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Cartogram of the incidence of Parkinson's disease in Kazakhstan

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Summary Slide

Background. One of the leading methods of scientific analysis of the epidemiological situation is mapping, which allows conducting spatial analysis and monitoring the current situation of morbidity. One of the most relevant diseases is diseases of the nervous system, as they affect the functioning of the main regulatory systems of the body. Among these diseases, a separate large group consists of neurodegenerative diseases, one of which is Parkinson's disease.

Aim. Make a cartogram of the incidence of Parkinson's disease in Kazakhstan.

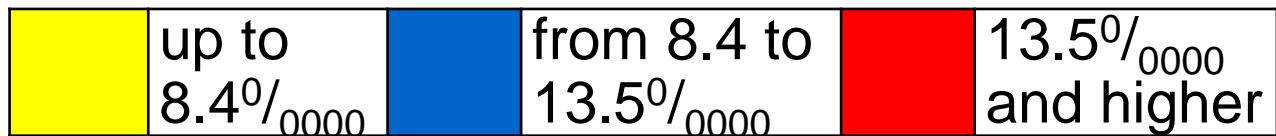
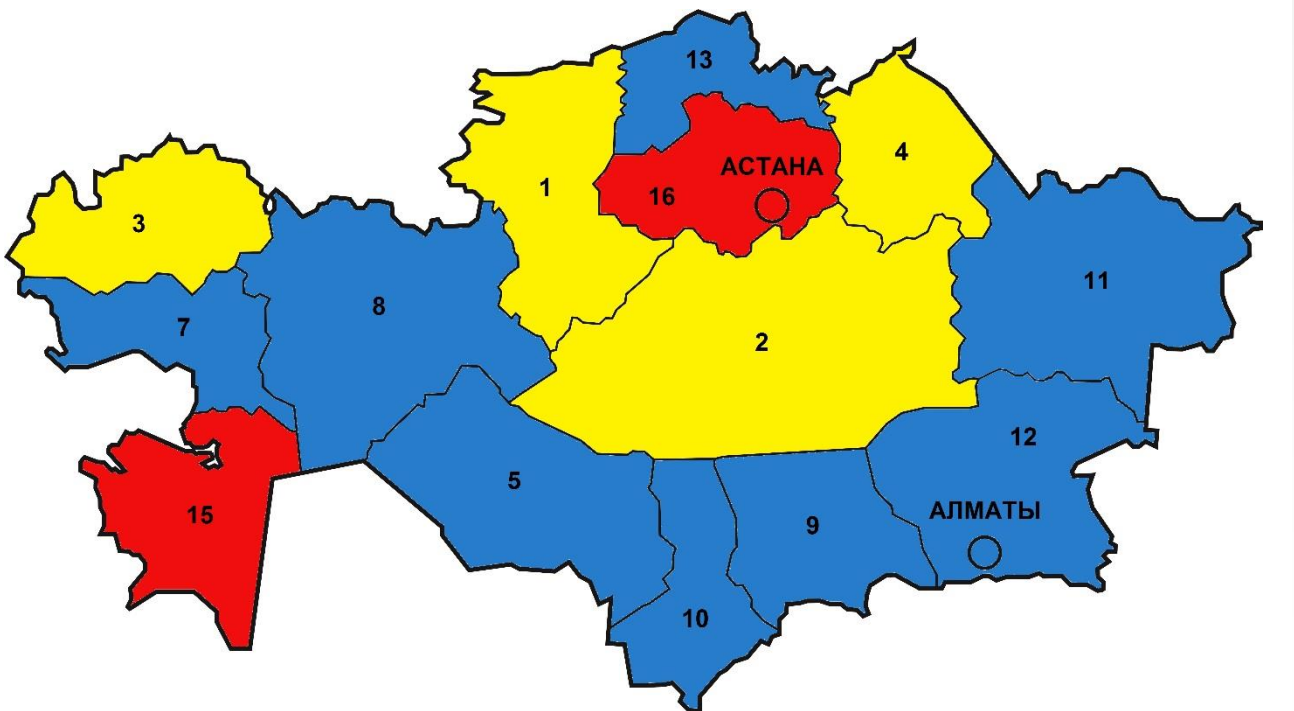
Methods. In the preparation of cartograms, the indicators of the incidence of Parkinson's disease (ICD 10 – G20) for 6 years (2013–2018) were used and the method of mapping was applied, based on the determination of the standard deviation (σ) from the average (x).

Research Results

During the study period, 5 130 new cases of Parkinson's disease were registered. The average annual incidence of Parkinson's disease was 6.9 ± 0.1 per 100 000 population. For mapping purposes, Parkinson's disease incidence levels were determined at the beginning, which meet the following criteria: low – up to $8.4/_{0000}$, medium – from 8.4 to $13.5/_{0000}$, high – above $13.5/_{0000}$.

On the basis of which the following groups of areas were defined

Research Results



- Regions:** 1. Kostanay ($3.3 \pm 0.2^{0}/_{0000}$);
 2. Karaganda ($3.4 \pm 0.3^{0}/_{0000}$);
 3. West Kazakhstan ($4.3 \pm 0.2^{0}/_{0000}$);
 4. Pavlodar ($5.9 \pm 0.2^{0}/_{0000}$);
 5. Kyzylorda ($6.3 \pm 0.7^{0}/_{0000}$);
 6. Almaty city ($6.8 \pm 0.3^{0}/_{0000}$);
 7. Atyrau ($6.9 \pm 0.2^{0}/_{0000}$);
 8. Aktobe ($7.1 \pm 0.5^{0}/_{0000}$);
 9. Zhambyl ($7.4 \pm 0.3^{0}/_{0000}$);
 10. South Kazakhstan ($7.5 \pm 0.5^{0}/_{0000}$);
 11. East Kazakhstan ($7.5 \pm 0.4^{0}/_{0000}$);
 12. Almaty ($7.6 \pm 0.3^{0}/_{0000}$);
 13. North Kazakhstan ($7.9 \pm 0.5^{0}/_{0000}$);
 14. Astana city ($8.6 \pm 1.1^{0}/_{0000}$);
 15. Mangistau ($11.3 \pm 1.6^{0}/_{0000}$);
 16. Akmola ($11.8 \pm 0.5^{0}/_{0000}$).

Conclusions

Thus, the established regional features of the incidence of Parkinson's disease indicate variability with territorial differentiation by incidence levels. The obtained results will allow health care organizers to have a clear spatial picture of the incidence of Parkinson's disease, which is necessary for the implementation of therapeutic and preventive measures.