Computational Biomedicine
with Dr Linwei Wang

Talking *points*

KNOWLEDGE

1. Name three things that ChatGPT is capable of.
2. What is cardiac output?

COMPREHENSION

3. What is ventricular tachycardia and what causes it?
4. How will the artificial intelligence (AI) model used in Heart Seat help clinicians to prevent hospitalisation due to heart failure?

APPLICATION

5. As a clinician, how could you use AI to help you do your job?

ANALYSIS

6. Why is ECGi not normally used in ventricular tachycardia treatment, and how will Linwei's new AI model change this?
7. How is Heart Seat different to other forms of in-home monitoring?

SYNTHESIS

8. Where else in a patient's house might an in-home monitoring device be effective?
9. How could Heart Seat be improved to ensure that a patient's treatment is delivered as efficiently as possible?

EVALUATION

10. How effective do you believe Heart Seat will be compared to other forms of in-home monitoring?
11. To what extent do you believe that AI is likely to have a positive or negative impact on society?

Activity

Design a new in-home monitoring device.

Heart Seat is innovative because users do not have to think about using it. They could completely forget it was there, and it would still collect their data and alert their physician if they were in danger of suffering from heart failure.

Apart from toilet seats, there are many household objects that are used every day. Think of another household object or appliance that could be transformed into a new in-home monitoring device.

Think about:

- How easy it would be to install
- How regularly your device could be used
- The types of data the device could collect
- How it could send this data to a clinician
- The kinds of health issues your device could help to detect.

Give your device a name and create a poster that advertises your new creation. Be sure to explain why your device is needed, what the benefits of it are and how it is different to other kinds of in-home monitoring devices. You could even include a diagram of your device to really bring it to life.

Present your poster to the rest of the class.

More *resources*

- The computational biomedicine lab at the Rochester Institute of Technology has a website where you can keep up to date with its latest research: **pht180.rit.edu/cblwang**
- Read this article on how computational biomedicine is revolutionising healthcare: **www.cedars-sinai.org/newsroom/how-will-computational-biomedicine-transform-healthcare**