Dedicated to the 35th anniversary of the University of Baia Mare

HEALTH STATISTICS AT DIFFERENT LEVELS.
AN INTEGRATED SYSTEM

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Abstract

This paper describe an integrated system for data transfer and processing on three hierarchical levels: Prefecture, District Health Authorities, Ministry of Health. It offers a complete image concerning the health status of population at the district level and aloud the making of real time management decisions.

The program is designed to autoconfigure themselves according to the actual level that uses them. The system can be farther develop in order to be connected other units, on different levels. It is an important forward step in a huge project in order to completely computerise all health statistic activities.

We designed and developed a program (STASAN) which purpose is to achieve the statistical reports the Ministry of Health expects from the District Health Authorities. It manages and permanently updates databases regarding the new born, deceased, miscarriages and abortions, computes and highlights the demographic indicators, the specific and general mortality and others. These databases offer a complete image concerning the health status of population at the district level and aloud the making of real time management decisions.

Highlights of the system include:

- the primary data is input based on the statistical bulletin for the new born and deceased;

- other data sources are the territorial units;

- monthly and overall reports are available;

- data is processed both according to the phenomenon location and to the person's address;

- the program offers different types of reports, containing the rates for the demographically data, the specific mortality for the main types of affections, the general mortality for different groups of age and many others;

- the rates are computed for each location, totaled on areas, totaled on the rural and urban areas, totaled on the entire district;

- any changes that occur within the population structure (new born, deceased) will automatically affect both STASAN and ASSAN (the application dedicated to the new medical assistance system);

- the program will be further developed in order to offer more (non standard) statistical reports.

The program can operate in a network environment regardless of the number of users. The friendly interface makes the program easy to use even for inexperienced PC users.

The program uses five types of databases: set-up databases, databases for primary data, dictionary databases, temporary databases, archives' databases.

The set-up database is STASAN.DBF. It keeps all set-up parameters required by the program.

The databases for primary data are:

- NASCV.DBF - new born database;

- NASCM.DBF, DECESE.DBF - deceased databases;

- AVORTD.DBF, AVORTF.DBF - miscarriages and abortions databases;

- AGE.DBF, POP.DBF - population databases.

The dictionary databases are:

- CAUZE.DBF - diseases database;
- ZONE.DBF, LOCALIT.DBF - places' databases.

A large part of primary data is archived in specific databases. These data are used in all rates computing but cannot be update.

Considering STASAN program, we developed an integrated system for data transfer and processing among three different hierarchical levels:

- Prefecture;
- District Health Authorities;
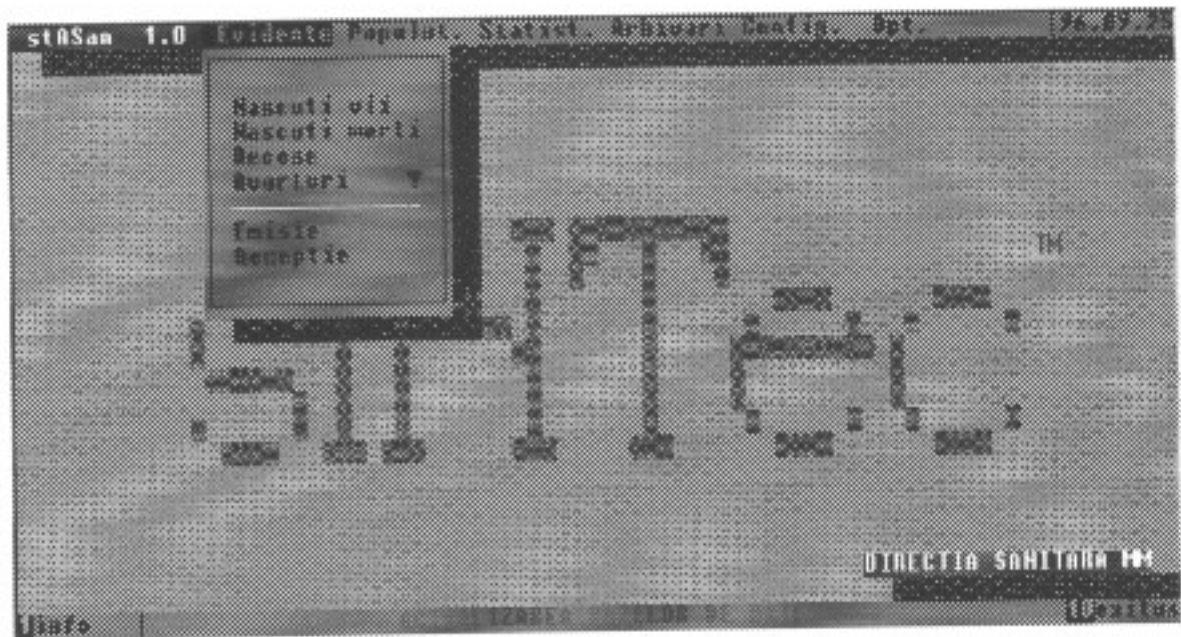- Ministry of Health.

The program is designed to autoconfigure themselves according to the actual level that uses them. At each level will be automatically installed the suited databases.

At the upper level (Prefecture) the primary data is input based on the statistical bulletin for the new born, and deceased. The program offers all specific reports for this level.
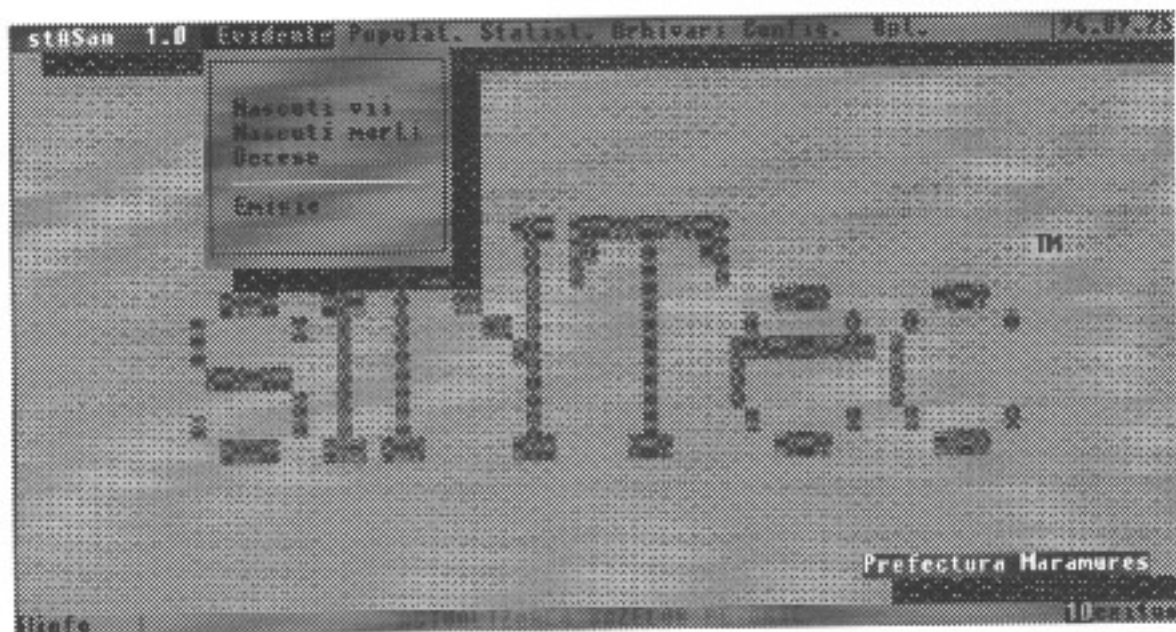

At the intermediary level (District Health Authorities) the data regarding the new born and deceased can be either received (by modem) from the previous level (Prefecture) or directly input

from keyboard. The data regarding the miscarriages and abortions are directly input based on territorial units' reports. All specific reports for this level are available.

At the higher level (Ministry of Health) the statistical data can be either received (by modem) from the previous level (District Health Authorities) or directly input from keyboard. Specific reports for this level are generated.
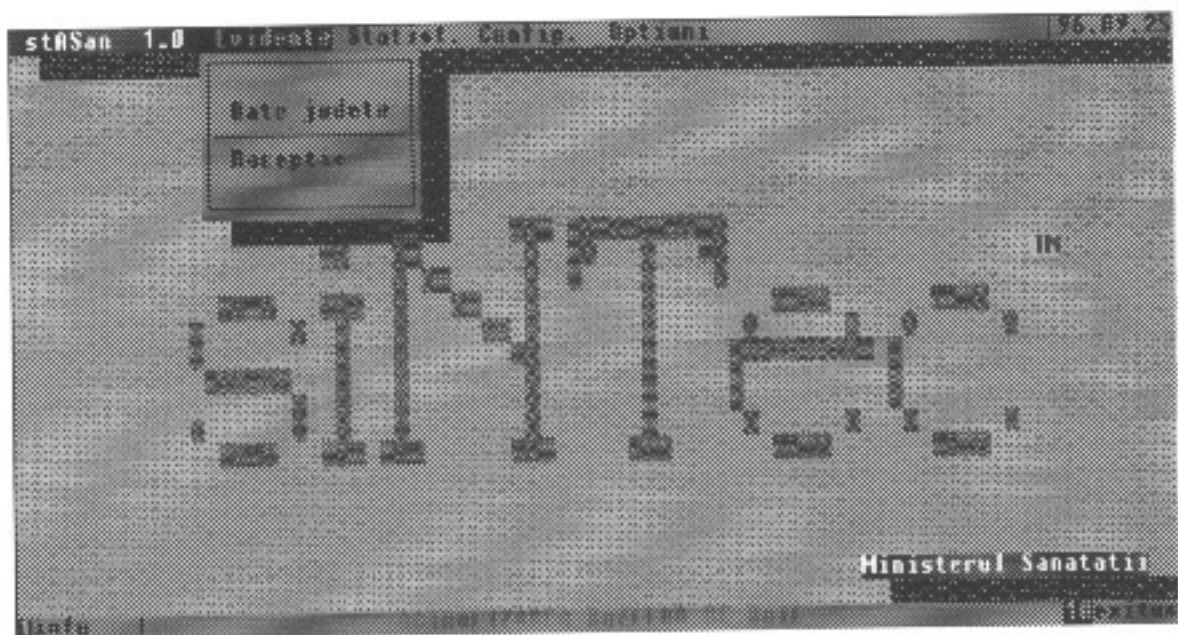
The system can be farther develop in order to be connected other units, on different levels.

The data transfer module is able to transfer data between different levels by modem. It can use either leased line or dial-up line. The program works in communications terminal mode simulating the TTY standard, with possible connection to INTERNET nodes.

The data transfer rate range is 2400 - 38400 bauds. It can use any I/O port ranging from COM1 to COM4, including the non-standard configuration. The file transfer protocol is ZMODEM. More than one file can be transfer in one session, including full directory.

On intermediary levels the communication is made by line switching between higher level and upper level. It can be use either internal or external modems, preferable with higher data transfer rate and data correction and compression hard implementation.

The data transfer module is write in C language and called by program write in FoxPro. It can work either in DOS or Windows environment. It can be also included in any other program.

The system was designed and developed as a concrete step in order to establish an integrated informational system, indispensable for the sanitary reform in Romania. It is an important forward step in a huge project in order to completely computerise all health statistic activities.

References

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