

Annex 1

**SYSTEM FOR ANALYSIS OF EPIDEMIOLOGICAL INFORMATION
OF THE JOINT REGISTRY OF RUSSIA AND BELARUS ON THYROID CANCER**

The system for analysis of information of "Joint Registry of Russia and Belarus on thyroid cancer" is designed for the calculation and analysis of the main features (number of cases, incidence rate, distribution by territories, sex, age at the accident and at diagnosis, temporal variations of requested values) of the cohort of the registry. The system has two basic subsystems: "Cartography" and "Tables and Graphs". Names of the subsystems reflects the type of presentation of epidemiological information as a map, a table or a graph. For stable operation of the system a personal computer with processor at least Intel 386 and cyrillic environment Microsoft Windows 3.1/95/98 is requested.

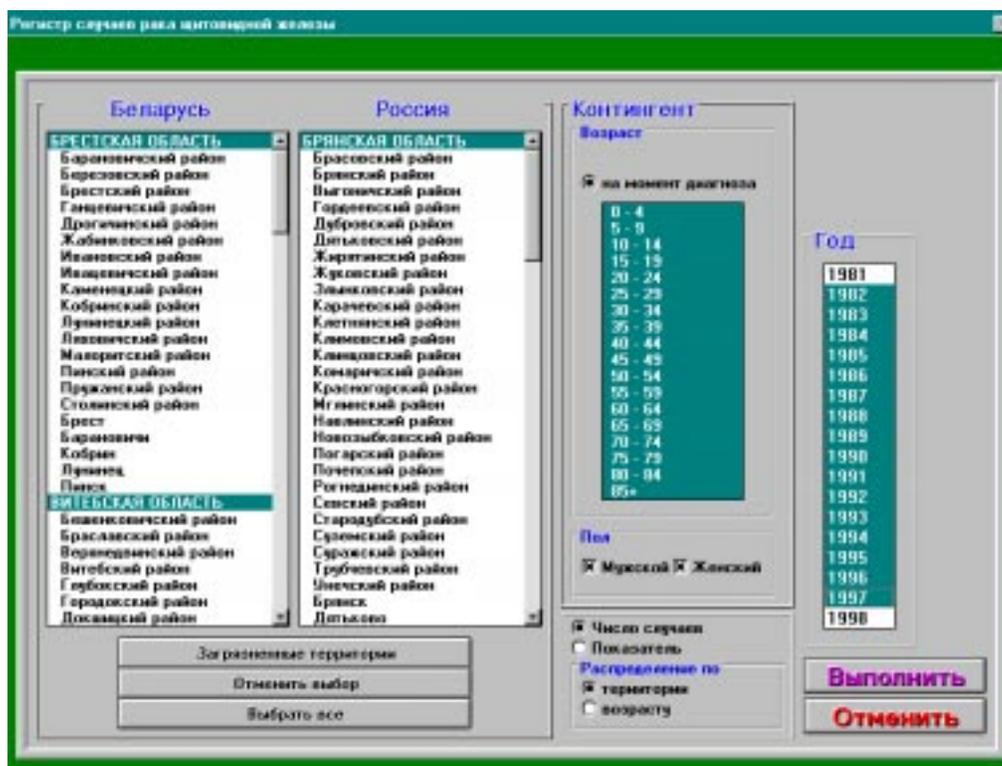


Fig. A1. Window of a request operating in the regime "Tables and graphs".

User's Interface

The user interface operates under "Windows"-standard and is organized as replacing full-screen windows directed by "mouse". The windows are of three types:

- 1) picture - starting of the system work, initialization of the parameters, selection of a regime for the presentation of information;

2) the creating and execution of a request is made up (fig. A1) in frames "Territory", "Gender", "Age", "Year", combination of requested parameters. One element for each of frames should be indicated.

3) a window of the proper tables, or a map of a selected region, if a regime for cartography is indicated.

Windows replace each other in strict sequence in both right and opposite directions. Information on errors or some incorrect actions of a user are generated as notification or directly by the Windows environment. In the latter case a cause of the error must be indicated, it is necessary to contact a designer.

The converted basic table of the database of the Joint registry with individual depersonalized information on thyroid cancer cases and tables with demographic data at the oblast and rayon level serves as the entry information. The correctness of the completed field of the basic table is checked at re-coding, file with unchecked records is generated.

Subsystem "Cartography"

Subsystem "Cartography" serves for masking of summarized information on oblast maps with division into rayons, or for masking selected thyroid cancer cases on maps of contamination with radionuclides. The type of map to be used depends on the kind of calculated value and results of. If one chooses a parameter "Number of cases" entry data will be presented in a map of iodine contamination (fig. A2). In the map each registered thyroid cancer case will be presented as an ellipse.

If the parameter "Indicator" is used a window of cartography (fig. A3) appears. There is a color map of a selected region, a table of correspondence between color and numerical ranges, list of calendar years in the window.

The table of correspondence between color and numerical ranges can be edited; it allows a user to select independently colors for a map. There is a possibility to cancel automatically numerical ranges which watch when the presented parameter is changed. This is convenient when viewing temporal variations of the annual incidence rate.

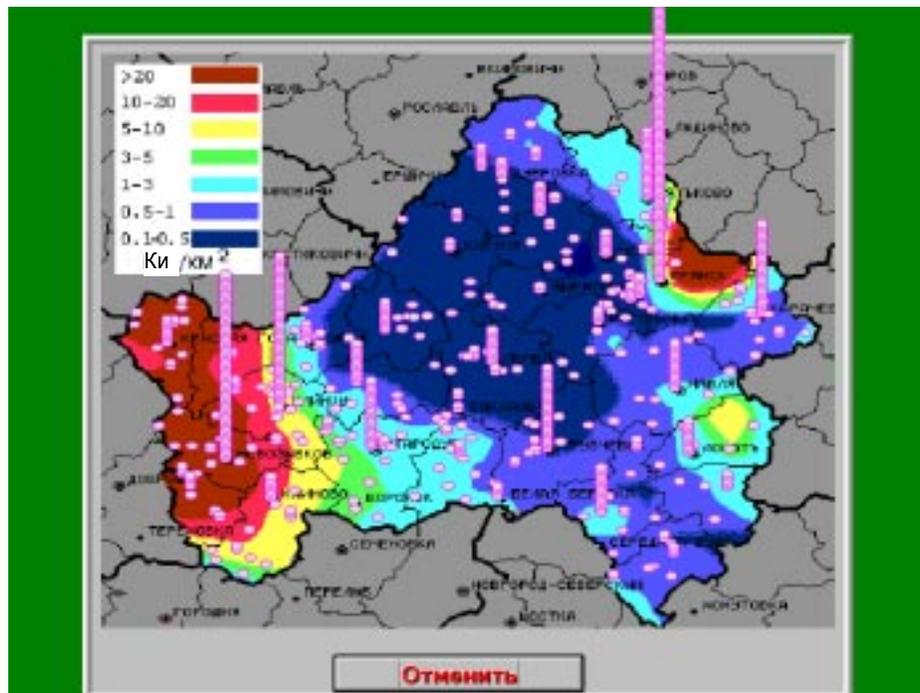


Fig. A2. Cartographic presentation of the number of thyroid cancer cases.

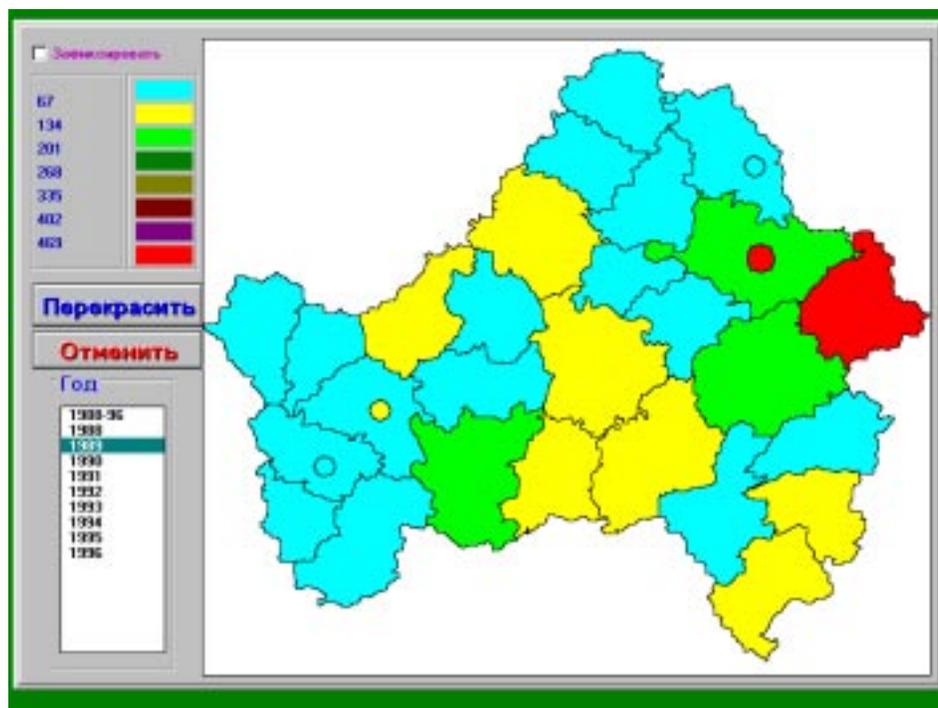


Fig. A3. Cartographic presentation of the thyroid cancer incidence rate.

Subsystem "Tables and graphs"

When a user makes a request to the subsystem three dimensional bar diagram appears in the screen (fig. A4). A list of parameters located in the bottom of the window explains the meanings of the number along the x-axis.

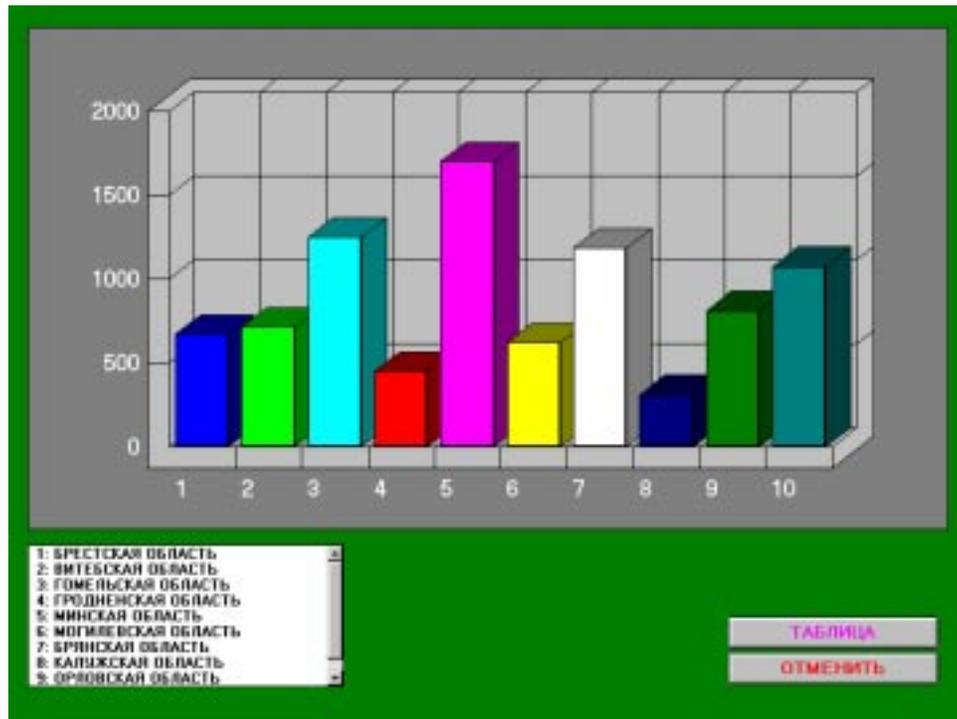


Fig. A4. Presentation of information as a diagram.

When a user makes a request to the frame "Year" and indicates more than two years, it is possible to view temporal variations of the requested parameter. In the regime of a view of temporal variations it is possible to change the type of a graph, to make it linear or otherwise (fig. A5).

There is a possibility to present the meanings of a current graph in a screen. A user can change the width of bars and height of lines in a table. For this purpose it is necessary to place the cursor of the "mouse" precisely on the boundary of a column in the left line so that sort of the cursor has varied. Holding the left button of the "mouse", it is necessary to place required width and to let off the button. The similar process should be done for columns. The frame "Percents" allows the calculation of shares inside the table).

The work with the system for analysis of epidemiological information of **"Joint Registry of Russia and Belarus on thyroid cancer"** is easy, convenient, and understandable. It does not require a user to have special training in a field of information technology and epidemiology.

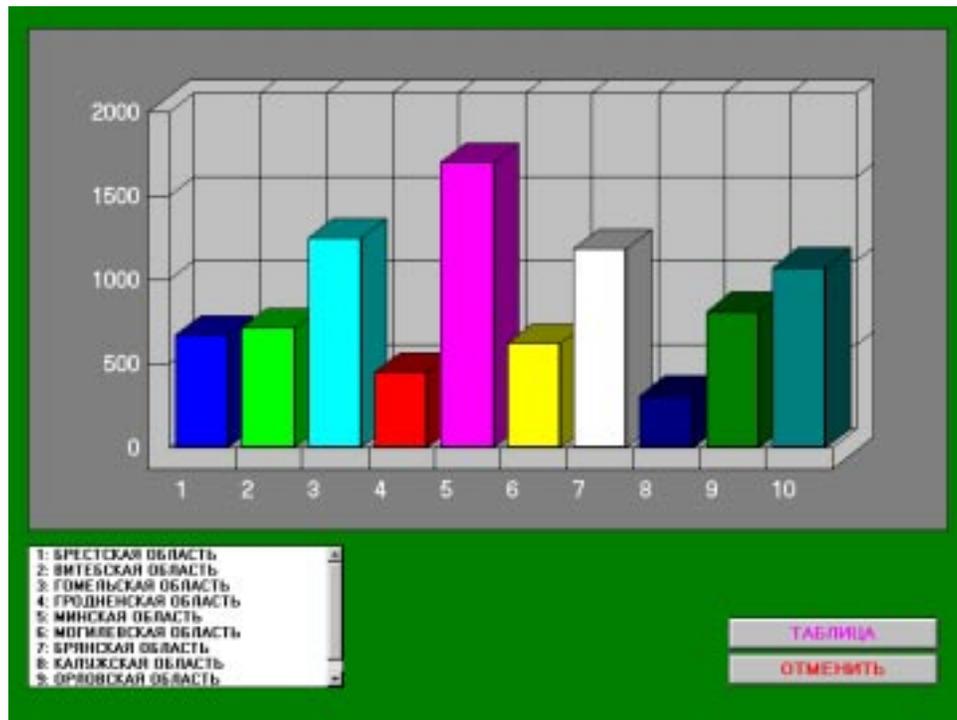


Fig. A5. Presentation of temporal changes as linear graph.