infection
2. To characterize duration and severity of 2019-nCoV-associated disease among health care workers.
3. Others (context specific/ optional)

在医务工作者间的这项调查可用于评估包含且不限于如下的次要目标：

1. 探明有症状和可能无症状的 2019-nCoV 感染医务人员的血清学反应
2. 描述 2019-nCoV 相关疾病在医务工作者中的持续时间和严重程度
3. 其他（根据环境/可选）

COMMENT: Antibody kinetics of 2019-nCoV infection are currently not known, and the serologic response of mild or asymptomatic 2019-nCoV infections may be limited. The study investigators may wish to consider using molecular testing of health care worker contacts

备注：目前尚不明确 2019-nCoV 感染的抗体动力学，轻症或无症状的 2019-nCoV 感染者的血清学应答可能有限。如果研究是在刚刚识别出 2019-nCoV 感染患者的医疗卫生机构内开展的，则

to capture acute infection (regardless of symptoms), if the study is started shortly after the identification of a patient with 2019-nCoV infection within the health care facility.

研究人员应考虑对有暴露史的医务工作者进行分子检测以识别急性感染（无论是否有症状）。

[1] In this context the secondary infection rate (SIR) is a measure of the frequency of new cases of 2019-nCoV infection among the health care worker contacts of a primary confirmed case within the same health care facility in a defined period of time, as determined by a confirmed 2019-nCoV positive lab result. In simple terms: the proportion of health care worker contacts of a primary case who subsequently become infected with 2019-nCoV

[1] 在本文中续发感染率（SIR）是测量在确定时间段内，在同一医疗机构中，接触初始 2019-nCoV 确诊病例的医护人员中以实验室阳性结果判定的新发病例出现频率的方法。简单来说：在接触 2019-nCoV 确诊病例的医务工作者中继发感染 2019-nCoV 的医务人员所占的构成比。

2 研究过程

2.1 研究设计

This is a case-ascertained prospective investigation of all identified health care contacts working in a health care facility in which a laboratory confirmed 2019-nCoV infected patient (see 2.2 Study population) receives care. Note that this study can be done in health care facilities at all 3 levels of a health system – not just in hospitals. It is intended to provide epidemiological and serologic information which will inform the identification of risk factors 2019-nCoV infection among health care workers.

本研究为病例确定的前瞻性研究，对在接诊和护理由实验室确诊的 2019-nCoV 患者（见 2.2 研究人群）的医疗卫生机构中的所有医务人员开展调查。请注意，本研究可在医疗卫生系统中一级到三级的所有医疗卫生机构中开展，而不仅局限于在医院开展。它的目的是提供流行病学和血清学信息以帮助确定医务工作者中 2019-nCoV 感染的危险因素。

The timing of this study is critical. Ideally, this study should be conducted as soon after a patient with 2019-nCoV is identified at a health care facility. It needs to be possible to define a discrete period of possible exposure for each are of the health care facility that the patient has visited and an exhaustive list of all health care workers who have been present in the same area as the patient. It should also ideally be conducted within the early phases of an epidemic, before

研究时机尤为关键，理想情况下，应在卫生机构确诊 2019-nCoV 患者后立即进行这项研究。这需要为患者访问过的每一个医疗机构的明确可能的暴露时间段，并详细列出与该患者在同一时间同一区域的所有医疗工作者。理想情况下，研究应该在流行的早期阶段开展，即在广泛传播或医院暴发之前进行。

widespread transmission or nosocomial outbreaks occur.

2.2 研究人群

The study population is derived from the identification of all health care personnel who have worked in a health care facility where there is a laboratory confirmed 2019-nCoV infected patient receiving care. Every effort should be made to include all identified health care workers who have worked at any point during the time that the laboratory confirmed 2019-nCoV infected patient has been in the health care facility.

研究人群来自于接诊和治疗实验室确诊的 2019-nCoV 确诊病例的医疗卫生机构中的所有医务工作者。应尽一切努力识别并纳入在该患者处于该医疗卫生机构期间内的所有医务工作者。

COMMENT: It is likely that a patient will have moved around several areas of a health care facility – e.g. admission at Emergency Room, transported to radiology, moved to a ward. Every effort should be made to include all health care workers (see below) who have been in the same area as the patient as he/she moved through the health care facility.

备注：患者很可能在医疗机构内的多个区域内进行过活动，例如在急诊室入院、转移到放射科、病房等。应尽力识别并纳入该医疗机构中所有与患者在同一时间、同一区域的所有医务工作者（见下文）。

For the purpose of this investigation, health care worker should not be too restrictive so that a large number of potentially exposed health care workers are included in the study. For this reason, health care worker should be defined as all staff in the health care facility involved in the provision of care for a 2019-nCoV infected patient, including those who have been present in the same area as the patient, as well as those who may not have provided direct care to the patient, but who have had contact with the patient’ s body fluids, potentially contaminated items or environmental surfaces. This includes health care professionals, allied health workers, auxiliary health workers (e.g. cleaning and laundry personnel, x-ray physicians and technicians, clerks, phlebotomists,

就研究目的而言，医务工作者的定义不应过于局限，以便将大量可能有暴露史的工作人员纳入研究范围。因此，医务工作者应定义为医疗卫生机构中为 2019-nCoV 感染患者提供照护的所有人员，包括与患者在同一区域的人员，以及可能未直接为患者提供护理但接触过病人的体液、可能被污染的物品或环境表面的人员。包括专业医务工作者、相关卫生工作者、辅助卫生工作者（例如清洁和洗衣人员、放射科医师和技术人员、实习生、抽血者、呼吸治疗师、营养师、社会工作者、理疗师、实验室人员、清洁工、入院接待员、病人运送人员、餐饮人员等）。

respiratory therapist, nutritionists, social workers, physical therapists, lab personnel, cleaners, admission/reception clerks, patient transporters, catering staff etc.).

Once a case of 2019-nCoV infection has been identified in a health care facility, a list of all health care workers with any exposure to 2019-nCoV patient will need to be drawn up (see Considerations for identifying health care workers in Appendix 1). This should be done in consultation with supervisors and colleagues, duty rosters and possibly the medical file of the patient to understand all the areas of the health care facility the patient has visited and to ensure all health care workers can be identified and recruited into the study.

一旦在医疗机构中发现 2019-nCoV 感染病例，则需要列出暴露接触过该患者的所有医务工作者名单（见附录 1.确定医务工作者的注意事项）。这项工作应参考和咨询上级主管、同事、值班人员和可能的患者个人医疗档案，以便了解该患者访问过的所有医疗区域，并确保所有与之有接触的医务工作者都能被识别并纳入到研究中。

COMMENT: This protocol is designed to assess risk factors for infection among health care workers with potential exposure to 2019-nCoV. It does not include visitors to the health care facility who may have had contact with a 2019-nCoV infected patient or the patient’s material.

备注：该方案旨在评估可能接触 2019-nCoV 的医务工作者感染的危险因素，因此那些可能接触过 2019-nCoV 感染患者或其物品的其他患者或家属不纳入研究。

COMMENT: For the purposes of comparability between investigations, it is important that health care worker encounters are defined clearly in terms of type and duration of potential exposure in any reporting on the investigation.

备注：为了使研究之间具有可比性，在任何研究报告中，明确界定医务人员的接触类型和潜在暴露的持续时间是非常重要的。

2.3 纳入标准

Inclusion criteria: All health care workers with any potential exposure to a 2019-nCoV infected patient within a health care facility, including exposure to the patient’s blood and body fluids, and to contaminated materials or devices and equipment linked to the patient.

入组标准 在医疗机构内，所有与 2019-nCoV 感染患者有潜在接触的医务工作者，包括暴露于患者的血液和体液者，以及接触与患者有关的受污染材料或设备的人员。

Exclusion criteria: Health care workers who work in another health care facility, particularly those that work

排除标准：同时在另一家医疗卫生机构工作的医务工作者，特别是其工作的机

in a health care facility which has recently experienced/is experiencing widespread nosocomial transmission; health care workers who have a confirmed 2019-nCoV case among his/her household/close contacts.

构在最近出现或正在出现广泛院内感染的医疗卫生机构的医务工作者；在其家庭/密切接触的人中有 2019-nCoV 确诊病例的医务工作者。

COMMENT: The concept of "protected exposure" will be evaluated as part of this study. As such, wearing personal protective equipment (PPE) should not be considered an exclusion criterion, as one of the risk factors to be studied is use of appropriate PPE.

备注："受保护的暴露"的概念将作为本研究的一部分进行评估。因此，佩戴个人防护装备（PPE）不应被视为排除标准，因为需要研究的风险因素之一是使用适当的个人防护装备。

Equally, symptomatic health care workers should also not be excluded from the study. In the event that a symptomatic health care worker is too ill to be interviewed, the investigators should consider whether a proxy (colleague or supervisor) may be able to be complete the questionnaire on his/her behalf.

同样，有症状的医务工作者也不应被排除在研究之外。如果其病得太重，无法接受调查，调查人员应考虑代理人（同事或主管）是否能够代表他/她完成调查问卷。

2.4 数据收集

All health care workers recruited into the study will need to complete a questionnaire which covers demographic information, contact and possible exposure with the 2019-nCoV infected patient since he/she has been admitted to the health care facility and infection prevention and control measures. A questionnaire can be found in Appendix 1 of this document. These forms are not exhaustive, but outline the data collection required for insight into the epidemiology of 2019-nCoV and may be updated further. This protocol and questionnaire will still need to be adapted based on the local setting, and outbreak characteristics.

所有纳入研究的医务工作者都需填写一份问卷，其中包括人口信息、联系方式和 2019-nCoV 感染患者入院来的可能暴露情况，以及所采取的感染预防和控制措施。调查问卷见本文件附录 1。这些表格并非详尽无遗，但概述了需深入了解 2019-nCoV 流行病学所需的数据，并可能作进一步更新。该方案和调查问卷仍需根据当地环境和疫情特点进行调整。

2.5 样本采集

COMMENT: The following is intended to guide minimum specimen collection from all health care workers. Depending on how long after the identification of the 2019-nCoV infection in the health care facility the study is conducted, the study investigators may also want to consider including respiratory samples for molecular testing to detect acute 2019-nCoV infection, and/or serial respiratory sampling. Please note that appropriate PPE needs to be worn by study investigators for the collection of any specimen (see 2.8.5 Prevention of 2019-nCoV infection in investigation personnel).

备注：以下内容旨在指导针对入组医务工作者的采集最少样本。根据从医疗卫生机构确认发现 2019-nCoV 感染者到本研究开始实施的时间间隔，调查人员可考虑将呼吸道样本纳入分子检测，以检测急性 2019-nCoV 感染，和/或进行连续呼吸道采样。应注意，研究人员在采集标本时需要佩戴适当的个人防护用品（见 2.8.5 研究人员 2019-nCoV 感染的预防）。

A baseline serum sample should be collected from all health care workers, as soon as possible after confirmation of a 2019-nCoV infected patient in the health care facility.

在医疗卫生机构确诊 2019-nCoV 感染患者后，应尽快采集所有医务工作者基线血清样品。

A second serum sample will need to be collected from the same health care workers at least 21 days after the collection of the first serum sample. These paired serological samples will allow for confirmation of seroconversion, and are useful to better understand the secondary-infection attack rate and the proportion of infections that are asymptomatic. These paired samples should be taken from all identified health care worker contacts, regardless of symptoms.

同一医务人员的第一份血清样品采集后至少间隔 21 天应采集第二份血清标本。这些配对的血清样品将有助于确认血清转换，并有助于更好地了解继发感染的罹患率和无症状感染者的比例。无论症状如何，这些配对的样品都应取自所有已识别的有接触史的医务工作者。

表 1：有接触史医务工作者的数据和样本采集时间表

入组后天数	0（±1）	…		…	>21
进入卫生机构收集数据					
血清样本					
其它，例如连续呼吸样本	（可选：基于疫情/资源）				

图例：

蓝框表示研究的必要步骤

绿框表示在本研究最低样本要求基础上可收集的额外样本，以增加可用信息。可包括用于分子检测

的呼吸道样本，以捕获 2019-nCoV 急性感染，无论症状如何。

2.6 使用 Go.Data 工具（选用）

Go.Data is software which has been designed to be used by WHO, Member states and partners to support and facilitate outbreak investigation including field data collection, contact tracing and visualization of chains of transmission. The tool includes functionality for case and contact data collection, contact follow-up and visualization of chains of transmission. It has 2 components: a web application and an optional mobile app. The tool is targeted at any outbreak responders, including WHO staff, staff from Ministry of Health and partner institutions.

Key features of the Go.Data software include:

- Users with appropriate rights can configure case investigation form, contact follow-up form and lab data collection form.
- Outbreak templates are included for easier creation of outbreak data collection forms.
- Open source and free for use with no licensing costs.
- Go.Data offers different types of operation (server or stand-alone) on different platforms (Windows, Linux, Mac).
- Allows for case and contact data collection, including lab data.
- Generates contact follow-up list and visualizes chains of transmission.
- It provides multi-lingual support, with possibility to add additional languages though user interface.
- Go.Data is not build for a specific disease or specific country, it is highly configurable, with configurable reference and location data.

Go.Data 是世卫组织、成员国和合作伙伴为支持和促进疫情调查而设计的软件，包括现场数据收集、联系追踪和传播链可视化功能。该工具包括病例和接触者数据收集、接触随访跟踪和传播链可视化的功能。它有两个组件：一个网页应用程序和一个可选的手机应用程序。该工具的目标用户为任何疫情应对者，包括世卫组织工作人员、卫生部工作人员和伙伴机构。

Go.Data 软件的主要特点包括：

- 根据权限，用户可以设置病例调查表、密切接触者随访表和实验室数据收集表。
- 包括暴发疫情模块，以便于创建暴发疫情数据收集表格。
- 开放源代码，免费使用，无需许可费用。
- Go.Data 在不同平台（Windows、Linux、Mac）上提供不同类型的操作（服务器或单机版）。
- 允许收集病例和接触者数据，包括实验室数据。
- 生成接触者随访列表并可视化传播链。
- 提供多种语言支持，可以通过用户界面添加其他语言。
- Go.Data 不针对特定疾病或特定国家，它具有高度的可配置性，具有可配置的参考数据和定位数据。
- 安装一次 Go.Data 可用于多次暴

- One Go.Data installation can be used to collect data for many outbreaks.
- Granular user roles and permissions, including possibility to provide user access at outbreak level
- Has optional mobile app (Android and iOS) focused on contact tracing and possibility to register cases and contacts.

Contact: godata@who.int

WHO Go.Data website

- 一个 Go.Data 安装可用于收集多个疫情的数据。
- 详细的用户角色和权限，包括在疫情级别提供用户访问的可能性
- 具有可选的移动应用程序（Android 和 iOS），专注于接触者跟踪随访和登记病例和接触者的可能性。

2.7 标本运输

All those involved in collection and transporting specimens should be trained in safe handling practices and spill decontamination procedures. For details regarding the transport of samples collected and infection control advice, please refer to case management algorithm and laboratory guidance in the country or WHO laboratory guidance, available on the WHO website.

所有参与标本采集和运输的人员均应接受安全操作规范和溢出物净化程序的培训。有关样品运输的详细信息和感染控制建议，请参阅本国的病例管理细则和实验室指南或世界卫生组织网站上提供的 WHO 实验室指南。

For each biological sample collected, the time of collection, the conditions for transportation and the time of arrival at the study laboratory will be recorded. Specimens should reach the laboratory as soon as possible after collection. If the specimen is not likely to reach the laboratory within 72 hours, specimens should be frozen, preferably at -80°C, and shipped on dry ice. It is, however, important to avoid repeated freezing and thawing of specimens. The storage of serum specimens in domestic frost-free freezers should be avoided, owing to their wide temperature fluctuations. Serum should be separated from whole blood and can be stored and shipped at 4°C or frozen to -20°C or lower and shipped on dry ice.

对于采集的每个生物样品，都应记录收集时间，运输条件和到达研究实验室的时间。 标本应在采集后尽快送达实验室。 如果标本在 72 小时内不能送达实验室 ,则应将标本冷冻 ,最好在-80°C 环境冻存，并用干冰运输。然而，重要的是要避免样品反复冻融。 由于温度波动较大，应避免将血清标本保存在家用无霜冰箱中。 全血标本应分离血清 ,在 4°C 或-20°C 储存和运输，或在更低温度中冻存并用干冰运输。

Transport of specimens within national borders should comply with applicable national regulations.

在国境内运输标本应符合适用的国家条例。国际样品运输应遵守《2013-

International transport of specimens should follow applicable international regulations as described in the WHO Guidance on Regulations for the Transport of Infectious Substances 2013- 2014.

2014 世界卫生组织传染性物质的运输规定指南》

2.8 伦理考量

Ethical requirements will vary by country. In some countries, this investigation may fall under public health surveillance (emergency response) acts and may not require ethical approval from an Institutional Review Board.

伦理要求因地而异。在某些国家/地区，此调查可能属于公共卫生监测法（应急响应）的范围，而无需伦理审查委员会的伦理批准。

2.8.1 知情同意

The purpose of the investigation will be explained to all known health care worker contacts of a confirmed 2019-nCoV infected patient. Informed consent will be obtained from all health care worker contacts willing to participate in the investigation before any procedure is performed as part of the investigation by a trained member of the investigation team. Each participant must be informed that participation in the investigation is voluntary and that s/he is free to withdraw, without justification, from the investigation at any time without consequences and without affecting professional responsibilities.

应向已知有 2019-nCoV 患者接触史的医务工作者解释调查目的。得到所有愿意参与调查的医务工作者的知情同意后，方可由应由经过培训的研究小组成员开始调查。必须告知每位参与者该研究是自愿参加的 ,他/她可以在任何时候无理由地自由退出调查，而不产生任何后果，也不影响专业责任。

COMMENT: The age of consent may vary by country. Check the requirements of local, regional or national authorities.

备注：知情同意的年龄可能因国家而异。查阅当地、地区或该国的要求。

Informed consent will seek approval to collect blood samples and epidemiological data for the intended purpose of this investigation, that samples may be shipped outside of the country for additional testing and that samples may be used for future research purposes.

知情同意要允许本研究为达到预期目标需要采集血液样品和收集流行病学数据，并且样品有可能会运往国外进行额外检测，且样本有可能用于未来研究。

2.8.2 参与者的风险和收益

This investigation poses minimal risk to participants, involving the collection of a small amount of blood. The direct benefit to the participant is the ability to detect 2019-nCoV infection which would allow for appropriate monitoring and treatment. The primary benefit of the study is indirect in that data collected will help improve and guide efforts to understand transmission of 2019-nCoV and prevent further spread of 2019-nCoV.

这项研究对参与者的风险很小，仅涉及少量血液的采集。对参与者的直接收益是能够检测 2019-nCoV 感染，这将使参与者可得到适当的监测和治疗。该研究的主要收益对参与者而言是间接的，研究所收集的数据将有助于改进和指导人们了解 2019-nCoV 传播情况并防止 2019-nCoV 的进一步传播。

2.8.3 保密性

Participant confidentiality will be maintained throughout the investigation, especially exposure of health care workers to 2019-nCoV. All subjects who participate in the investigation will be assigned a study identification number by the investigation team for the labelling of questionnaires and clinical specimens. The link of this identification number to individuals will be maintained by the investigation team and the Ministry of Health (or equivalent) and will not be disclosed elsewhere.

在整个调查过程中，参与者的隐私将得到保护，尤其是医务工作者暴露于 2019-nCoV 的情况。所有参与调查的受试者将由调查组分配一个研究识别号，用于标记问卷和临床样本。该识别码与个人的链接将由研究团队和卫生部（或等效部门）维护，而不会在其他地方披露。

If the data is shared by the implementing organization to WHO or any agency or institution providing support for data analysis, data shared will include only the study identification number and not any personably identifiable information.

如果研究者将数据共享给世卫组织或任何为数据分析提供支持的机构，则共享的数据将仅包括研究标识号，而不包括任何可用于识别个人的信息。

Article 45 of the IHR (2005) describes the "treatment of personal data".2 Person identifiable data collected under the IHR should be kept confidential and processed anonymously, as required by national law. However, such data may be disclosed for assessments

《国际卫生条例（2005）》第 45 条描述了"个人数据的处理"[2]。根据《国际卫生条例》收集的可识别个人身份的数据应予以保密，并应按照国家法律的要求进行匿名处理。但是，如数据得到公

[2] https://www.who.int/ihr/publications/9789241580496/en/

and management of public health risks, provided the data are processed fairly and lawfully.

平合法的处理，则可以公开用于评估和管理公共卫生风险。

2.8.4 Go.Data 使用条款

If groups implementing the investigation opt to use open-source Go.Data as a tool to run this investigation, the Go.Data server can be hosted either on a server within the country or at WHO. The group implementing the study will need to consider the best approach for the investigation setting. If the Go.Data server is to be based at WHO, access to the Go.Data application on this server will be restricted to users who have valid login credentials for the Go.Data application.

如果研究小组选择使用开源 Go.Data 作为实施研究的工具 ,则 Go.Data 服务器可以托管在该国家或世界卫生组织的服务器上。实施研究的小组将需要考虑最佳的调查方法。如果 Go.Data 服务器位于世界卫生组织服务器上，则对此服务器上 Go.Data 应用程序的访问权限将限制为具有 Go.Data 应用程序的有效登录凭据的用户。

2.8.5 预防研究人员感染

All personnel involved in the investigation need to be trained in infection prevention and control procedures (standard contact, droplet, contact and airborne precautions, as determined by national or local guidelines). These procedures should include proper hand hygiene and the correct use of medical or respiratory face masks, if necessary, not only to minimize their own risk of infection when in close contact with health care workers who have had potential exposure to a 2019-nCoV infected patient, but also to minimize the risk of spread among health care worker contacts of a 2019-nCoV infected patient.

所有参与的研究人员都需要接受感染预防和控制程序的培训（由国家或地方准则确定的标准接触、飞沫接触和空气传播预防措施）。这些程序应包括适当的手卫生以及必要时正确使用医疗或呼吸面罩，这不仅可在与有 2019-nCoV 潜在暴露史的医务工作者接触后，将自身感染的风险降至最低，而且还可最大程度地减少在医务工作者中传播 2019-nCoV 的风险。

WHO technical guidance on infection prevention and control specific to 2019-nCoV can be found on the WHO website.

世卫组织针对 2019-nCoV 的感染预防和控制技术指南可在世卫网站中获得

3 实验室评估

Laboratory guidance for 2019-nCoV can be found on the WHO website.
Several assays that detect 2019-nCoV have been recently developed and the protocols or SOPs can also be found on the WHO website.

关于 2019-nCoV 的实验室指南可在世卫组织网站上找到。
最近已经开发了几种检测 2019-nCoV 的检测方法，实验方案或标准操作程序也可以在世卫组织网站上找到。

4 统计分析

4.1 样本量

This investigation is intended to be implemented to provide information on the extent of 2019-nCoV infection among health care workers and on possible risk factors for infection. Larger studies will undoubtedly permit more robust analysis of potential factors affecting the secondary infection risk and more detailed characterization of serologic responses following infection.

本调查旨在提供关于医疗卫生工作者中 2019-nCoV 感染程度和感染的可能危险因素信息。更大的研究无疑将允许对影响继发性感染风险的潜在因素进行更可靠的分析，并对感染后的血清学应答进行更详细的描述

4.2 流行病学参数

The table below provides an overview of the epidemiological parameters that can be measured as part of this investigation.

下表概述了可作为本次调查一部分进行测量的流行病学参数

参数	定义 (括号内:it 的“简化”表达)	表格和问题从哪里获得数据来计算 相关参数	评论、限制
二次感染率(也称为二次感染发生率)	在确定的时间内，在确诊 2019-nCoV 的卫生	表格 3	*分子将被确定为被确认患有 2019nCoV 感染的卫生保健工作者的人

	保健工作者接触者中频率的测量 (接触者之间的感染率。通过配对样品的血清学试验推断)		数，而分母将被确定为登记为病例联系人的卫生保健工作者的总人数。 *表示在规定的时间内与医护人员接触的总体感染风险。
对感染的血清学反应	血清中 2019nCoV 特异性抗体水平的变化 (滴定度增加)	表格 3	*这只能通过添加实验室数据来计算 *将补充临床研究和最初几项暴发研究的结果，以确认预期感染后血清转换
与最高感染风险相关的接触类型	确定最易受 2019-nCoV 感染的群体(如年龄组、性别、职业)	表格 1: Q6 表格 2: Q10	*可能只是早期信号，需要使用其他信息来源来为决策提供信息(病例行列表和其他临床病例系列) *这项研究可能存在偏见，因为我们的招募是基于被发现并确认具有 2019-nCoV，而寻求医疗服务的行为可能在不同人群中有所不同

5 研究结果报告

5.1 报告

Any investigation of this nature should include reporting on the following information:
(1) the number of laboratory confirmed cases of 2019-nCoV infection, the number of health care workers

任何此类性质的调查都应包括以下信息的报告:
（1）实验室确认的 2019-nCoV 确诊病例数量、确定的卫生保健工作者的数量，以及研究纳入的人数和他们在医疗

identified and, of those, the number enrolled and types of roles they have in the health care facility;	卫生机构中的角色类型；
(2) the number of household contacts with serologic evidence of 2019-nCoV infection. If sample size permits, these numbers should be stratified by age, role within the hospital and possible type of exposure (direct care, environmental exposure etc);	（2)有 2019-nCoV 感染血清学证据的家庭接触人数。如果样本量允许，应根据年龄、在医院中的角色和可能的暴露类型(直接护理、环境暴露等)进行分层。
COMMENT: If molecular testing is included as part of this study, it would be important to report the number of health care workers with acute 2019-nCoV infection, and of these, the characterisation of illness.	备注:如果分子检测作为本研究的一部分，报告 2019-nCoV 急性感染医护人员的数量以及这部分人员的疾病特征是很重要的。
It is also important to fully document the study design, including the definition of the health care facility and health care worker, the approach to identification of health care workers possibly exposed to 2019-nCoV infected patient, the duration between collection of serum samples, and the laboratory methods used to ensure that data can be pooled to increase power in estimating epidemiological parameters.	充分记录研究设计也很重要，包括医疗卫生机构和医务工作者的定义、识别医疗卫生人员可能暴露于 2019-nCoV 感染患者的方法、血清样本采集的时间间隔，以及为了提高流行病学参数估计效力而确保数据可以汇总分析的实验室检测方法。
Ideally, information would be collected in a standardized format according to the questionnaires and tools in this generic protocol to assist with data harmonization and comparison of results (see forms in Appendix A).	理想情况下，将根据本通用方案中的问卷和工具，以标准化格式收集信息，从而有助于数据一致性和结果的可比性(表格见附录 A 中)。
If the data is shared by the implementing organization to WHO or any agency or institution providing support for data analysis, data shared will include only the study identification number and not any personably identifiable information.	如果实施机构将数据共享给世卫组织或为数据分析提供支持的任何机构或组织，共享的数据将仅包括研究标识号，而不包括任何可识别个人身份的信息。

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6.1 有关新型冠状病毒的更多参考资料

WHO Disease Outbreak News
https://www.who.int/csr/don/en/

Surveillance and case definitions
https://www.who.int/publications-detail/global-surveillance-for-human-infection-with-novel-coronavirus-(2019-ncov)

Laboratory guidance
https://www.who.int/health-topics/coronavirus/laboratory-diagnostics-for-novel-coronavirus
Clinical management
https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-(ncov)-infection-is-suspected

Infection prevention and control
https://www.who.int/publications-detail/infection-prevention-and-control-during-health-

care-when-novel-coronavirus-(ncov)-infection-is-suspected

Risk communications
https://www.who.int/publications-detail/risk-communication-and-community-engagement-readiness-and-initial-response-for-novel-coronaviruses-(-ncov)

7 致谢

This generic protocol was adapted from the protocol entitled "Assessment of potential risk factors of Middle East respiratory syndrome coronavirus (MERS-CoV) infection among health care personnel in a health care setting" by WHO and "Prospective Study of household transmission of Influenza" by the Consortium for the Standardisation for Influenza Seroepidemiology (CONSISE). CONSISE is a global partnership aiming to develop influenza investigation protocols and standardise seroepidemiology to inform public health policy for pandemic, zoonotic and seasonal influenza. This international partnership was created out of a need, identified during the 2009 H1N1 pandemic, for better (standardised, validated) seroepidemiological data to estimate infection attack rates and severity of the pandemic virus and to inform policy decisions.

该通用方案改编自世界卫生组织的"在卫生保健机构中对卫生保健人员感染中东呼吸综合征冠状病毒的潜在危险因素的评估"和流感血清流行病学标准化联盟的"流感家庭传播的前瞻性研究"。CONSISE 是一个全球合作伙伴，旨在制定流感调查方案和标准化血清流行病学，为大流行、人畜共患和季节性流感的公共卫生政策提供信息。这种国际伙伴关系是在 2009 年 H1N1 大流行期间确定的一种需求基础上建立的，即需要更好的(标准化的、经过验证的)血清流行病学数据来估计大流行病毒的感染率和严重程度，并为政策决策提供信息。

Many people were involved in the creation and revision of this protocol. These include: Maria D Van Kerkhove, Amgad Elkholy, Mamun Malik, Rebecca Grant, Anthony W Mounts, Sergey Eremin, Cota Vallenas, Julia Fitzner, Isabel Bergeri, Kaat Vandemaele, Ann Moen, Wenqing Zhang, Aspen Hammond, Julia Fitzner, April Baller, Maria Clara Padoveze, Anne Perrocheau, Yuka Jinnai, Stéphane Huggonnet, Oliver Morgan, Sooyoung Kim, Adrian Marcato.

Outside WHO, a large number of extra non-WHO individuals were involved in influenza protocols as part of the WHO expert working Group on Pandemic Influenza Special Investigation Studies (by alphabetical order). These include: Silke Buda (RK Institute,

Germany), Cheryl Cohen (MoH South Africa), Ben Cowling (Hong Kong University, Jeffery Cutter (MoH Singapore), Vernon Lee (MoH Singapore), Rodrigo Fasce (NIC Chile), Gail Carson (GOARN operational support team), Jean-Michel Heraud (Institut Pasteur de Madagascar), Peter Horby (ISARIC, United Kingdom), Sue Huang (NIC, Institute of Environmental Science and Research, New Zealand), Arunkumar Govindakarnavar (Manipal Institute of Virology Manipal, Academy of Higher Education), Bryan Kim (WHO GOARN operational support team, Switzerland), Vernon Lee (MoH Singapore), Adrian Marcato (University of Melbourne, Australia), Jodie McVernon (Peter Doherty Institute, Australia), Richard Pebody (Public Health England, United Kingdom), Melissa Rolf (US CDC), Hassan Zaraket (American University of Beirut, Lebanon), Lei Zhou (China CDC), John Watson (US CDC), Tim Uyeki, John Wood, Othmar Engelhardt, Jeffery Cutter, Salah Al Awaidi, Susan I Gerber, Pasi Penttinen, Julien Baute and Elizabeth Bancroft.

附录

Assessment of potential risk factors for 2019-novel coronavirus infection among health care workers in a health care setting	**医疗机构医务人员 2019 年新型冠状病毒感染的潜在危险因素评估方案**
Considerations for identifying all health care workers with possible exposure to 2019-nCoV infected patient while the patient has received care within the health care facility	**当患者在医疗机构接受治疗时，识别所有可能暴露于 2019-nCoV 感染患者的医护人员的注意事项**
Before the study begins, all health care workers with possible exposure through working in close proximity to the 2019-nCoV infected patient need to be identified. This needs to begin with a consultation of the patient' s medical file and health records to establish the date of admission and the periods of time spent in each area of the health care facility based on the patient' s movements within the health care facility since admission.	在研究开始之前，需要确认所有可能通过近距离接触 2019-nCoV 感染患者而暴露的医护人员。这需要从查阅患者的医疗档案和健康记录开始，根据患者入院后在医疗机构内的活动情况，确定入院日期和在医疗机构各区域的停留时间。
For every area of the health care facility that the patient has visited since admission, all staff with exposure to the patient care area irrespective of direct contact with the patient) need to be identified and included in the study.	对于患者入院后参观过的医疗机构的每一个区域，所有接触患者护理区域的工作人员(无论是否与患者直接接触)都需要被识别并纳入研究。
Please note, **health care worker** should be defined as all staff in the health care facility involved in the provision of care for a 2019-nCoV infected patient, including those who have been present in the same area as the patient, as well as those who may not have provided direct care to the patient, but who have had contact with the patient' s body fluids, potentially contaminated items or environmental surfaces. This includes health care professionals, allied health workers, auxiliary health workers (e.g. cleaning and laundry personnel, x-ray physicians and technicians, clerks, phlebotomists, respiratory therapist, nutritionists, social workers, physical therapists, lab	请注意，**医务工作者**应定义为医疗卫生机构中参与为 2019-nCoV 感染患者提供护理的所有工作人员，包括与患者在同一区域的人员，以及可能没有为患者提供直接护理但接触过患者体液、潜在污染物品或环境表面的人员。这包括卫生保健专业人员、相关卫生工作者、辅助卫生工作者(如清洁和洗衣人员、x 光医生和技术人员、办事员、抽血医生、呼吸治疗师、营养学家、社会工作者、物理治疗师、实验室人员、清洁工、入院/接待办事员、病人运送人员、餐饮人员等)。

personnel, cleaners, admission/reception clerks, patient transporters, catering staff etc.).

在医疗机构中评估 2019 年新型冠状病毒感染的潜在风险因素

表格 1：医护人员报告表（第 1 天）

唯一的医护人员ID	
2019-nCoV患者ID	

1.现状	□ 存活 □ 已死亡

2.数据收集者信息	
数据收集者姓名	
数据收集者所在机构	
数据收集者电话号码	
手机号码	
邮箱	
填表日期 (DD/MM/YYYY)	(DD/MM/YYYY)___/___/___
采访日期(DD/MM/YYYY)	(DD/MM/YYYY)___/___/___

3.联系人信息	
名	
姓	
性别	□ 男 □ 女 □ 不详
出生日期 (DD/MM/YYYY)	(DD/MM/YYYY)___/___/___
电话(手机)号码	
年龄(岁，月)	

邮箱	
国家身份证号码/唯一识别编号(如果有)	
居住国家	
国籍	
种族(可选)	
吸烟？	□ 是 □ 否
在卫生保健机构的职业	□ 医生 □ 注册护士(或同等职业) □ 助理护士、护理技师(或同等职业) □ 放射科/ X射线技术员 □ 采血护士 □ 理疗师 □ 营养学家/营养师 □ 其他卫生保健提供者 □ 实验室人员 □ 入院/接待处文职人员 □ 病人转运车司机 □ 餐饮人员 □ 清洁工

4.遵守感染预防和控制措施信息	
您最近在医疗机构进行的IPC培训是什么日期？(DD/MM/YYYY)	DD/MM/YYYY
您在此医疗机构接受了多长时间的IPC累积培训(标准预防措施，其他预防措施)？	□ 不足2小时 □ 超过2小时
您是否遵循建议的手部卫生习惯？	□ 总是遵循建议 □ 大多时候 □ 偶尔

	□ 很少
在接触患者之前，您是否使用过酒精消毒手或者用肥皂和水洗手？	□ 总是遵循建议 □ 大多时候 □ 偶尔 □ 很少
在清洁/无菌程序之前，您是否使用过酒精消毒手或者用肥皂和水洗手？	□ 总是遵循建议 □ 大多时候 □ 偶尔 □ 很少
在体液暴露（有风险）后，您是否使用过酒精消毒手或者用肥皂和水洗手？	□ 总是遵循建议 □ 大多时候 □ 偶尔 □ 很少
接触患者后，您是否使用过酒精消毒手或者用肥皂和水洗手？	□ 总是遵循建议 □ 大多时候 □ 偶尔 □ 很少
接触患者周围的环境后，您是否使用过酒精消毒手或者用肥皂和水洗手？	□ 总是遵循建议 □ 大多时候 □ 偶尔 □ 很少
与任何患者接触时，您是否遵循IPC标准预防措施？	□ 总是遵循建议 □ 大多时候 □ 偶尔 □ 很少 □ 我不知道IPC标准预防措施是什么
有指征时您是否穿着个人防护装备(PPE)？ (PPE包括：医用口罩，面罩，手套，护目镜/眼镜，工作服，头罩，呼吸器(例如N95或同等装备)，鞋套)	□ 始终根据风险评估去做 □ 大多数时候根据风险评估去做 □ 偶尔 □ 很少
医疗机构中是否有足够数量的PPE？	□ 是 □ 否 □ 不详

5.对2019-nCoV感染患者的暴露	
2019-nCoV确诊患者的入院日期	DD/MM/YYYY:

(DD/MM/YYYY)	
自患者入院以来，您是否与患者保持密切接触（1 米以内）？	□ 是 □ 否 □ 不详
-如果是，请问总共有几次？	
-如果是，每次要持续多长时间？	□ <5 分钟 □ 5-15分钟 □ >15分钟
如果是，您是否延长了面对面的接触时间（> 15分钟）？	□ 是 □ 否 □ 不详 如果是，你是否穿戴了PPE? □ 是 □ 否 □ 不详 如果是，你穿戴了什么？
	勾选所有适用项: □ 医用口罩 □ 面罩 □ 手套 □ 护目镜/眼镜 □ 白大褂 □ 工作服 □ 头套 □ 防毒面具（例如N95或同等品） □ 鞋套
-如果您戴着医用口罩，是什么类型：	
-如果您戴了口罩，它是否通过了测试？	□ 是 □ 否 □ 不详
-如果您戴着手套，在与患者接触后是否摘下了手套？	□ 是 □ 否
-如果是，您在与患者接触之前是否进行过手部清洁？	□ 总是遵循建议 □ 大多时候 □ 偶尔 □ 很少
	如果是: □ 用的酒精手消毒液 □ 用香皂和水洗手 □ 用水洗手

-如果是，您在与患者接触后是否进行过手部清洁？	□ 总是遵循建议 □ 大多时候 □ 偶尔 □ 很少
	如果是: □ 用的酒精手消毒液 □ 用香皂和水洗手 □ 用水洗手
-如果是，您是否参加了对患者进行的任何雾化程序？	□ 是 □ 否 □ 不详
	如果是，请描述该过程：
	如果是，你是否穿戴了PPE? □ 是 □ 否 □ 不详
	如果是，你穿戴了什么？ 勾选所有适用项: □ 医用口罩 □ 面罩 □ 手套 □ 护目镜/眼镜 □ 白大褂 □ 工作服 □ 头套 □ 防毒面具（例如N95或同等品） □ 鞋套
-如果是，您是否接触过患者的体液？	□ 是 □ 否 □ 不详 如果是，哪些体液：
	如果是，你是否穿戴了PPE? □ 是 □ 否 □ 不详 如果是，你穿戴了什么？ 勾选所有适用项: □ 医用口罩 □ 面罩 □ 手套 □ 护目镜/眼镜 □ 白大褂 □ 工作服 □ 头套 □ 防毒面具（例如N95或同等品） □ 鞋套
自患者入院以来，您是否直接与其接触？	□ 是 □ 否 □ 不详

患者的材料：患者可能接触过的个人物品、布料和医疗设备	
-如果是，接触了哪种材料？	勾选所有适用项： □衣服 □个人物品 □布料 □病人使用的医疗器械 □与患者连接的医疗设备（例如呼吸机，输液泵等） □其他：
-如果是，自他/她入院后以来共有几次？	
-如果是，您是否通过接触患者的材料而接触了患者的体液？	□ 是 □ 否 □ 不详 如果是，哪些体液: 如果是，你是否穿戴了PPE? □ 是 □ 否 □ 不详 如果是，你穿戴了什么？ 勾选所有适用项: □ 医用口罩 □ 面罩 □ 手套 □ 护目镜/眼镜 □ 白大褂 □ 工作服 □ 头套 □ 防毒面具（例如N95或同等品） □ 鞋套
-如果是，您在接触患者的材料之前是否进行过手部清洁？	□ 总是遵循建议 □ 大多时候 □ 偶尔 □ 很少 如果是: □ 用的酒精手消毒液 □ 用香皂和水洗手 □ 用水洗手

-如果您戴着手套，在与患者接触后是否摘下了手套？	□ 是 □ 否
-如果是，您在接触患者的材料后是否进行手部清洁？	□ 总是遵循建议 □ 大多时候 □ 偶尔 □ 很少
	如果是: □ 用的酒精手消毒液 □ 用香皂和水洗手 □ 用水洗手
您是否直接接触患者周围的表面？	□ 是 □ 否 □ 不详
-如果是，何种表面？	勾选所有适用项： □床 □浴室 □病房走廊 □病床 □床头柜 □餐桌 □医用气体面板 □其他：
-自从他/她入院以来共计几次？	
-如果是，您是否通过患者周围的表面接触了患者的体液？	□ 是 □ 否 □ 不详 如果是，哪些体液:

	如果是，你是否穿戴了PPE? □ 是 □ 否 □ 不详 如果是，你穿戴了什么？ 勾选所有适用项: □ 医用口罩 □ 面罩 □ 手套 □ 护目镜/眼镜 □ 白大褂 □ 工作服 □ 头套 □ 防毒面具（例如N95或同等品） □ 鞋套
	□
	□
	□
-如果是，您在接触这些表面后是否进行手部清洁？	□ 是 □ 否 □ 不详
	如果是: □ 用的酒精手消毒液 □ 用香皂和水洗手 □ 用水洗手

6a. 卫生保健工作者的症状	
自患者入院以来，您是否经历过呼吸道症状（咽痛， 咳嗽，流鼻涕，呼吸急促）？	□ 是 □ 否 如果否，请跳至5c
首次症状发作的日期(DD/MM/YYYY)	(DD/MM/YYYY) / / □无症状 □ 不详

发烧（≥38°C）或发烧史	□ 是 □ 否 □ 不详 如果是，请填最高温度：
6b. 呼吸道症状	
咽喉痛	□ 是 □ 否 □ 不详 如果是，时间 (DD/MM/YYYY):_____/__/___
咳嗽	□ 是 □ 否 □ 不详 如果是，时间 (DD/MM/YYYY): / /
流鼻涕	□ 是 □ 否 □ 不详
呼吸急促	□ 是 □ 否 □ 不详 如果是，时间 (DD/MM/YYYY):_____/__/___
6c. 其他症状	
畏寒	□ 是 □ 否 □ 不详
呕吐	□ 是 □ 否 □ 不详
恶心	□ 是 □ 否 □ 不详
腹泻	□ 是 □ 否 □ 不详
头痛	□ 是 □ 否 □ 不详
皮疹	□ 是 □ 否 □ 不详
结膜炎	□ 是 □ 否 □ 不详
肌肉疼痛	□ 是 □ 否 □ 不详
关节疼痛	□ 是 □ 否 □ 不详

食欲不振	□ 是 □ 否 □ 不详
鼻出血	□ 是 □ 否 □ 不详
疲劳	□ 是 □ 否 □ 不详
全身无力	□ 是 □ 否 □ 不详
其他症状	□ 是 □ 否 □ 不详 如果是，请详细描述:

7. 卫生保健工作者既往病史	
肥胖	□ 是 □ 否 □ 不详
癌症	□ 是 □ 否 □ 不详
艾滋病/其他免疫缺陷	□ 是 □ 否 □ 不详
心脏病	□ 是 □ 否 □ 不详
哮喘（需要药物治疗）	□ 是 □ 否 □ 不详
慢性肺病（非哮喘）	□ 是 □ 否 □ 不详
慢性肝病	□ 是 □ 否 □ 不详
慢性血液病	□ 是 □ 否 □ 不详
	□ 是 □ 否 □ 不详 如果是，为第几次妊娠: □ 第一次 □ 第二次 □ 第三次 □ 不适用

怀孕	预产期 (DD/MM/YYYY) / /
慢性肾病	□ 是 □ 否 □ 不详
慢性神经功能障碍/疾病	□ 是 □ 否 □ 不详
器官或骨髓移植接受者	□ 是 □ 否 □ 不详
其他既往病史	□ 是 □ 否 □ 不详 如果是，请详述:

由研究协调员收集：

8.接触样本采集（第1天-基线）	
基线血清是否被采集？	□ 是 □ 否 □ 不详 如果是，具体日期 (DD/MM/YYYY):
标本被送到哪个实验室？	
将冠状病毒发送到其他实验室的日期 （如果适用）(DD/MM/YYYY)	___/___/___

表格 2：医护人员报告表（第 21 天）

9a. 卫生保健工作者的症状	
自基线访视和收集标本以来，您是否经历过呼吸道症 状（咽痛，咳嗽，流鼻涕，呼吸急促）？	□ 是 □ 否 如果否，请跳至5c

首次症状发作的日期(DD/MM/YYYY)	(DD/MM/YYYY)___/___/____ □ 无症状 □ 不详
发烧（≥38°C）或发烧史	□ 是 □ 否 □ 不详 如果是，请填最高温度:
9b. 呼吸道症状	
咽喉痛	□ 是 □ 否 □ 不详 如果是，时间 (DD/MM/YYYY):_____/__/___
咳嗽	□ 是 □ 否 □ 不详 如果是，时间 (DD/MM/YYYY):_____/__/___
流鼻涕	□ 是 □ 否 □ 不详
呼吸急促	□ 是 □ 否 □ 不详 如果是，时间 (DD/MM/YYYY):_____/__/___
9c. 其他症状	
畏寒	□ 是 □ 否 □ 不详
呕吐	□ 是 □ 否 □ 不详
恶心	□ 是 □ 否 □ 不详
腹泻	□ 是 □ 否 □ 不详
头痛	□ 是 □ 否 □ 不详
皮疹	□ 是 □ 否 □ 不详
结膜炎	□ 是 □ 否 □ 不详
肌肉疼痛	□ 是 □ 否 □ 不详

关节疼痛	□ 是 □ 否 □ 不详
食欲不振	□ 是 □ 否 □ 不详
鼻出血	□ 是 □ 否 □ 不详
疲劳	□ 是 □ 否 □ 不详
全身无力	□ 是 □ 否 □ 不详
癫痫发作	□ 是 □ 否 □ 不详
意识改变	□ 是 □ 否 □ 不详
其他症状	□ 是 □ 否 □ 不详 如果是，请详细描述:

由研究协调员或同等人员填写：

10. 标本采集（第21天）	
唯一的病例ID /家庭号	□ 不适用
基线血清是否被采集？	□ 是 □ 否 □ 不详 如果是，具体日期 (DD/MM/YYYY):
样品采集日期 (DD/MM/YYYY)	(DD/MM/YYYY)___/___/____ □ 不适用
标本被送到哪个实验室？	
将冠状病毒发送到其他实验室的日期 （如果适用） (DD/MM/YYYY)	___/___/___

11. 结局（21天以上）	
结局	□ 存活 □ 已死亡 □ 不适用 □ 不详 如果已死亡，死因是:
发生结局的日期（DD/MM/YYYY）	___/___/___ □ 不详 □ 不适用
住院治疗	□ 是 □ 否 □ 不详 如果是，第一次住院日期 ___/___/___ □ 不详 如果是，请说明住院原因：

表 3：化验结果

由协调员填写：

12a.基线血清学检测方法及结果：	
实验室识别号	
基线样品采集日期（日日/月月/年年年年）	（日日/月月/年年年年）____/___/___
收到基线样品的日期（日日/月月/年年年年）	（日日/月月/年年年年）____/___/___
样品类型	□ 血清 □ 其他，请注明：
结果（2019-nCoV抗体滴度）	
结果的日期（日/月/年）	___/___/___

标本运送到其他实验室进行确认 -日期 （日日/月月/年年年年）	□ 是□否 （日日/月月/年年年年）____/___/___

12b.随访血清学检测方法和结果：	
实验室识别号	
随访样品采集日期（日日/月月/年年年年）	（日日/月月/年年年年）____/___/___
收到随访样品的日期（日日/月月/年年年年）	（日日/月月/年年年年）____/___/___
样本类型	□ 血清 □ 其他，请注明：
结果（2019-nCoV抗体滴度）	
结果的日期（日/月/年）	___/___/___
标本运送到其他实验室进行确认 -日期 （日日/月月/年年年年）	□ 是□否 （日日/月月/年年年年）____/___/___

表 4：症状日记

每个医护人员接触者会被要求每天记录各种症状或体征的存在与否，这个记录从基线问卷开始，直到基线问卷往后的 21 天（最少 14 天）。
2019-nCoV 的临床表现和范围尚不清楚，因此，症状日记可以被扩大到包括呕吐，腹泻，腹痛等相关症状，并且可能需要被修改从而包括超过 14 天的症状数据。
如果没有任何症状，请确保在第二列中选择“无”。

天	**症状**						
	无症状 （若无症	**发热 ≥38℃**	**咽喉痛**	**咳嗽**	**流鼻涕**	**呼吸急促**	**其他症 状：请注**

	状请勾选）						**明**
0	□无	□是□否	□是□否	□是□否	□是□否	□是□否	
1	□无	□是□否	□是□否	□是□否	□是□否	□是□否	
2	□无	□是□否	□是□否	□是□否	□是□否	□是□否	
3	□无	□是□否	□是□否	□是□否	□是□否	□是□否	
4	□无	□是□否	□是□否	□是□否	□是□否	□是□否	
6	□无	□是□否	□是□否	□是□否	□是□否	□是□否	
7	□无	□是□否	□是□否	□是□否	□是□否	□是□否	
8	□无	□是□否	□是□否	□是□否	□是□否	□是□否	
9	□无	□是□否	□是□否	□是□否	□是□否	□是□否	
10	□无	□是□否	□是□否	□是□否	□是□否	□是□否	
11	□无	□是□否	□是□否	□是□否	□是□否	□是□否	
12	□无	□是□否	□是□否	□是□否	□是□否	□是□否	
13	□无	□是□否	□是□否	□是□否	□是□否	□是□否	
14	□无	□是□否	□是□否	□是□否	□是□否	□是□否	
…							
21	□无	□是□否	□是□否	□是□否	□是□否	□是□否	

表 5：医疗机构感染的预防和控制

对于参与调查的每一个医疗机构，其管理员都需要填写下表一次。

医疗机构信息	
收治2019-nCoV确诊病人的医疗机构的名称	
该医疗机构是否有适当的WASH服务和材料？	□是□否□不明
该医疗机构是否有感染的预防与控制（IPC）项目和团队，或至少一个专用并经过训练的联络点？	勾选所有适用项： □ IPC程序 □ IPC团队/服务 □ IPC联络点 □ IPC培训
该医疗机构是否有对于医疗卫生工作者的预防与控制（IPC）指南？	□是□否□不明
该医疗机构是否有标准和额外的（基于传播的预防）的预防与控制（IPC）指南？	□是□否□不明
该医疗机构的医疗卫生工作者是否有定期IPC培训（至少每年一次）？	□是□否□不明
该医疗机构是否有个人防护设备（PPE）？	□是□否□不明
该医疗机构的可用PPE数量是否充足？	□是□否□不明
该医疗机构的可用PPE是否高质量并且适用？	□是□否□不明
该医疗机构是否有容易获得的（即在护理时）酒精类洗手液以供手部清洁？	□是□否□不明
该医疗机构是否有用于手部清洁的肥皂和水？	□是□否□不明
该医疗机构是否进行定期（至少每年一次）手部清洁审核并反馈给医护人员？	□是□否□不明 如果是，最后的一次手部清洁审核的日期（日日/月月/年年年年）：

该医疗机构是否进行其他IPC审核？	□是□否□不明 如果是，最后的一次 IPC审核的日期（日日/ 月月/年年年年）：
该医疗机构对于患者的院内感染是否有监测系统？	□是□否□不明
该医疗机构对于医护人员的院内感染是否有监测系统？	□是□否□不明
该医疗机构在员工到达时，是否检查其是否有感染症状？	□是□否□不明
如果有2019-nCoV感染患者被该医疗机构收治，该医疗机构是否向所有医疗卫生工作者发出警报？	□ 总是 □ 在大多数情况下是 □ 有时候我们没有被及时警报 □ 很少及时警报
该医疗机构是否在入口处有设备齐全的、有经过训练的工作人员在此工作的分诊台？	□是□否□不明
2019-nCoV疑似患者是否在抵达该医疗机构后隔离？	□ 总是 □ 大多数时候是 □ 偶尔 □ 很少 □ 未知
2019-nCoV疑似患者在抵达该医疗机构后，是否被系统地配备医疗口罩？	□ 总是 □ 大多数时候 □ 偶尔 □ 很少 □ 未知
该医疗机构的工作人员的水平是否根据工作量充分分配？	□ 是的，总是按照推荐 □ 大多数时候 □ 偶尔 □ 很少

该医疗机构的病床数是否超过了标准容量？	□ 是的，总是按照推荐 □ 大多数时候 □ 偶尔 □ 很少

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