Methods Big data technology is used to implement unified management and classify the heterogeneous distributed data. The symbolic method is then introduced for encoding and decoding based on the greedy method. In order to improve the convergence, the adaptive mechanism of quantum crossover probability and mutation probability is proposed.

Results Experiment contrast analysis shows that the quantum genetic algorithm can quickly converge to the optimal solution compared with other existing intelligent algorithms. Big data technology can manage and analyze complex traffic conditions, which helps to improve emergency vehicle routing, save time, improve journey accuracy and ensure time delays do not affect timely treatment.

Conclusions This method can meet the real-time requirements of the dynamic scheduling of medical rescue vehicles using the quantum genetic algorithm and big data technology. It can solve the problem of dynamic scheduling of medical rescue vehicles effectively.

| 61 | PRECISION MEDICINE AND HOLISTIC MEDICINE |

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Objectives To investigate future development patterns and priorities in medicine.

Methods Man is a highly complicated system and human disease is extremely complex. Identifying the main targets and key points allows more to be done with less. Precision medicine and holistic medicine both have their advantages. Accurate medical research based on results is important but should be combined with complementary medicine to improve clinical outcomes, decrease clinical costs and reduce adverse reactions.

Results Precision medicine and holistic medicine reflect two types of medical thinking. Precision medicine can quickly treat disease successfully, but the underlying causes may not be tackled, so sooner or later the same or similar problems will occur again. Consequently rehabilitation is very important, and specific complementary medicine and holistic medicine should be considered.

Conclusions There has been a sharp rise in medical costs and in long-term efficacy. However, economic efficiency is very important and should be the focus of research.

Environment and Health

| 62 | ENVIRONMENTAL POLLUTANTS AND HUMAN HEALTH RISK: SUBSTANTIAL IMPACT ON PUBLIC HEALTH |

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Objectives This paper evaluates the health risk to the population in a mining area from exposure to pollutants. The findings may inform measures for the effective prevention and treatment of mining area pollutants, and promote environmental protection in mining.

Methods Through data collection and analysis of different levels of pollutants in mining areas, the paper studies the pollution characteristics and harm to people's health. It establishes models to assess mining area pollution and human health risk, and uses simulation to demonstrate their reliability.

Results By revealing the human health hazards posed by pollutants from mining activities, the paper clearly shows the comprehensive pollution index is higher in a mining area and the risk to human health is greater from exposure through diet and the skin.

Conclusions Different pollutants in soil and water in mining areas are absorbed by crops into the food chain, thus harming human health.

| 63 | EFFECT OF LIGHT INTENSITY ON *CHLORELLA* ZY-1 CARBON SEQUESTRATION AND GROWTH |

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Objectives With the development of industrialization, the atmospheric concentration of greenhouse gases such as CO_2 has consistently risen, and people are increasingly concerned about the resulting greenhouse effect and extreme weather events. In recent years, microalgae photosynthesis has been considered an effective means of CO_2 fixation. In previous studies, we successfully isolated and cultured *Chlorella* ZY-1 for efficient CO_2 fixation. Light is the only energy source for photosynthesis and is essential for microalgae. Algal cells through photosynthesis convert light energy into chemical energy for CO_2 fixation and other activities. Different temperatures, culture medium initial pH, gas flow rate, and physical and chemical culture conditions were investigated.

Methods Too intense or too little light affects microalgae photosynthetic efficiency, growth and metabolism. In order to further improve *Chlorella* ZY-1 productivity and CO_2 fixation, the optimum light intensities for *Chlorella* ZY-1 carbon sequestration and growth were studied, based on previous research results. The best culture conditions, light intensities, cycles and light sources for cultivating ZY-1 were studied, and the growth of ZY-1, solid carbon and chlorophyll content, nitrate reductase activity, antioxidant enzyme activity and malondialdehyde content were measured to determine the best light conditions for carbon sequestration and optimization of growth.

Results Results show under light conditions of 2500–7500 lux, *Chlorella* ZY-1 growth and carbon sequestration rate increased in line with increased light intensity, while *Chlorella* ZY-1 intracellular malondialdehyde content, nitrate reductase activity and antioxidant enzyme activity remained steady. Under a light intensity of 10 000 lux, growth and carbon sequestration were suppressed and intracellular malondialdehyde content, nitrate reductase activity and antioxidant enzyme activity increased. *Chlorella* ZY-1 light saturation values should be between 5000 and 7500 lux.