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# **CSA's Information on Prevention and Control of COVID-19**

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Chinese Stomatological Association



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抗疫新书《新型冠状病毒肺炎口腔医疗机构防护手册》电子版免费读（全书）

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## **Expert Recommendations for Prevention, Treatment and Care of Oral Ulcers and other Mucosal Diseases during the Outbreak of COVID-19**

Society of Oral Mucosal Diseases, Chinese Stomatological Association<sup>1</sup>

In December 2019, some new cases of unknown pneumonia which was later named as coronavirus disease 2019 (COVID-19) by WHO were found in Wuhan City, Hubei Province, China. The number of infected cases increased rapidly and spread continuously. Tens of thousands of medical staff throughout the country have rushed to Wuhan to intensive medical treatment. Because of high mental tension and work intensity, unable to drink water for hours after entering the isolation ward and insufficient sleep, they might suffer from oral mucosal ulcers and other oral mucosal diseases. It is known that not only medical staff, but also police officers, community workers, long-term family members, and even patients with mild COVID-19, as well as those with oral mucosal disease in the past, all claim they feel uncomfortable with oral mucosal disorders, such as oral ulcer caused by great mental pressure, which mainly include recurrent aphthous ulcer (RAU), chronic cheilitis and oral lichen planus. This article will give some suggestions on the prevention and care of the oral mucosal diseases above mentioned during fighting against COVID-19, focusing on the measures to deal with the oral mucosal damage caused by stress response.

**Key words:** COVID-19, recurrent aphthous ulcer, cheilitis, oral lichen planus, stress response

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<sup>1</sup> Written by Xiang GUO, Ying HAN, Zi Jian LIU, Shu Fang LI, Guo Dong HUANG and Hong Wei LIU, Peking University School and Hospital of Stomatology, Beijing, P.R. China.

**Corresponding author:** Prof. Hong Wei LIU, Department of Oral Medicine, Peking University School and Hospital of Stomatology, 22# Zhongguancun South Avenue, Haidian District, Beijing 100081, P.R. China. Tel: 86-10-82195362; Fax: 86-10- 62110880. Email: hongweil2569@163.com

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## **Recurrent aphthous ulcer (RAU)**

### *The clinical characteristics of RAU*

RAU, also called recurrent oral ulcer (ROU), commonly known as "aphthous ulcer", is the most frequent form of oral ulcerations, with periodic, recurrent and self-limiting characteristics. The prevalence of RAU in the population is about 20%. The attack of RAU is related to psychological stress, emotional fluctuation, poor sleep, nutritional deficiency caused by less vegetables and fruits, genetic factors, female menstruation phase, immune disorders, digestive system diseases and other factors<sup>1-3</sup>. During the anti-epidemic period of coronavirus disease 2019 (COVID-19), psychological stress and poor sleep undoubtedly become the main inducing factor<sup>4</sup>, such as superposition of other susceptible factors, the incidence of the disease will increase.

RAU can be divided into three types: minor aphthous ulcer, herpetiform aphthous ulcer and major aphthous ulcer. Of which, 80% belong to minor aphtha, and their clinical characteristics are as follows:

- Oral ulcer can appear in any part of the oral mucosa (hard palate and gingiva are rare).
- The number of oral ulcer is usually one or several, round or ovoid, scattered with the size of needle tip, rice grain, mung bean or soybean.
- The surface of oral ulcer is light yellow or grey, surrounding with erythematous haloes.
- The pain of oral ulcer was obvious.
- Oral ulcer can heal within 1-2 weeks, usually 7-10 days.

If there are dozens of oral ulcers at the same time, it is herpetiform ulcers. If the diameter of a single oral ulcer is larger than 1 cm, it is major aphthous ulcer.

Three types of aphthous ulcer can recur after several days or months after healing. The no ulcer stage is called interval period. Some of the interval periods is not obvious, which can occur continuously one after another. The location of recurred aphthous ulcer is generally different from the previous one<sup>1,2,5</sup>.

### *Treatment principle and drug selection of RAU*

#### Local therapies

Main principles: anti-inflammatory, pain relief and promotion of healing<sup>5,6</sup>. This principle is also applicable to the local treatment of most oral mucosal ulceration.

- Anti-inflammation: solution of chlorhexidine, or compound chlorhexidine, or povidone iodine, or ethacridine lactate, or cetylpyridinium chloride, compound borax, and so on can be chosen to rinse mouth. It can also be used to contain cetylpyridinium chloride lozenges, diquinium chloride lozenges or xididium lozenges.
- Pain relief: compound chamomile and lidocaine hydrochloride gel is applied to the ulcer area.
- Promotion of ulcer healing: any choice of anti-ulcer powder, anti-ulcer ointment, ulcer film, patch, paste, gel and so on can be used topically.

#### Systemic therapies

In order to shorten the period of ulcer attack and prolong the interval period<sup>5,7</sup>, thalidomide, total glucosides of peony capsules, levamisole and Kouyanqing granules (editor's note: a proprietary Chinese medicine) can be chosen to take orally as appropriate for weeks or months<sup>5,8,9</sup>.

#### *Care for RAU*

- Local painkillers should be used on the ulcer surface before eating and putting local medication.
- Systemic medication should be taken after meals at first.
- Secondly the mouth rinse should be facilitated for 1-3 minutes so that solution can penetrate into the submucosa and play an anti-inflammatory role.
- Thirdly, oral ulcer powder should be applied on the ulcer surface, with keeping fasting, water deprivation and silence for 15-20 minutes in order to facilitate the local healing-promoting drugs effectively.
- If buccal tablets are selected, they should be contained 20 minutes later than the

application of local healing promoting drugs.

- Local medication should be applied before or after three meals a day.
- Please follow the doctor's advice for systemic medication.

### *Prevention of RAU*

For the first-line anti-epidemic personnel, the combination of work and rest can relieve mental stress. Keeping adequate sleep and taking supplement vegetable, fruits and vitamins, keeping your mouth moist is essential to slow down and prevent the onset of RAU.

## **Chronic cheilitis**

### *The clinical characteristics of chronic cheilitis*

Chronic cheilitis is a common chronic non-specific inflammatory disease of lip. The occurrence of the disease is mostly related to a variety of chronic long-term sustained stimulation such as dry climate, wind, cold weather, mechanical or chemical factors, surrounding temperature, medicine and other factors, or addicted to cigarettes and alcohol, licking lips, biting lips and other bad habits. It is also related to the mental stress of patients.

The clinical manifestations are swelling of lip, dry lip, congestion of labial mucosa, desquamation, chap, and scab exudation on the vermilion of the lips. The condition is recurrent and chronic lesions on the lips<sup>1,2</sup>.

### *Treatment principle and drug selection of chronic cheilitis*

Treatment is mainly local treatment. Removal of irritation and anti-inflammatory is the principles<sup>1,2,10</sup>. First of all, all irritating factors should be removed and bad habits such as tearing and biting lips should be changed. Avoid wind blowing, cold and other stimulation, and avoid eating spicy foods. To reduce inflammation, 0.1% ethacridine lactate solution can be wet compress, or aureomycin solution or chlorhexidine solution can be wet compress. Then Reapply coated with anti-inflammatory ointment

(such as erythromycin eye ointment) or steroid ointment, can also be applied with aureomycin glycerin.

#### *Care for chronic cheilitis*

Regardless of the severity of chronic cheilitis, it should be treated with anti-inflammatory drugs first and then with moisturizing care. Medication is divided into wet compresses and local application of ointment. Many patients with cheilitis are persistent and unhealed because there is no wet compress. Wet compress is the simplest and most effective way to treat chronic cheilitis. Lacks the wet compress step, spreads the ointment only, will not have good effect.

The procedure and steps of wet application and application of ointment are as follows:

- Cut the sterilized cotton into strips with the same size of lip lesion area, then soak it in the wet compress solution to make it supersaturated; pick up the cotton strip with tweezers and use it without dropping the liquid.
- Apply the soaked cotton pad soaked on the lip lesions and cover all the entire surfaces of the lesion.
- During 20 minutes of wet compress, the wet applied cotton may become dry due to the volatilization of the liquid medicine. A small amount of liquid medicine should be added to the cotton tablet every 3-5 minutes to keep it in an oversaturated state.
- The wet compress time can be increased or decreased according to the thickness of the scab. After the scab becomes soft and painless, it can be wet applied for a few minutes to consolidate the anti-inflammatory effect of the liquid medicine penetrating into the tissue, or the wet compress can be ended immediately.
- Immediately apply a medicated ointment on the surface of the moist lip tissue to keep it moist and achieve a long-term anti-inflammatory effect until the next wet application.

Medication can usually be effective for cheilitis cure in 1-2 weeks. However, further moisturizing care should not be lax, you can use clean water wet compress, apply

vaseline ointment (available in supermarkets) to protect the lips.

#### *Prevention of chronic cheilitis*

For the frontline anti-epidemic personnel, paying attention to rest, balancing work and rest, alleviating mental pressure, and keeping the lip moist are all very important to slow down and prevent chronic cheilitis.

### **Oral lichen planus**

#### *The clinical characteristics of oral lichen planus*

Lichen planus is a chronic inflammatory disease of skin and mucosa, and is one of the common diseases of oral mucosa. It is generally believed that in oral mucosal diseases, besides recurrent aphthous ulcers, oral lichen planus is the most common one, with a prevalence of less than 1%. The disease mostly presents a chronic and repeated process, which can last for months to years. The etiology of this disease is still unclear and related to many factors, among which mental tension, anxiety, depression, etc. are the main causes that lead to immune dysfunction of the body.

The clinical characteristics of oral lichen planus are gray-white keratinized streaks or plaques appear on the oral mucosa. The patients usually have no pain symptoms, only rough feeling. When congestion, erosion, ulceration, atrophy and blisters occur in the oral mucosa, irritation pain or spontaneous pain is obvious. Oral mucosal lesions can also be accompanied by skin lesions<sup>1-2</sup>. Under the condition of stress or high mental pressure, it is more likely to manifeste as congestion, erosion and ulceration of the oral mucosa, leading to aggravation of stimulation pain while eating or spontaneous pain.

#### *Treatment principles of oral lichen planus*

The treatment includes systemic treatment and local treatment. If the white streak of the original oral lichen planus is not accompanied by congestion, erosion, ulcers, etc., and there are no pain symptoms, you can temporarily observe and see a doctor at an

alternative date.

The principle of local treatment is to remove stimulation, anti-inflammation, analgesia and promote healing. Systemic medication is mainly immunomodulatory therapy, please follow the doctor's advice, and especially strengthen psychological counseling, relieve mental pressure<sup>1,2,11,12</sup>.

#### *Care for oral lichen planus*

Patients with oral lichen planus under stress are prone to manifestations such as congestion, erosion and ulceration of the mucosa, which require active treatment and care. The selection of local treatment drugs and care are basically the same as the corresponding part of the aforementioned “recurrent aphthous ulcer”, and the oral lichen planus can be treated with the reference. Attention should be paid to topical medication after three meals. Rinse mouthwash first and then apply medication to promote healing.

#### *Prevention of Oral Lichen Planus*

All patients with oral lichen planus need to mediate emotions. For the first-line anti-epidemic personnel, they need to alleviate tension and anxiety, work regularly and reduce the stress index as much as possible.

### **Expert Committee**

**Hong Wei LIU**, Peking University School and Hospital of Stomatology, Beijing, P.R. China.

**Guo Yao TANG**, Xinhua Hospital affiliated to Shanghai Jiaotong University School of Medicine; Shanghai Ninth People's Hospital, College of Stomatology, Shanghai Jiao Tong University, Shanghai, P.R. China.

**Qian Ming CHEN**, West China Hospital of Stomatology, Sichuan University,

Chengdu ; Affiliated Stomatology Hospital, Zhejiang University School of Stomatology, Hangzhou, P.R. China.

**Gang ZHOU**, School and Hospital of Stomatology, Wuhan University, Wuhan, P.R. China.

**Bin CHENG**, Guanghua School and Hospital of Stomatology, Sun Yat-sen University, Guangzhou, P.R. China.

**Zheng SUN**, Capital Medical University School and Hospital of Stomatology, Beijing, P.R. China

**Qing LIU**, School of Stomatology, Air Force Medical University, Xi'an, China.

**Yu Xing ZHANG**, Beijing Hospital, Beijing, P.R. China.

## Reference

1. Hua H, Liu HW. Diseases of Oral Mucosa. 1<sup>st</sup> ed. Beijing: Peking University Press, 2014:83-84. (Book in Chinese)
2. Chen QM. Diseases of Oral Mucosa. 4<sup>th</sup> ed. Beijing: People's Medical Publishing House Co., LTD, 2012, Chap.7:64-65. (Book in Chinese)
3. Greenberg MS, Glick M. Burket's Oral Medicine: diagnosis and treatment. 11<sup>th</sup> ed. Hamilton, Ontario: B.C. Decker Inc., 2008:57.
4. Huling LB, Baccaglini L, Choquette L, Feinn RS, Lalla RV. Effect of stressful life events on the onset and duration of recurrent aphthous stomatitis. J Oral Pathol Med 2012;41:149-152.
5. Society of Oral Medicine, Chinese Stomatological Association; Society of Traditional Chinese Medicine Combined with Western Medicine, Chinese Stomatological Association. Guidelines for the diagnosis and management of recurrent aphthous ulcers (draft). Zhonghua Kou Qiang Yi Xue Za Zhi (Chinese Journal of Stomatology) 2012;47:402-404. (in Chinese)
6. Baccaglini L, Lalla RV, Bruce AJ, Sartori-Valinotti JC, Latortue MC, Carrozzo M, Rogers RS 3rd. Urban legends: recurrent aphthous stomatitis. Oral Dis



- 2011;17:755-770.
7. Brocklehurst P, Tickle M, Glenny AM, Lewis MA, Pemberton MN, Taylor J, Walsh T, Riley P, Yates JM. Systemic interventions for recurrent aphthous stomatitis (mouth ulcers). *Cochrane Database Syst Rev* 2012;9:CD005411.
  8. Wang T, Zhang X, Wang J. The clinical evaluation and comparison of total glycosides of paeony and vitamin B2 in the treatment of recurrent aphthous ulcer. *Shiyong Kou Qiang Yi Xue Za Zhi (Journal of Practical Stomatology)* 2013; 29:686-689. (in Chinese)
  9. Zhou P, Mao Q, Hua H, Liu X, Yan Z. Efficacy and safety of Chinese patent medicines in the treatment of recurrent aphthous stomatitis. *J Am Dent Assoc* 2017;148:17-25.
  10. Cabras M, Gambino A, Broccoletti R, Lodi G, Arduino PG. Treatment of angular cheilitis: A narrative review and authors' clinical experience. *Oral Dis* 2019 Aug 29. doi: 10.1111/odi.13183. [Epub ahead of print].
  11. Society of Oral Medicine, Chinese Stomatological Association. Standard for evaluation of effect for oral lichen planus (erosive, atrophic) (trial implementation). *Zhonghua Kou Qiang Yi Xue Za Zhi* 2005;40:92-93. (in Chinese)
  12. Alrashdan MS, Cirillo N, McCullough M. Oral lichen planus: a literature review and update. *Arch Dermatol Res* 2016; 308:539-551.

**12. Experience of Diagnosis and Management of Patients in Oral Maxillofacial Surgery during the Prevention and Control Period of the New Coronavirus Pneumonia**

<http://cjdr.cndent.com/uploads/media/200402/13-200402144342.pdf>

**13. The Guidelines on Prevention and Disease Control in Dental Practice during the Outbreak of Corona Virus Disease 2019**

<http://www.cndent.com/archives/70951>

## **The Guidelines on Prevention and Disease Control in Dental Practice during the Outbreak of Corona Virus Disease 2019**

Stomatological Healthcare Service Branch of Chinese Stomatological Association<sup>1</sup>

The Corona Virus Disease 2019 (COVID-19) has become a worldwide pandemic, seriously jeopardizing people's health. The National Health Commission and regional health administrations have issued regulations on the prevention and control of COVID-19. There are many invasive treatments in dental practice, differentiating it from other medical practice. The following guidelines were made by experts from Stomatological Healthcare Service Branch of Chinese Stomatological Association to suggestions on preventing COVID-19 outbreak in dental clinics. The Guideline is in accordance of relevant laws and documents from health administration, from the technical level in combination with the characteristics of dental treatment. Dental institutions can take these suggestions as a reference, on the basis of the local epidemic and its actual situation. It is anticipated to be helpful to different scale of dental institutions for the epidemic prevention.

**Key words:** corona virus disease 2019 (COVID-19), oral management, nosocomial infection prevention and control

In December 2019, some cases of unexplained pneumonia were found in Wuhan, Hubei Province, which was later confirmed and named as Corona Virus Disease 2019

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<sup>1</sup> Written by Dr Xiao Huan ZHANG, Guanghua School and Hospital of Stomatology, Sun Yat-sen University, Guangzhou, P.R. China.

**Corresponding author:** Prof. Jun Qi LING and Dr Xiao Huan ZHANG, Guanghua School and Hospital of Stomatology, Sun Yat-sen University, 56# Lingyuan West Road, Guangzhou 510055, P.R. China. Tel: 86-20-83863002; Fax: 86-20-83822807. Email: lingjunqi@163.com; zhxhuan@mail.sysu.edu.cn

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(COVID-19). The epidemic rapidly spread throughout China in an unprecedented way. The National Health Commission of the People's Republic of China has classified the pneumonia as a Class B infectious disease under *China's Law on the Prevention and Treatment of Infectious Diseases* and taken it as a Class A infectious disease to control. To effectively reduce the risk of disease transmission during the outbreak in dental institutions and protect the safety of both dentists and patients, in line with the documents issued by the National Health Commission, *Notification of Diagnosis and Treatment Program of the Pneumonia Caused by COVID-19 (Trial Sixth Version)* (National Health Office Medical Letter [2020] No.145; editor's note: it has been updated later to the seventh version), *Technical Guidelines of Prevention and Control of the Pneumonia Caused by COVID-19 (First Version)* (National Health Office Medical Letter [2020] No.65; editor's note: it has been updated to the sixth version) and *Guidelines of the Common Medical Protective Equipment for Protection of Pneumonia Caused by COVID-19 (Trial)* (National Health Office Medical Letter [2020] No.75), in combination with the characteristics of dental treatment, the followings are suggested for the disease prevention and control, according to the local epidemic situation, as well as the regulations from local health administration.

### **Basic principles**

- Dental institutions shall pay close attention to the epidemic situation announcements issued by the government and the health administration and provide dental services according to the disease prevention and control measures.
- It is required to strengthen the management, formulate plans, regimes and process guidelines for the prevention and control of COVID-19, provide training for all staff on disease prevention and control knowledge, and promote awareness, particularly amongst the healthcare personnel, delivery driver, security personnel, cleaning personnel, etc., avoid crowd gathering in public places, reduce and shorten meetings or have meetings or training by video and online.
- The pre-examination triage system shall be strictly implemented to ensure early

detection, early reporting, early isolation and early treatment, and sufficient protective equipment and disinfectants shall be prepared in compliance with the national standards.

- It is also needed to formulate the system of duty arrangement for healthcare personnel, and manage the healthcare personnel with symptoms and epidemiological history according to "*Diagnosis and Treatment Program of the Pneumonia Caused by COVID-2019 (Trial Sixth Version)* ", arrange the work of the medical personnel in a reasonable way, avoid overwork, monitoring the health status and epidemiological history among healthcare personnel.
- Healthcare personnel are required to strictly carry out standard prevention, and to perform the hospital infection control protocol such as personal protection, hand hygiene, management of the clinic room, ventilation, environment surface cleaning and disinfection, instruments reprocessing and waste control during the dental practice, so as to avoid healthcare associated infection.
- During the severe period of epidemic and in the outbreak areas, dental practice shall be determined in accordance with the requirements of the local health administration and the CDC. Complete cessation of outpatient can be carried out, and only emergency treatment reserved (such as oral and maxillofacial trauma, oral space infection, acute pulpitis, temporomandibular joint dislocation, acute phase of pericoronitis, etc.). It is recommended to make full use of internet media or social contact for the publicity. Patients are advised to carefully arrange dental visit and postpone non-emergency treatment. Meanwhile, online consultation and appointment reservation service can also be provided.
- During dental practice, a large quantities of droplets and aerosols can be produced through the oral power device from patients' saliva, blood and secretions<sup>1,2</sup>, which pose high risk of disease transmission environment between dentists and patients. Spray equipment such as rapid turbines and ultrasonic tooth cleaning machines<sup>3</sup> should be avoided or be minimized during the disease epidemic. It is better to use auxiliary equipment such as rubber barrier<sup>3</sup> and high volume suction<sup>4,5</sup> to reduce droplets and potential bioaerosol pollution.

## **Pre-examination triage of patients**

Dental institutions should establish the pre-examination triage system, set up corresponding position and train enough personnel to perform the pre-examination triage of patients. All patients entering the healthcare institutions should receive pre-examination triage. It is required to monitor the temperature of the patients, collect their epidemiological history, identify suspected cases at an early stage and provide correct treatment and guidance, in order to achieve the purpose of “early detection, early isolation, and early treatment”.

### *Personal protection of pre-examination triage personnel*

During the disease epidemic, specific personnel shall be designated and trained for the pre-examination triage. Pre-examination triage personnel should wear disposable hats, surgical masks, work clothes and isolation suits, as well as goggles. First, patients should be instructed to carry out hand hygiene. Patients without masks and their accompany personnel should be provided with masks and instructed on how to wear it properly<sup>6</sup>. The companion should be as far as possible reduced or prohibited if the patient's condition permits. An appropriate distance (>1 m) should be maintained during consultation to reduce the risk of transmission<sup>7</sup>. Hand hygiene should be conducted immediately after each contact with the patient<sup>8</sup>.

### *Setting requirements for pre-examination triage points*

The pre-examination triage point is clearly marked with identification, relatively independent location and well ventilated, so as to ensure the pre-examination is carried out as priority for the outpatients (emergency) and their companion. Enough surgical masks, forehead thermometer, rapid hand sanitizer or 75% alcohol must be available.

### *Responsibilities of the pre-examination triage personnel*

Patients and accompany personnel are required to wear masks when entering medical facilities. In accordance of the *Notification of Diagnosis and Treatment Program of the Pneumonia Caused by COVID-19 (Trial Sixth Version)*, patients and their companion should be monitored for body temperature and inquired for epidemiological history, as well as an individual investigation form to be completed. The investigation includes ① whether there are fever, cough and other respiratory infection symptoms; ② within 14 days, whether there is a travel history or residence history in Wuhan and its surrounding areas or other communities with cases reported; ③ within 14 days, whether there is a contact history with COVID-19 infected person (Nucleic Acid Test positive); ④ within 14 days, whether there is a contact history with patients having fever or respiratory symptoms from Wuhan and its surrounding areas, or from communities with cases reported; ⑤ whether there are confirmed clusters of COVID-19 cases in living and working areas.

#### *Disposal of pre-examination triage screening*

On the basis of the situation of pre-examination screening, the patients were disposed in triage.

- For asymptomatic patients with a positive travel history to the epidemic area or contact history of suspected COVID-19 patients or having epidemiological history, it is recommended home isolation and change appointment for treatment if it is not critical or severe dental emergency. If it is a dental emergency or it really needs immediate treatment, prevention and protection should be performed and the treatment should be arranged immediately by registering and recording the information of dentists, assistant and patients.
- For the patients with symptom such as abnormal body temperature but no contact history or epidemiological history, if the patients have non-critical dental disease, it is recommended to go to fever clinic in general hospital and select another time for dental treatment. If it is a dental emergency or it really needs immediate treatment, the prevention and protection should be performed, and the treatment should be arranged immediately by registering and recording the information of

dentists, assistant and patients.

- For the patients with symptom such as abnormal body temperature and having travel history in epidemic area or contact history with suspected COVID-19 patients, it is required to protect other patients and healthcare personnel, lead the patients into the designated area (quarantine point), and immediately report to the personnel responsible for disease prevention and control as well as the hospital infection control department, and carry out the quarantine and referral according to the requirements of local authorities.

#### *Cleaning and disinfection of the pre-examination triage area*

The triage table and forehead thermometer should be kept clean. It is required to clean and disinfect the triage table and forehead thermometer every two hours or at any time in case of contamination. It is recommended to use 75% alcohol or disinfection wipes (containing the effective ingredients against 2019-nCoV) or chlorine disinfectant (500 mg/L effective chlorine content) to wipe and disinfect. If the suspected patient has been referred, the quarantine point should be cleaned and disinfected in time and registered.

### **Outpatient treatment**

#### *Settings of the clinic room*

In principle, it is required to use an independent or relatively independent treatment unit. If spatter exists during practice, it should be performed in an independent room<sup>7</sup>. All items irrelevant to the treatment should be removed or put into the cabinet and the surface should be neat to facilitate the disinfection<sup>9</sup>. During the practice, it should maintain airflow and make fresh air infuse ceaselessly indoor by opening a window or using air purification device<sup>7</sup>.

#### *Principles of diagnosis and treatment*

Based on the strict following of standard prevention, additional preventions should be



added such as goggles, double gloves and isolation suits. It is recommended to adopt four-hand operation. In the practice, low-speed handpiece or manual device can be used instead of high-speed handpiece in view of the transmission route of the 2019-nCoV "with the possibility of aerosol transmission under the condition of prolonged exposure to high concentrations of aerosols in a relatively closed environment". In the area with severe epidemic, high-speed handpiece, ultrasonic tooth cleaner and air water syringe and other spatter equipment should be avoided. In case of spillage operation, the disinfection should be done for each patient and each room.

#### *Protection requirements during dental practice*

##### Patient management

Healthcare personnel should monitor patient's temperature, symptoms and relevant epidemiological history before treatment. At the beginning of treatment, the patient should be asked to gargle with mouthwash. It is recommended to avoid using or not to use the spittoon. Instead, it is needed to instruct the patient to cover mouth with the disposable mouthwash cup and then spit mouthwash into the cup, then the nurse should immediately use strong suction to reduce the generation of droplets and aerosols.

##### Personal protection for healthcare personnel

During the epidemic of COVID-19, healthcare personnel should first strictly implement standard prevention. In order to better prevent the risk of transmission through droplets and contact during dental treatment, and to ensure the safety of dentists and patients, healthcare personnel should add additional preventive measures on the basis of standard prevention during treatment, such as the application of goggles, isolation suits and double gloves.

1) When performing non-invasive and non-splash general treatment, disposable hats, surgical masks, disposable latex gloves, goggles and work clothes should be worn, and the isolation suits could be added.

2) For splash operation, disposable hats, surgical masks or surgical protective masks (N95, N99, etc.), disposable latex gloves, goggles and/or protective face shields, work clothes and disposable isolation suits should be worn. Healthcare personnel should pay attention to the sequence of wearing and removing of personal protective equipment, and strictly implement hand hygiene in the process<sup>10</sup>. At the same time, it is recommended to register and record dentists, assistant and patients' information for two-way traceability.

3) Medical protective masks should be tested for tightness after wearing. The duration of use of the mask is generally no more than 4 hours, and the replacement is needed in case of pollution or humidity at any time. It is recommended to dispose the mask after each patient<sup>11</sup>. After each treatment, the goggles and protective face shield should be cleaned, disinfected and dried. It can be disinfected with 75% alcohol, 500 mg/L~1000 mg/L chlorine-containing disinfectant or disinfectant wipes which is effective against 2019-nCoV.

4) Protective equipment such as goggles, protective face shield, isolation suit and protective clothing shall be used in the dental unit (beside the dental chair) and shall be removed when leaving the room. When removing the protective equipment, the hands shall not touch the contaminated surface, handle it from inside to outside, and perform hand hygiene timely. Disposable items cannot be reused.

5) Supportive departments (radiology department, laboratory department, pathology department, etc.) should use protective equipment in a reasonable way, including surgical masks, disposable hats, goggles, isolation suits, gloves, etc. The radiology department shall reduce the shooting of the inner teeth and can use the panoramic film instead. When shooting the panoramic film, the technicians and patients shall wear masks all the time.

6) Hand hygiene of healthcare personnel shall be strictly implemented in accordance with the *Hand Hygiene Code for Medical Personnel* (WST313-2019). Do not touch mouth, nose, eyes, etc. with contaminated hands.

7) Occupational exposure shall be strictly treated in accordance with the *Guidelines on Occupational Exposure Protection Against Blood-borne Pathogens*















