Case Study 3 – Antibiotics

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1. *Going to the doctor for a child's (or your own) infection can be time and resource consuming. Describe at least 2 ways computational tools could help lower the barriers to evaluating patients for a condition such as sore throat?*

Telemedicine is one, modern technological advancement which may aid in lowering the barriers to evaluating patient conditions. Telemedicine allows patients to communicate with their health care providers without actually having to have an in-person visit [1]. Simple medical diagnoses for common symptoms such as sore throat, high fever, or even general observation can all be done through telemedicine. By observing a patient through a web camera, hearing their symptoms through a microphone, or directing them to simple self-examination, doctors can prescribe medication without ever having to meet face-to-face.

Wearables are another recent technological advancement which can help doctor's remotely diagnose simple patient illnesses. Modern wearables can detect SPO2, pulse, electro-cardiograms and a multitude of other bodily factors which may help doctors diagnose a patient [2]. In certain circumstances, it may be possible for a doctor to not even interact with a patient, but simply review their health data, and determine that an underlying condition is causing a negative outcome on a patient's health simply by analyzing the historical body status as reported by wearable sensors.

2. *What are some ways computational solutions could inform doctors to reduce inappropriate prescribing?*

Wearables and remote sensor technologies can both keep patients on the right track as well as protect patients from overprescribed medications. The VitalCare platform, as an example, provides seniors an all-in-one access point for keeping track of medications, nutrition and vital signs through blood-pressure monitors, pulse oximeters and other sensors built right into their Patient Monitoring Platform [3]. Using the device, the patient can keep track of their progress and the doctors administering medication can get around-the-clock reporting on all vitals, as well as any possible interactions between current drugs, new drugs, or alternatives that the patient may introduce as time goes on.

3. *What are some ways computational solutions could "catch and educate" patients when they are thinking of requesting antibiotics?*

Telehealth is one solution which helps to "catch and educate" patients on antibiotics use, or promote antibiotic stewardship of the healthcare provider. Telehealth helps link small rural healthcare providers with limited budgets, resources, staff, and knowledge bae with metro-hospitals which have specialists in infectious diseases [4]. Through regular conferencing and knowledge sharing, rural health providers can better serve their local populations by advising against antibiotics when not necessary.

References

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