

# Perioperative management by WeChat under the haze of COVID-19

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**Dear Editor,**

We come up with an e-health perioperative management strategy based on WeChat during the outbreak of COVID-19. The novel coronavirus pneumonia called coronavirus disease 2019 (COVID-19) was of clustering onset and able to cause severe and even fatal respiratory diseases such as acute respiratory distress syndrome<sup>[1]</sup>. Responding to COVID-19, numerous hospitals canceled several general clinical practices such as Stomatology, Ophthalmology, and Rehabilitation Department, resulting in hard access to some medical services to protect patients and doctors.

Although some diseases related to the departments mentioned above are not fatal, their persistence would much annoy the patients. Besides, the delayed treatment of some diseases may cause irreversible consequences, such as retinal detachment and acute close-angle glaucoma. Under such a situation, numbers of patients were anxious and frustrated by offline-visit access blocking, capricious medical information, and the fear of COVID-19. Surgeons are also bothered by the rapidly changing surgery arrangement, as they need to inform all the patients through telephone calls. E-health, promising a multipoint entrance to the medical system by delivering various

medical services in a nonlinear, nonhierarchical manner<sup>[2]</sup>, was to be highlighted. However, the potential serious challenges posed by traditional e-health should not be underestimated as information, diagnosis, treatment, and care are provided through unfamiliar channels<sup>[3]</sup>, especially in patients receiving surgeries, and undergoing long-term follow-up. Thus, a trusted, convenient, secure, precise, and personalized e-health unit is urgently needed to solving such a dilemma.

Accordingly, we cast our sight to the WeChat platform that was established in July 2019. This platform centered on a single ophthalmologist for perioperative management. This platform is managed by special-assigned people. At present, patients can add this WeChat platform by scanning the quick response (QR) code of the WeChat when they visit the doctor or knowing the related access to the platform on the Official Account. Moreover, new patients can contact us by recommendation of other patients, which is a hidden pathway. With the prevalence of online hospital registration booking, we think access to the WeChat platform could be reasonably attached to the doctors' instruction in the future. Aiming to promote the communication with perioperative cataract patients, we delivered various services, including preoperative consultation, online surgery appointment scheduling, medication guidance, online referral, follow-up reminder, medical information announcement, and general message. Online referral occurs when the surgeon considers the patient's condition is beyond his capability or specialty after web inquiry. General message allows patients to ask some simple questions electronically, avoiding many unnecessary offline visits and phone calls (e.g., "Where should I go if I want to take my examination results?"). Such an electronic unit provides personalized perioperative care, as patients can easily contact the surgeon who knows their medical history.

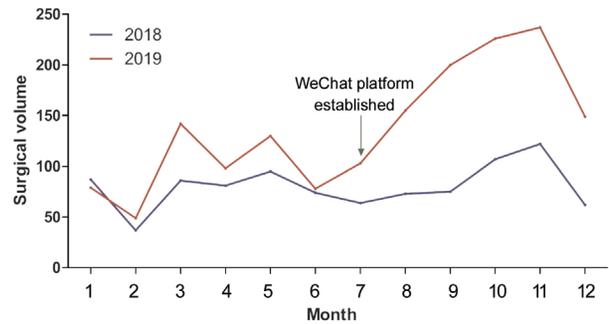
During the outbreak of COVID-19, we timely and conveniently informed the patients by posting the changing schedules on Moments, mentioning patients in the group chat, and mass messaging. Compared with phone calls, patients could choose typing, voicing, photographing, or videoing to provide their information precisely, which produced efficient communications and accurate assessments. For fear of COVID-19, patients would hesitate if they must go to the

hospital when they feel uncomfortable. Contacting us through WeChat, patients made relatively more reasonable decisions, which lowered the population aggregation, protected the patients and doctors, and prevented the spread of COVID-19. When the patients had to go to the hospital, they received targeted examinations after the online visit, with subsequently shortened detention time.

Different patients have different demands. Overall, we divided patients into different groups: 1) For patients who need no urgent treatment or postoperative patients, online illness explanation, life guidance, and medication instruction are provided through WeChat. 2) For patients who need elective surgery, their surgeries would be postponed and arranged. Once the COVID-19 is controlled, they will be informed of the scheduled surgery time through WeChat. During the waiting period, patients can contact us through WeChat if their condition deteriorates. 3) For patients who need emergent surgery, their surgeries would be scheduled as soon as possible. To shorten the medicine-unrelated time that patients cost, we provided a flowchart and answered the problems patients met in the hospital through WeChat. During the period between 24<sup>th</sup> Jan. and 24<sup>th</sup> Feb. 2020, we comforted 96 dysphoric patients who consulted us online, with twenty-four waiting for surgery, fifteen insisting or needing offline examination, and fifty-six having completed or delayed follow-up schedule online. For these 15 patients, we helped them contact the corresponding doctors to shorten the visit time, significantly relieved their anxiety.

Why did we choose WeChat? Compared with other forms of online communication, WeChat is widespread in China with monthly active accounts over 1.1 billion by September 2019, covering over 80% of the Chinese population. By September 2018, the number of monthly active users over 55 years old reached 63 million, with 45 billion messages sent and 4.1 hundred million voice- or video-calls dialed per day. Moreover, WeChat is open, unrestricted, and accessible. Through a familiar channel, patients can freely contact us repeatedly whenever they have questions, assuring themselves guided at each step, and they would be much more comforted and willing to follow the doctor's instructions. Although WeChat performs better than the traditional e-health platform, it cannot replace the offline visit, either. It is difficult for patients to precisely express the clinical features of their disease by themselves, which can limit the doctor-patient communication. Therefore, offline visits cannot be avoided entirely.

Despite the advantages of e-health and the positive attitudes towards e-health from most patients and doctors<sup>[4-5]</sup>, doctors are hesitant to afford this form of management that might increase their workload without extra payment. This problem seems to



**Figure 1 Increase of surgical volume through the running of WeChat platform for perioperative management from 2018 to 2019.**

be more noticeable in the WeChat-based platform because of its feature of freedom. The issue of surgeon reimbursement should not be worried too much, as such an online platform is prone to be an invisible treasure when patients prefer to trust the surgeon than ever. By establishing a WeChat group and Official Accounts centered on one single surgeon, patients are more willing to follow and trust the instruction and guidance from the surgeon. Until now, the surgeon in our group posed a total increment of 683 cataract surgeries in 2019 (Figure 1), most of which obtained after WeChat platform establishment (116 before WeChat platform establishment; 567 after WeChat platform establishment).

Another problem that the WeChat platform has the potential medical conflict. For doctors, there are inevitable barriers to assess patients thoroughly online, and they should be much more cautious of their every decision to avoid misdiagnosis. As every word is recorded on WeChat, the terms might be used as evidence by patients when a medical dispute occurs. Thus, this requires doctors to be more careful of their expression to protect themselves. In contrast, the records also can be a protection for doctors in such situations if the doctors deliver right and proper advice or prescription.

In the future, e-health is to play an indispensable role in the management of patients. The traits of such management platforms based on online chatting tools (e.g., WeChat in China, Facebook in America), including credit, convenience, accuracy, security, and personalization, can significantly relieve patients' anxiety, especially under catastrophe like COVID-19.

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