

問題①

Question①

Read the article and answer the following questions in English.

The text of the question has been omitted for copyright protection. Please refer to the following sources.

(Adapted from Lawler Mark et al. *The Lancet Oncology*, Volume 26, Issue 4, p 406 – 408, April 2025)

Questions①

1. Identify three salient changes in cancer research in the USA after President Trump took office in 2025. Describe each salient change within 20 words.
2. Which of the following is NOT mentioned as a policy change under the 47th President's administration that may impact cancer research?
 - A. Restrictions on scientists' travel
 - B. Introduction of a national cancer screening program
 - C. Cancellation of research grant meetings
 - D. Termination of grants considered contrary to administration's values
3. Which past initiative is implied to have ended under the new administration?
 - A. The Global Health Security Agenda
 - B. Project Orbis
 - C. The WHO-US Joint Cancer Taskforce
 - D. The Cancer Moonshot
4. What was a major achievement of the Ireland-Northern Ireland-US NCI Cancer Consortium?
 - A. Establishment of new NCI headquarters in Europe
 - B. Development of a vaccine for pancreatic cancer
 - C. A dramatic increase in joint publications and improved cancer survival rates in Ireland
 - D. Expansion of US healthcare insurance into Europe
5. What does the editorial suggest about the broader impact of a US retreat from global cancer engagement?
 - A. It will increase cancer drug prices worldwide
 - B. It may cause long-term stagnation or decline in cancer control, especially in low-resource settings
 - C. It will prompt UN intervention in US health policy
 - D. It will drive a surge in private international cancer funding
6. Why is the US alignment with Russia in the Ukraine conflict considered damaging in the context of cancer control?

- A. It undermines the moral authority of the US in global health leadership
- B. It promotes a Russian-led cancer initiative
- C. It diverts funding from cancer to defense
- D. It leads to higher radiation exposure in hospitals

7. What central message does the editorial convey about the future of US cancer policy?

- A. Private companies should take over all cancer research
- B. Budget cuts will lead to more efficient cancer care
- C. Cancer will be cured only with reduced global engagement
- D. The US must continue and expand its leadership role to improve global and domestic cancer outcomes

8. What does the article identify as essential to strengthening cancer control globally?

- A. Limiting international collaboration to avoid political friction
- B. Reducing regulation in cancer drug approvals
- C. Sustained funding and global cooperation from US institutions
- D. Shifting focus to mental health instead

問題②

Question②

Read the article and answer the following questions in English.

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(Adapted from Gordon D. Schiff, M.D. “AI-Driven Clinical Documentation — Driving Out the Chitchat?” *New England Journal of Medicine*. 2025 May 15; 392(19):1877–1879.)

Question②

1. Answer the questions (1)–(3) within 20 words each.

(1) Describe the reason why the author thinks the AI documentation software is “transformative” to their workflow.

(2) Describe the reason why the author feels it is important to include “social” information in patient notes.

(3) Describe the reason why the author was “shocked but not surprised” upon learning the software filtered out nonmedical conversations.

2. Based on the article, determine whether the following statements are right or wrong. Circle the appropriate answer in the answer sheet.

1) AI-based documentation software always produces flawless medical notes without any errors.

2) The author used to spend significant time editing notes after patient visits before using the AI software.

3) The AI software deliberately excludes social conversation because it is considered irrelevant to medical evaluation.

4) Including personal details in patient notes helped the author understand patients' medical issues in context and build trust.

問題③

Question③

Read the article and answer the following questions in English.

The text of the question has been omitted for copyright protection. Please refer to the following sources.

(From Mitch Leslie, Scientists discover ‘division of labor’ in mitochondria, *Science*, News 8 Nov, 2024. The text has been partially modified.)

Question③

1. Answer the questions 1)-3) within 30 words each.
 - 1) What did the researchers discover about how mitochondria operate within a single cell when nutrients are in short supply?
 - 2) According to the study, what are two differences observed in mitochondria that harbored the P5CS clusters?
 - 3) What are two potential implications of this mitochondrial division of labor mentioned in the article?

2. According to the article, are the following statements right or wrong? Circle 'True' or 'False' in the parentheses on the answer sheet.
 - 1) The study found that mitochondria specialize in energy-producing and molecule-manufacturing roles when the cell is under nutrient-rich conditions.
 - 2) According to the article, when scientists genetically modified the enzyme P5CS to prevent it from congregating, the mitochondria could no longer produce amino acids.
 - 3) The research indicated that while the mitochondrial division of labor can aid in wound healing, it has been shown to have no effect on the growth of cancer cells.
 - 4) Mitochondria that specialized in manufacturing molecules were observed to have the same wrinkled inner membrane as those specializing in energy production.

Answers to Question ①

1. Reading Comprehension (30 points; 10 points each for each thing)

Model Answer:

1. The cancellation of grant meetings and restrictions on conference travel may cause uncertainty among NIH and NCI staff.
2. Many employees may consider leaving their jobs, which could lead to a loss of experienced staff.
3. The U.S. withdrawal from the WHO and cuts to global health funding could harm cancer control in vulnerable countries.

2. B (10 points)

3. D (10 points)

4. C (10 points)

5. B (10 points)

6. A (10 points)

7. D (10 points)

8. C (10 points)

Answers to Question ②

1. (20*3)

(1)

It saved time and organized notes quickly with minimal errors, reducing long hours of editing after patient visits.

(2)

It helps build trust, understand patient context, and improve care by remembering personal details for future visits.

(3)

Because the software intentionally omits nonmedical talk, reflecting a design choice prioritizing clinical relevance over personal connection.

2. (10*4)

1) (False)

2) (True)

3) (True)

4) (True)

Answers to Question ③

1. (20*3)

- 1) They discovered that some mitochondria focus on producing energy (ATP), while others devote themselves to molecular manufacturing.
- 2) They are missing the enzyme that makes ATP and also lack the wrinkled inner membrane needed for efficient ATP production.
- 3) This division of labor could help cells heal wounds more efficiently. However, cancer cells might also exploit it to support their rapid growth.

2. (10*4)

- 1) False
- 2) True
- 3) False
- 4) False