



Partners in Population and Development (PPD)  
An Inter-Governmental Organization  
Promoting South-South Cooperation



中华人民共和国国家卫生健康委员会  
National Health Commission of the People's Republic of China



## Maternal Care Service Respond During COVID-19 Epidemic in China, 2020

# SHARING BEST PRACTICES

Addressing RH, Population and Development Challenges

Case from CHINA



## Biography of the Consultant



### Dr. Song Li

Dr Song Li is the Deputy Director General in the Department of Women & Children's health, National health commission (NHC) of China. Since 2002, she started from a senior program officer to the current position as a DDG of NHC. During her career development, Dr Song's responsibilities are to design, guide and coordinate the implementation of national and international health programs in China, and to participate in the development of legislation and policy on strengthening MCH health service system. Dr Song Li has rapid response to public health emergency, such as SARS, bird flu outbreak and COVID-19.



### Dr. Jin Xi

Jin Xin, China CDC's Chief Expert of Maternal and Child Health, had been working fifteen years as the Deputy Director of the National Center for Women and Children's Health (NCWCH), China CDC. She has been engaged in maternal and child health work for more than 30 years and dedicated to MCH for her entire career life with a persistent work attitude and a strong sense of professionalism and responsibility. She has won the United Arab Emirates Health Foundation Prize from the World Health Organization in her capacity as a representative of maternal and child health in China.



### Dr. Wang Ai-Ling

Wang Ailing, Chief Physician, Director of the Maternal Health Department of the National Center for Women and Children's Health, China CDC. Mainly engaged in maternal health care, prevention of mother-to-child transmission of HIV, syphilis and hepatitis B. As the team leader, she are responsible for national maternal health management, PMTCT program planning, technical guidance, training, supervision and evaluation, and other technical support work.



### Dr. Qiao Ya-Ping

Dr. Qiao Yaping majored in public health, health social science, and maternal and child health. She has served as associate professor of the Department of Maternal Health of National Center for Women and Children's Health, China CDC, since 2016. In this role, she participated in the national program and researched maternal health and prevention mother-to-child transmission of HIV, syphilis, hepatitis B.

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## Acronyms

ANC Antenatal Care

COVID-19 Corona Virus Disease 2019

China CDC Chinese Center for Disease Control and Prevention

CT screening Computed Tomography

MCH Maternal and Child Health

ICU Intensive Care Unit

## Foreword

Partners in Population and Development (PPD) is an inter-governmental organization of 27 Developing Countries from Asia, Africa, Latin America, and Middle East and North Africa (MENA) regions, launched in 1994 at the International Conference on Population and Development (ICPD) held in Cairo, Egypt with the mandate to institutionalize and promote South-South Cooperation (SSC) in Reproductive Health, Family Planning and Population related issues for the implementation of the ICPD Program of Action. Through exchange of knowledge, experiences and best practices among its member countries and other developing countries, PPD contributed in creating opportunities for launching efficient and transformational SSTC programs, considered as best alternative approaches to achieve ICPD and the 2030 Agenda for Sustainable Development in developing countries.

In 2019, PPD and UNFPA jointly documented 2 best practices from Kenya and Tunisia which were published in UNOSSC South-South Galaxy (Volume 3: South-South and Triangular Cooperation for Sustainable Development). In 2020 and as the whole world experienced the social and economic disruption, particularly in health system caused by COVID-19 pandemic, PPD with the support of UNFPA has documented nine (9) best practices from Bangladesh, China, Egypt, The Gambia, Ghana, India, Morocco, Vietnam and Thailand, highlighting the issues related to reproductive health, family planning, maternal health, adolescent health, gender equality, population and development.

I strongly believe that sharing best practices is a key tool to promote South-South Cooperation and this document will help other countries to adapt and replicate the ideas to solve similar issues in the beneficiary countries.

I wish to express my sincerest thanks and appreciation to the Government of the People's Republic of China through the National Health Commission for their strong engagement to South-South Cooperation and continued support to PPD as witnessed by the documentation of the "**Maternal Care Service Response During COVID-19 Epidemic in China**" and the commitment to share it with other developing countries.

**Adnene Ben Haj Aissa**  
Executive Director

## Outline of Documentation of Best Practices

	General Information Sheet on the Country and Project setting:	
1.	Name of the Country	China
2.	Name of the State or Province in the Country	The Whole Country
3.	Type of Community	
4.	Number of Beneficiaries	
5.	Kind of Intervention	<ol style="list-style-type: none"> <li>1. Actively instruct pregnant women protection and accept antenatal care</li> <li>2. Strictly manage pregnant women with fever</li> <li>3. Effectively guarantee antenatal care and safe delivery services for suspected and confirmed pregnant women</li> <li>4. Strengthen the management of pregnant and lying-in women with suspected infection and the treatment of newborns</li> </ol>
6.	Implementing Institution	Health administration Health facilities providing maternal care services
7.	Details of Institution with e-mail address	
8.	Head of the Institution	National Health Committee
9.	Implementation Period	2020 Feb – till now
10.	Budget:	No

## Maternal Care Service Respond during COVID-19 Epidemic in China

### Overview

An outbreak of 2019 novel coronavirus diseases (COVID-19) in Wuhan, Hubei Province, China has spread quickly nationwide. By the end of July 9, 2020, there are 85,399 report cases COVID-19 in China. As a result of the epidemic, many human activities have been affected. However, women's pregnancies and deliveries will not be interrupted by the epidemic. How to maintain maternal health in the COVID-19 epidemic is a crucial challenge for the health systems. China's health service system is constantly exploring and summarizing some experiences to cope with the dual pressure of the epidemic and maternal health.

The first is to focus on pregnant women and children's unique characteristics at the beginning of the epidemic and clarify stakeholders' responsibilities through a government notification. Moreover, according to the situation, adjust the service way, guide the pregnant and lying-in women to change the cycle and way of medical treatment. In its implementation, the Government pays attention to supervision and evaluation. So far, the results from studies and routine surveillance have shown that no maternal infections are higher than in the same age group, and no maternal deaths are higher than in the same period last year.

### Implementing Institutions/development actors

The initiator of this program is the National Health Committee of the People's Republic of China. The implementing institutions are Health Committees and related Health facilities in the whole country. The Health Committees include committees at the provincial,

prefectural, and county levels in the country. Related Health facilities are defined by health facilities that provide antenatal and delivery care services at national, provincial, county, and township levels in the country.

### Objective

Effectively protect pregnant women and newborns during the COVID-19 epidemic to ensure mothers and their newborn infants' safety.

### Practice

#### 1. Clarified the requirement of maternal care services provision during the COVID-19 epidemic.

On February 8, the National health committee (NHC) had issued a "Notice on strengthening the treatment of maternal diseases and safe delivery during the prevention and control of the new coronavirus pneumonia epidemic"<sup>1</sup> and clarified the requirements for maternal health work. Health

committees at the provincial level, prefectural level, and county levels in the county have to be responsible for developing a work plan to guide implementation at the local level, coordinating medical resources, and monitoring the implementation.

## **2. Capacity building to ensure maternal care services in the context of the COVID-19 epidemic.**

National Center for Women and Children's health, China CDC has developed technical guidelines, training materials, and online training courses to help remote professional learning promptly. The relevant associations and academic societies had conducted online training toward health providers to update related knowledge and information on how to respond to COVID-19. Each hospital also organized its staff to conduct various training in different ways.

Besides, universities and research institutions have conducted various studies to understand the virus and the disease better. These results were also being updated in the guidelines and would be passed on to clinical service guidance.

## **3. Consistently provided maternal care services to guarantee the health of pregnant women and their newborn babies.**

According to the Notice issued by NHC and work plans issued by local health committees, health facilities providing maternal care services at national, provincial, county, and township levels have provided qualified maternal care services to pregnant women from Feb 2020 to currently. There are four parts of the services to emphasize:

- 1) Actively instruct pregnant women protection and accept antenatal care;
- 2) Strictly manage pregnant women with fever;
- 3) Effectively guarantee antenatal care and safe delivery services for suspected and confirmed pregnant women;
- 4) Strengthen the management of pregnant and lying-in women with suspected infection and the treatment of newborns.

## **Results**

The management of maternal care services has been established from the township level to the national level. Health facilities and health care staff have been guided and supervised to provide maternal care for pregnant women and their newborn babies.

Pregnant women and their newborn babies have access to antenatal care, safe hospital delivery, postpartum care as the same as that before the epidemic outbreak. Pregnant women with fever, suspected or confirmed infection have been managed and treated.

So far, from the result of the China Maternal Mortality Rate Report System, no maternal deaths are higher than in the same period last year. However, a more systematic and scientific evaluation of how COVID-19 influences the safe of maternal health needs further data and research.

## Monitoring and Evaluation

Health administration departments of the national Government and local governments in China have monitored the work.

There are two ways to evaluate. One is to monitor and assess surveillance data to exam the change of situation. The data about birth, death, and central processes

indicate maternal health can be found in the surveillance report system. Another way is to learn about the implementation through field visits. Nation Health Commission sent several expert teams to the provinces to supervise and evaluate the implementation.

## Successes and Lessons Learned

- 1) The government of China prioritizes maternal and child health and the lives of the population.
- 2) Set up designated hospitals for pregnant women and ensured service provided during the epidemic.
- 3) Well-planned treatment and management plans for suspected and confirmed pregnant women and their newborns.
- 4) Various measures to provide health education, counseling, supports and direct antenatal care services.

## Future Plans

- 1) A scientific summary of the advantages and disadvantages of current activities is needed, includes an in-depth analysis of available data and associated impacts.
- 2) According to scientific analysis results, adjust the existing measures scientifically, and formulate the response plan.
- 3) Conduct scientific stockpiling of material and personnel capabilities in case of a possible disaster. Moreover, rehearse on the routine obstetrics department training. The rehearse may be organized by one hospital or by the local health administration section.
- 4) A large-scale health education campaign was conducted to raise the awareness among general population on how to protect pregnant women and how pregnant women to protect themselves and their children when disaster strikes.

## Replicability and Scalability to promote South-South Cooperation

- 1) Pre-requisites for replication in other developing countries
  - A system for fast communication of policies and a comprehensive network of maternal and child health services.
  - A well-run community organization.

- 2) Experiences in replicating in other countries through South-South Cooperation
  - According to the epidemic and the advice of experts, the response measures were to be formulated quickly.
  - The activities can be implemented very quickly.
  - According to the situation's progress and changes in the epidemic situation, the measures could be adjusted.
  
- 3) Suggested steps for replication in other countries
  - The establishment of designated hospitals can make infected pregnant women get effective treatment and are effectively reduce other pregnant women's infections.
  - Develop appropriate strategies based on the country's health system and resources.
  - Mothers and children should be protected first by society and government, no matter what disaster strikes.
  
- 4) Potential partnerships (what would be provided, willingly, upon request)

## 1. Background and Justification

In December 2019, Wuhan, Hubei province, China, became the center of an outbreak of pneumonia of unknown cause, which raised intense attention within China and internationally. Cases of COVID-19 are no longer limited to Wuhan, Hubei province. As of January 23, 2020, confirmed cases were consecutively reported in 32 provinces, municipalities, and special administrative regions in China, including Hong Kong, Macau, and Taiwan.

As a result of the epidemic, many human activities have been affected. However, women's pregnancies and deliveries will continue and will not stop because of the epidemic. How to do maternal health in the COVID-19 epidemic is a crucial challenge for the health systems.

There is little knowledge about the risks of COVID-19 infection during pregnancy— no evidence of vertical transmission of COVID-19 from mother to infant during pregnancy and breastfeeding. However, changes in hormonal levels and immune system function generated by pregnancy may increase women's vulnerability to infections. Pregnant women show higher mortality rates and complications associated with viral infections compared to the general population. Moreover, health facilities and medical resources have been reallocated to respond to COVID-19 control and treatment.

Hence, Efforts need to guarantee pregnant women access to consistent maternal care as the same as before the COVID-19 outbreak and specific health care services for pregnant women suspected or confirmed COVID-19 infection.

## 2. Goals and Principles

### 2.1 Goals

Provide maternal care and COVID-19 protection services to pregnant women and their newborn infants to ensure mothers and children's safety.

### 2.2 Principles:

- 2.2.1 Keep pregnant women and children free from the COVID-19.
- 2.2.2 All pregnant women can access to regular maternal care and delivery care services during lockdown or quarantine.
- 2.2.3 Pregnant women infected with COVID-19 can receive both timely treatments toward virus and maternal & delivery care services.

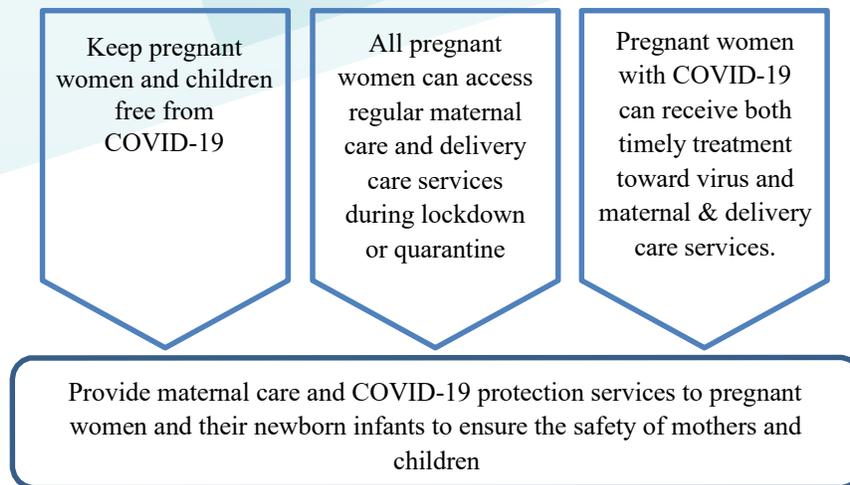


Figure 1. the goal and principles of maternal health response COVID-19 in China

### 3. Descriptions

#### 3.1 Requirement and work plans issued by health authorities

National Health Committee (NHC) has issued “Notice on strengthening the treatment of maternal diseases and safe delivery during the prevention and control of the new coronavirus pneumonia epidemic” and clarified the maternal health work requirements. Health committees at the provincial level, prefectural level, and county levels in the county have to be responsible for developing work plans to guide implementation at the local level, coordinating medical resources, and monitoring the implementation.

The responsibilities of different perspectives were identified by this Notice. The main details can be found in Figure 2.

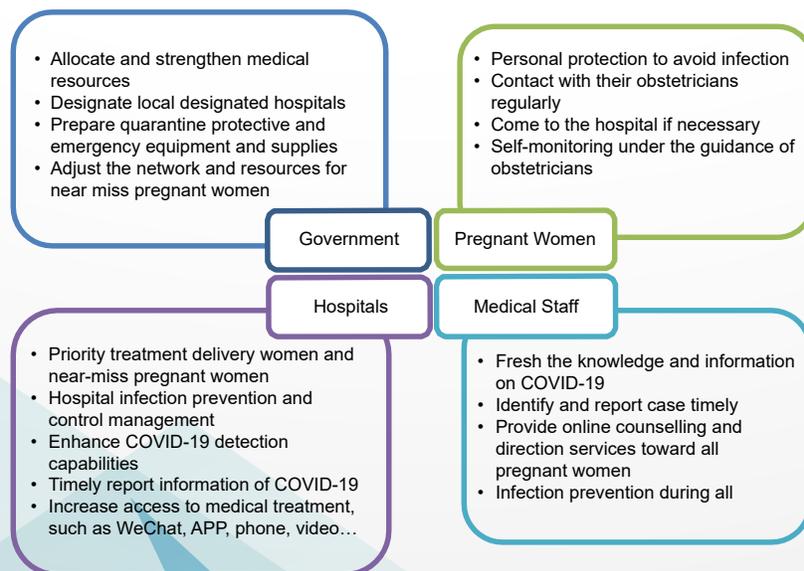


Figure 2. The responsibilities of different perspective among COVID-19

There were 1,774 hospitals that pointed as designated hospitals overall the county. The list of the designated hospitals was posted online, making it accessible to everyone on the Internet. Local Government also designated and opened their own designated hospitals to the public.

### **3.2 Classify health institutions and adjust procedures**

In China, under normal situation, most hospitals can provide pregnancy care and delivery services. During the COVID-19 period, hospitals were divided into general hospitals and designated hospitals.

Medical institutions at all levels strengthened their hospital infection control management, guide health workers to follow standard prevention principles strictly, and ensure sound implementation of the principles such as personal protection, hand hygiene, environmental disinfection, and waste management based on the risks of transmission through medical operations, to strictly prevent infection among the health workers.

#### **3.2.1 General hospitals that provide antenatal and delivery care toward uninfected pregnant women**

For general hospitals, their responsibilities are providing antenatal and delivery care toward uninfected pregnant women. Hospitals transform the obstetric wards in response to of COVID-19 epidemic. For general obstetric wards, beds are at least one meter apart and separated by screens or curtains. Stop using central air conditioning and keep the rooms well ventilated and at a suitable temperature.

To detect infected people in time and avoid nosocomial infections, at the beginning of the COVID-19 outbreak, all medical institutions added COVID-19 related consultation and examination services following the policy requirements.

All registrations should be made through prior booking appointment to reduce the waiting time for pregnant women. If feasible, the hospital should set up special consultation rooms for pregnant women. Pregnant women must wear masks properly when visiting medical institutions. Before entering the consultation room, the pregnant women must have their body temperature checked; if the pregnant woman's body temperature is higher than 37.3 , she must be sent to a fever clinic. With a few exceptions having particular circumstances, only one pregnant woman can enter the consultation area.

In non-emergency treatment, pregnant women who need to be admitted to the hospital should complete the routine blood test and lung CT screening at the outpatient clinic if they are suspected with a COVID-19 infection.

#### **3.2.2 Designated hospitals that provide antenatal and delivery care**

For designated hospitals, their responsibility is providing antenatal and delivery care toward infected pregnant women.

Isolation obstetric wards should be constructed with a clear division of various areas, including “two channels, three zones, and two buffer areas.” Two different access channels will be used for the access to health workers and patients. The three zones are clean areas, semi-contaminated areas, and

contaminated areas. For the two buffer areas, the first is between the clean area and the semi-contaminated area, and the second buffer between the semi-contaminated area and the contaminated area.

The ward, delivery room, and operating room should be located in the negative- pressure isolation area. The clean area, semi-contaminated area, and contaminated area should be set up in the ward, corresponding to different levels of personal protection for health workers. When the patients are transferred, a specific transfer channel should be set up and equipped with sound disinfection and protection protocol.

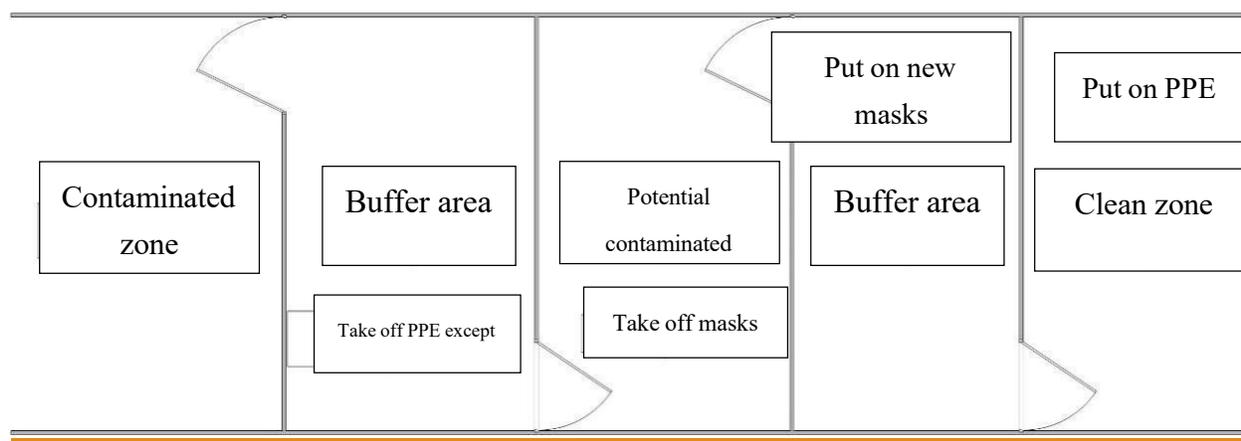


Figure 3. Schematic diagram of the isolation obstetric ward setup

### 3.3 Training for health staff

3.3.1 Medical institutions at all levels strengthen their hospital infection control management, guide health workers to follow standard prevention principles strictly, and ensure sound implementation of the principles such as personal protection, hand hygiene, environmental disinfection, and waste management based on the risks of transmission through medical operations, to strictly prevent infection among the health workers.

1.1.1 The isolation and separate accessing between the COVID-19 infected patients and other non-infected patients should be strengthened, the management of key wards for the gynecology, obstetrics, and pediatrics departments be strengthened, family visits be minimized, and visits by companions in the neonatal ward were suspended, to effectively reduce the risk of infection among the hospitalized patients.

3.3.2 Medical institutions at all levels should carry out training for all health workers on the identification, reporting, and medical treatment of COVID-19 cases, hospital infection control, close contact management, and personal protection, to enhance their containment, diagnosis, and treatment capacity. Health workers from crucial posts such as the outpatient clinic, emergency room, and the laboratory should be evaluated for the impacts of training to ensure they have acquired the knowledge and skills.

### 3.4 Maternal care services during the COVID-19 epidemic

3.4.1 The rate of ANC is above 99% in China. Almost all pregnant women visit the hospital for antenatal care when they know their pregnancy status.

To respond to the universal two-child policy, the National Health Commission issued and implemented a package of nationwide strategies in 2016. The package of strategies includes 1) pregnancy risk screening and assessment strategy, 2) case-by-case management strategy for high-risk pregnancies, (3) referral and treatment strategy for pregnant women and newborns with serious illness, (4) reporting strategy for maternal deaths, and



(5) accountability strategy. Among the five strategies, screening for and assessing high-risk pregnancies is the basis for high-quality perinatal healthcare. All the pregnant women are screened and assessed by obstetrician using uniform standards and procedures, all of whom have undergone unified training. After risk assessment and classification, medical records of women are labeled with green (low risk), yellow (moderate risk), orange (high risk), red (highest risk), or purple (infectious disease) for tailored management. Pregnant women with different risk levels are transferred to designated medical institutions at different levels for further perinatal care and delivery. Case-by-case management is implemented on pregnancies at a higher risk level (labeled with orange, red, and purple). This was the main mode of management for pregnant women in China before the COVID-19 epidemic.

3.4.2 During the epidemic of COVID-19, the number of prenatal visits and contents decreased compared with previous times.

When it is time for pregnant women to go to the hospital for antenatal care, most of them contacted their doctors via phone (including Hotline, hospital calls), WeChat, or Internet first. After the remote consultation, they go to the hospital to see their obstetricians in person when necessary.

Hospitals have strengthened the prevention and control of hospital infections and provided pregnant women with health education and psychological counseling services on maternal care and COVID-19 prevention through video online, telephone, WeChat, and so on and instructed pregnant women to arrange the time for antenatal care and go to medical institutions for delivery in time.

The principles below should be followed for maternal safety management during the epidemic period. Pregnant women should seek medical attention as needed. That is, pregnant women need to see a doctor in time if there are emergencies such as vaginal fluid or bleeding.

Pregnant women should follow the doctor's advice and visit the hospital based on the time slot booked through prior appointment to shorten the waiting time in the hospital for lower risks of infection. Especially for patients with pregnancy comorbidities and pregnancy complications, they should receive diagnosis and treatment according to the doctor's advice.

Efforts should be made to ensure medical observation, tracking and follow-ups, and rehabilitation during the recovery period for asymptomatic pregnant women. Once clinical manifestations appear during the period, their status should be corrected as confirmed cases, and treatment should be provided in time.



They should have thorough personal protection during hospital visits. In order to prevent cross-infection, pregnant women and their companions need to pay close attention to personal hygiene and protection throughout the way to the hospital and during the hospital visit, including wearing masks, washing hands, minimizing touching surfaces, avoiding crowds, reducing the time spent in the hospital, and so on.

Manage pregnant women with fever. Fever clinics have been set up in qualified midwifery institutions at the local level. The midwifery institutions have established a pre-check and triage system. Pregnant women with fever are identified in fever clinics. For suspected or confirmed pregnant women, they are referred to designated hospitals as soon as possible, accompanied by medical staff following regulations. Midwifery agencies have continued to carry out project management for high-risk pregnant women and provide timely treatment and referrals based on high-risk pregnant women's conditions.

3.4.3 Guarantee antenatal care and safe delivery services for suspected and confirmed pregnant women. Based on the number of pregnant women and the technical service resources of midwifery, a batch of midwifery institutions with strong comprehensive treatment capabilities has been designated as designated hospitals for pregnant women to prioritize the admission and treatment of suspected and confirmed pregnant women. Designated hospitals for pregnant and lying-in women provide maternity examinations and safe delivery services and treatment services for critically ill pregnant and lying-in women. The list of designated hospitals for pregnant and lying-in women was announced to the public to facilitate pregnant women's treatment.

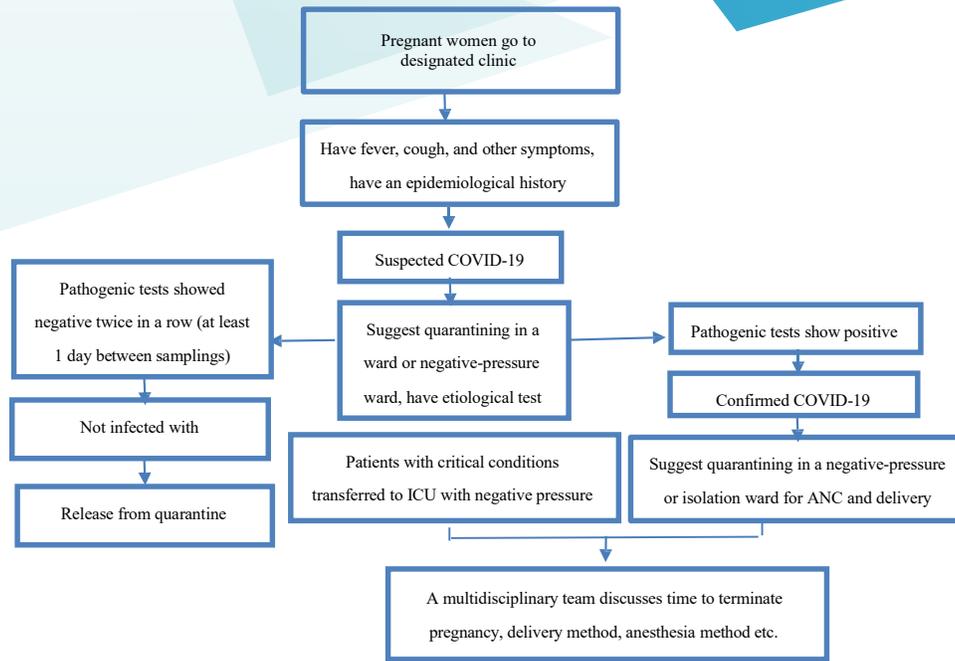


Figure 4. Diagnosis and treatment procedure for pregnant women with confirmed COVID-19

3.4.4 Strengthen the management of pregnant and lying-in women with suspected infection and the treatment of newborns. Strengthen cooperation in obstetrics and pediatrics when providing delivery services for pregnant women with suspected or confirmed infections. Newborns who are suspected or confirmed to be infected by pregnant women should be classified and managed after assessing the neonatology department. For those with severe clinical manifestations, they should be transferred to designated hospitals with strong neonatal treatment capabilities in time.

## 4. Discharged and Postnatal Care for Women with COVID-19

Pregnant women discharged from the hospital after recovering from COVID-19 are advised to continue monitoring their health status for 14 days. After returning home, pregnant women should avoid close contact with their families and live in a single room with adequate ventilation if possible. They are encouraged to wear masks, practice hand hygiene, avoid outdoor activities, and have individually served meals. Those who have not delivered should also count fetal movements, monitor the fetuses closely, and seek immediate medical attention in case of symptoms such as fever, cough, decreased fetal movement, vaginal bleeding, or other abnormalities. Follow-up checks are recommended in the second and fourth weeks after being discharged.



Ms. Hu, 27, was 33 weeks pregnant when she was diagnosed with COVID-19 on March 6, 2020. She recovered and was discharged from the hospital on March 22. "I am grateful. You are thoughtful. Thank all of you so much." she said as she was discharged from Whhan Leishenshan Hospital.

## 5. How to provide psychological guidance for pregnant women?

### 5.1 Psychological problems of pregnant women prone to occur during the epidemic

Because of fear about COVID-19 as well as ANC delivery in hospital and their health conditions impacted by the epidemic, pregnant women might be set to worry, anxiety, fear, irritability, and other negative emotions; they may develop symptoms of anorexia, nausea, vomiting, insomnia, and dreaminess or make previous symptoms aggravated. Pregnant women suspected or confirmed with COVID-19, in particular,

may deny infection of the disease and avoid examinations or treatments, while some may become overcautious and request examinations and medications repeatedly. Such situations require the attention of medical personnel for psychological and emotional support.

### 5.2 Methods of psychological support

Medical personnel should attach importance to the early identification and management of psychological problems, including screening of depression and anxiety and recognition of intense physical and mental reactions in a crisis.

Suggestions for pregnant women are as follows:

- 1) Accept the current situation of the epidemic, obtain information from official sources, reduce the possibility of exposure to COVID-19 related information, and stabilize their emotions.
- 2) Turn off electronic devices before bedtime and do some relaxation exercises, such as meditation, breathing, listening to music, and so on, to ensure a good sleep.
- 3) Ensure regular meals and a good diet with balanced nutrition; keep moderate exercise and a happy mood.
- 4) Devote their attention to an activity that they enjoy, such as reading, to enjoy the current moment, establish daily routines, and stabilize their states of mind.
- 5) Communicate and interact with their babies proactively, try to “talk” with their fetuses to enhance secure bonding as well as their emotional stability and cognitive adjustment.
- 6) Encourage pregnant women to establish connections with the outside world, communicate more with their husbands, families, friends, and colleagues to seek support or assistance.

### 5.3 Psychological counseling for pregnant women suspected or confirmed with COVID-19 infection

For pregnant women suspected or confirmed with COVID-19 infection, medical personnel need to establish an excellent doctor-patient relationship through listening and empathy and understand their concerns over the isolation environment and their health conditions; inform patients of the possible risks of the disease, the necessity, and benefits of isolation and treatment as well as the possibility of recovery; understanding and compliance of pregnant women, and work in collaboration, for the best outcome. It is equally vital to encourage pregnant women to be self-motivated by recalling their experience and strategies of success in coping with difficulties and challenges, mobilizing internal resources, promoting positive emotions, and enhancing mental resilience.

## 6. Implementing institutions and Partnerships

### Health administration

The health administration component plays a vital role as a government agency in managing and treating pregnant women during COVID-19. From the national level to the provincial level to the prefecture prefecture-level to the county level, health authorities are the headquarters of local maternal treatment and management. Health administration departments of the national Government and local governments in China have led this work.

**The national health committee (NHC)** is responsible for maternal care and management at the national level.

- 1) Adjust the strategy of maternal health in time according to the epidemic situation. On February 8, 2020, the National Health and Health Commission issued the “Notice on Strengthening the Disease Treatment and Safe Delivery for Pregnant Women during the COVID-19 Period” and proposed a series of measures.
- 2) Concern about maternal and child infections. Organized experts to develop and adjust treatment strategies for infected pregnant women and children.
- 3) Collected designated hospitals that treat COVID-19 infected pregnant women and children from all provinces and publicized them to the public.
- 4) Monitor and evaluate the implementation of all provinces.

**The provincial health committee** is responsible for maternal care and management at the provincial level. In addition to implementing national strategies, provincial health authorities should also coordinate and arrange medical resources according to local conditions.

The roles of the health committee on the **prefecture and county level** are similar. They are lead at local on the management of maternal and children care during the COVID-19 epidemic. According to the strategies from the national and provincial committees, they direct local health institutes to improve services for pregnant women and children. Furthermore, to collect protective materials to protect the medical staff.

The agency of responsible responsibility for maternal health during the epidemic below the county level is community governments in Urban and township governments in rural areas. Their main functions are health education, notification, and transport of pregnant women for medical treatment.

Community plays a vitally role in COVID-19 epidemic prevention. They know how many pregnant women in their community and which apartment. When the time of lockdown, the hospital visit was allowed, especially for pregnant women and children.



Figure 5. Schematic diagram of health administration departments at all levels

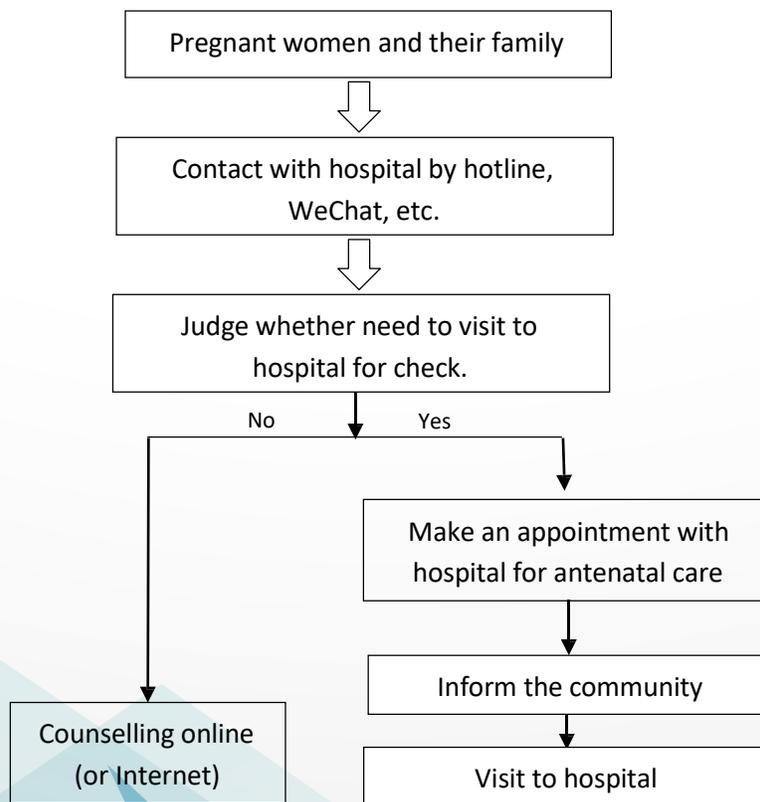


Figure 6. The process of pregnant women seeking medical treatment during the lockdown.

## Health institutes

During the COVID-19 period, health institutions were divided into two categories, designated hospitals and general hospitals. As mentioned earlier, general health care facilities are responsible for maternal health services for women who do not have COVID-19. However, their service models and processes have changed because of the outbreak.

The hospitals' primary responsibility is to treat pregnant women who are infected or suspected of being infected. In addition to the treatment of COVID-19, they also provide maternal health care and midwifery services.

## Civil society partnerships

Associations and academic organizations related to obstetrics, pediatrics, infectious disease and ICU developed technical guideline and treatment comments on pregnant women with COVID-19. They also organized many times training online for clinic health providers.

Health research institutes and hospitals are also involved in the research on mother-to-child transmission of COVID-19. This research focuses on the pregnancy outcomes of pregnant women with COVID-19. Whether the virus infection can cause miscarriage and whether mother-to-child transmission can occur are two research topics.

## 7. Achievements

The management of maternal care services has been established from the township level to the national level. Health facilities and health care staff have been guided and supervised to provide maternal care for pregnant women and their newborn babies.

Pregnant women and their newborn babies have access to antenatal care, safe hospital delivery, postpartum care as the same as that before the epidemic outbreak. Pregnant women with fever, suspected or confirmed infection have been managed and treated.

There was no significant increase in maternal and neonatal deaths compared with the same period last year.

## 8. Outcomes

1. A prevention and treatment network for pregnant women and newborn babies has been established at all levels to cope with COVID-19.
2. Pregnant women have protected from COVID-19 infection.
3. Infected pregnant and lying-in women received timely treatment.

## 9. Planning and Design: Experience

The program was launched in beginning of February in response to the outbreak in Wuhan. The official closing date for Wuhan is 10 AM on January 23, 2020.

At that time the initial consideration has several points: one is the special characteristic of maternal, delivery and some necessary examinations are must come

to the hospital, unlike other types of patients; Second, hospitals should try their best to avoid COVID-19 infection in hospitals. Third, pregnant women and children infected with COVID-19 can receive timely treatment and corresponding services.

Considering the above factors, the Department of Maternal and Child Health soon convened experts in related fields for discussion. After several times of expert workshop, “Notice on strengthening the treatment of maternal diseases and safe delivery during the prevention and control of the new coronavirus pneumonia epidemic” was published on 8 February,2020.

The Department of Maternal and Child Health also organizes experts to conduct various forms of training and requirements on this strategy to enable interventions to be implemented in health facilities throughout the whole country.

After repeated outbreaks in Beijing, Kashgar and other places this year, based on the original document, “Notice of the General Office of the National Health Commission on the Prevention and control of COVID-19 in Autumn and winter in maternal and child health institutions” was promulgated on 4 November 2020. This document gives more detailed guidance on how MCH Hospital can protect and treat pregnant and lying-in women in the context of COVID-19.

## 10. Monitoring and Evaluation

Health administration departments of the national Government and local governments in China have monitored the project.

There are two ways to evaluate. One is to monitor and assess surveillance data to exam the change of situation. The data about birth, death, and main processes indicates on maternal health can be found in the surveillance report system.

Government and experts are concerned about changes in indicators.

Another way is to learn about the implementation through field visits. Nation Health Commission sent several expert teams to the provinces to supervise and evaluate the implementation. They also gave technical support while field visits.

## 11. Successes and Lessons Learned

Judging by the results so far, a prevention and treatment network for pregnant women and newborn babies has been established at all levels to cope with COVID-19. The government of China prioritizes maternal and child health and the lives of the population. Set up designated hospitals for pregnant women and ensured service provided during the epidemic. During the COVID-19 epidemic, designated hospitals and non-designated hospitals have a clear division of responsibility in the provision of maternal health services.

In the specific service, the health providers provide Well-planned treatment and management plans for suspected and confirmed pregnant women and their newborns. This project also benefited from various forms of communication, especially during the lockdown. Various measures to provide health education, counseling, supports and direct antenatal care services. Therefore, in the document issued in November, the requirement of "MCH services on the cloud" was proposed.

## 12. Future Plans

This project is carried out nationwide, but it needs to be perfected and summarized. A scientific summary of the advantages and disadvantages of current activities is needed, includes an in-depth analysis of available data and associated impacts.

According to scientific analysis results, adjust the existing measures scientifically, and formulate the response plan.

Conduct scientific stockpiling of material and personnel capabilities in case of a possible disaster. Moreover, rehearse on the routine obstetrics department training.

The rehearse may be organized by one hospital or by the local health administration section.

A large-scale health education campaign was conducted to raise the awareness among general population on how to protect pregnant women and how pregnant women to protect themselves and their children when disaster strikes.

## 13. Replicability and Scalability to promote South-South

- 1) Pre-requisites for replication in other developing countries
  - A system for fast communication of policies and a comprehensive network of maternal and child health services.
  - A well-run community organization. As described above, much of the communication and implementation during the new Coronavirus was done in the community. Therefore, good functioning of community organizations, or grassroots organizations, is particularly important for maternal health.
  
- 2) Experiences in replicating in other countries through South-South Cooperation
  - According to the epidemic and the advice of experts, the response measures were to be formulated quickly.
  - The activities can be implemented very quickly.
  - According to the situation's progress and changes in the epidemic situation, the measures could be adjusted.
  
- 3) Suggested steps for replication in other countries
  - The establishment of designated hospitals can make infected pregnant women get effective treatment and are effectively reduce other pregnant women's infections.
  - Develop appropriate strategies based on the country's health system and resources.
  - Mothers and children should be protected first by society and government, no matter what disaster strikes.

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