

ELECTIVE (SSC5b) REPORT (1200 words)

A report that addresses the above four objectives should be written below. Your Elective supervisor will assess this.

Sinusitis is a very common condition in China(1), with common causes of sinusitis including particulates such as air pollution or allergens that irritate the nasal passage, recurrent upper respiratory tract infections, or anatomical issues in the nasal passage(2). Sinusitis is particularly frequent in the large cities of China, such as Beijing and Shanghai(3, 4), where air pollution reaches levels that are considered dangerous.

The majority of patients that present to the Ear Nose and Throat (ENT) department in Chenzhou's No.1 People's Hospital with signs and symptoms of chronic sinusitis, particularly with nasal polyps. The Beihu district that the hospital serves contains a large amount of vegetation that complements its sub-tropical climate. In comparison to the large cities of China, Chenzhou's air pollution is minimal (5), suggesting a different attributing factor to sinusitis in Chenzhou rather than air pollution. The prevalence of sinusitis of both the United Kingdom (UK) and China is 12.6%(1), however there is no data on the prevalence or incidence of sinusitis in Chenzhou and London. A comparison between the correlation of sinusitis and air pollution of Chenzhou's population and London's population therefore cannot be made.

Chenzhou is classified as a humid subtropical climate area(6), frequently experiencing rain, humidity and temperature fluctuations throughout the year. The dramatic weather changes are believed to trigger non-allergic rhinitis episodes, which leads to sinusitis and nasal polyp formation. Although there is little to moderate air pollution in Chenzhou, there is a large population of China that smokes tobacco - China's prevalence of tobacco smoking is 25.3% (males: 47.6%; females: 1.8%), whilst UK's prevalence of tobacco smoking is 19.2% (males: 19.9%; females: 18.4%)(7). First-hand and second-hand smoking is a risk factor for rhinosinusitis and nasal polyp formation, as the particulates from smoking can irritate the nasal lining. Smoking is also believed to be a contributing factor for the large amount of sinusitis presentations to the hospital's ENT department. Although both climate and smoking is considered the cause of high prevalence of sinusitis, there are currently no audits or research in Chenzhou on sinusitis to ascertain a correlation with these risk factors.

China provides healthcare to its citizens mainly through its large hospitals, with patients referring themselves to the desired department for a specific presenting complaint. This effectively means the hospital acts as primary, secondary, and tertiary centre if using UK's healthcare-level classifications. Patients can choose to admit themselves to either a hospital that practices Western Medicine or a hospital that practices Chinese Medicine, with both providing a similar service but with a different set of treatments. China does not have a 'General Practitioner' or 'Family Physician', therefore the onus of taking care of one's health resides in the patient themselves to go to hospital for check-ups or if there are any medical concerns. Some institutions hire an in-house doctor, such as factories or schools, who provide medical advice and first aid to the institution's employees or students, but ultimately will send patients to the nearest hospital if they need further medical attention.

On arrival to the hospital reception, a patient can present his or her symptoms, or request to be seen by a doctor from a particular department. The patient will then choose the quality of service they want. For example, the more expensive 'VIP' package will involve a stay in a modern ward and under the care of an experienced or reknown doctor, whilst the cheaper 'regular' package includes a stay in

a crowded ward under the care of a less experienced or reknown doctor. The patient will then have any necessary scans or endoscopies which are printed and handed to the patient, to be shown to the specified doctor that they have 'hired' to treat them. The doctor will then provide a plan or admit the patient to the ward. In the case of the ENT department, patients are usually given instructions to return the next morning, and not eat breakfast to prepare for surgery in the morning. This process usually takes up to an hour to two hours.

In comparison to the UK healthcare system, the Chinese healthcare system is more efficient and arguably more patient-centred. A Chinese patient can choose when to go in to hospital, the department and doctor, and the level of service all with minimal waiting times. The UK healthcare system requires the referral to a specialist from a General Practitioner with no choice of doctor and limited freedom of when appointments occur, with all processes involving long waiting times. For acute medical problems or emergencies, the Chinese and UK healthcare provisions are similar in that the ambulance service will present a patient to the emergency department who will treat any acute problems and either discharge or admit the patient into hospital.

Both healthcare systems have issues and benefits. As the Chinese healthcare system requires payment to access it, it may be difficult to access for patients who cannot afford the healthcare. Hospitals are also overburdened due to the absence of medical options in the communities, which leads to an overall poorer level of service for patients. The UK healthcare system takes longer to access healthcare, but the service provided is consistently at a good standard and free. The healthcare provisions in China are therefore more efficient than UK, however it is at the expense of quality of treatment and requires the patient to pay.

Access to ENT treatment in China is relatively easy, as an pre-operative appointment for elective surgery with one of ten surgeons with a Computerised Tomography (CT) scan, or endoscopy can be done within an hour of arriving to hospital. The hospital wards are also never at full capacity and there are always ten surgeons in the department available, therefore surgery can be done within the next day and the patient can stay on the ward post-operation. However, the wards are overfilled, approximately accommodating 60 patients at one time. Some beds are situated in the corridor, whilst other beds are cramped into a small room.

The surgeons are able to operate and see a large amount of patients compared to the UK due to logistical differences. Due to the high amount of patients, ward rounds must be quick to be able to keep to the working schedule. Some patients are only seen to for approximately two seconds, and no observations, notes, or drug charts are considered. Surgeons also do not have clinics or follow-ups with patients. Patients therefore visit hospital for an issue and are discharged once the issue is resolved. Surgeons finally do not perform any clinical tasks such as taking bloods or reboarding drug charts, as these are performed by the nurses. This leaves Chinese surgeons with far more time to operate than the UK counterpart, however this logistical difference may not be as safe as the UK.

Air pollution is a contributing factor to primarily chronic sinusitis, therefore placing a large burden to the China's ENT departments with endoscopy nasal polyp removal and sinus surgery. However in Chenzhou, air pollution is a small factor that contributes to sinusitis, and it is believed to be due to smoking and climatic changes. Air pollution mainly affects the respiratory system(8), and therefore respiratory complaints due to air pollution are more common than ENT-related complaints in China.

In conclusion, China's and UK's healthcare system are vastly different to each other. Both systems have their benefits, but also their unique issues. Sinusitis is a common presentation in China, however Chenzhou's population suffering from sinusitis may be due to additional factors in comparison to larger cities of China where air pollution is a larger problem. Finally, patients can easily and quickly access healthcare in China in comparison to the UK, but this may not be the quality of service that is expected in the UK.

References

1. CureResearch. Statistics by Country for Chronic Sinusitis (2004). Available at: http://www.cureresearch.com/c/chronic_sinusitis/stats-country_printer.htm [Accessed: 02/05/2018].
2. Ah-See KW, Evans AS (2007). Sinusitis and its management. *BMJ: British Medical Journal*. 334(7589):358-361.
3. Plume Labs (2018). Pollution Beijing: This year's pollution levels in Beijing. Available at: <https://air.plumelabs.com/en/year/beijing> [Accessed: 30/04/2018].
4. Plume Labs (2018). Pollution Shanghai: This year's pollution levels in Shanghai. Available at: <https://air.plumelabs.com/en/year/shanghai> [Accessed: 30/04/2018].
5. World Air Quality (2018). Chenzhou Air Pollution: Real-time Air Quality Index (AQI). Available at: <http://aqicn.org/city/chenzhou/> [Accessed: 30/04/2018].
6. Arnfield AJ - Encyclopaedia Britannica (2017). Köppen climate classification. Available at: <https://www.britannica.com/science/Koppen-climate-classification> [Accessed: 01/05/2018].
7. World Health Organisation (2015). Tobacco use - Data by country. Available at: <http://apps.who.int/gho/data/view.main.1805?lang=en> [Accessed: 01/05/2018].
8. Kelly FJ, Fussell JC (2015). Air pollution and public health: emerging hazards and improved understanding of risk. *Environmental Geochemistry and Health*. 37(4):631-649.