

Epreuve écrite

Examen de fin d'études secondaires 2013

Section:

B-G

Branche:

Anglais

Numéro d'ordre du candidat

THE FUTURE OF MEDICINE

It's June 2018. Sally picks up a handheld device and holds it to her finger. With a tiny pinprick, it draws off a fraction of a droplet of blood, makes 2000 different measurements and sends the data wirelessly to a distant computer for analysis. A few minutes later, Sally gets the results via e-mail, and a copy goes to her physician. All of Sally's organs are fine, and her physician advises her to do another home medical checkup in six months.

That is what the not-so-distant future of medicine will look like. Over the next two decades medicine will change from its current reactive mode, in which doctors wait for people to get sick, to a mode that is far more preventive and rational. This will be called P4 medicine : predictive, personalized, preventive and participatory. Several emerging technologies are making this new approach to disease possible. Nano-size devices will measure thousands of blood elements, and DNA sequencers will decode individual human genomes rapidly, accurately and inexpensively. New computers will sort through huge amounts of data gathered annually on each individual and boil down this information to clear results about health and disease.

Future medicine will be predictive and personalized (the first two P's of P4 medicine). Over the next five to ten years doctors will be able to sequence the genome of each patient, which together with other data will yield useful predictions about his or her future health : it will be able to tell you precisely what the weak points of your body are. In preventive medicine (the third P) researchers will develop drugs that help prevent disease. If you know what illness you are likely to develop, you may be able to start taking a drug when you are 30 that would substantially reduce that probability. Participatory medicine (the fourth P) will allow patients to take control of their own health care. New companies are already planning to provide patients with genetic information that may be useful in modifying their behaviour to avoid future health problems : such as giving up smoking if a predisposition to lung cancer is detected.

P4 medicine will have a big impact on many industries, including pharmaceuticals and insurance. Medical education will also need to be transformed. Although today's medical students will be practising P4 medicine within the next ten to twenty years, their training is still focused on relatively few measurements of health parameters. Tomorrow's physicians will need to be familiar with the complexity of the human biological system as never before, and they'll have to be handy with computer-based tools.

They will be dealing with patients who have an enormous amount of information at their disposal. They will no longer concentrate on dealing with disease.

The focus of health care will shift from dealing with disease to maintaining wellness.

adapted from 'Newsweek' 495 words

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A) Answer the following questions (in your own words as far as possible) 30m

1. In what way is Sally's medical check-up both efficient and time-saving? (6m)
2. What technological advances make this medicine of the future possible? (6m)
3. What is P4 medicine and how does it work in practice? (12m)
4. Why will the education of future doctors have to change? (6m)

B) Essay (30m)

Discuss the following topic in an essay of 250- 350 words:

In our modern society it is no longer possible to live a healthy life.

Indicate the number of words used.