

City of Bucharest Ambulance Service, - DISPEC tele triage and dispatch system

DISPEC is a sophisticated, complex emergency ambulance tele triage and dispatch system, developed for and used by the City of Bucharest Ambulance Service (SAMB). SAMB is a strategic medical unit registered as a legal entity. It is a 24 hours available medical emergency service and it provides for the people of Bucharest:

- Pre-hospital emergency medical assistance
- Emergency medical assistance in case of disaster
- Home medical assistance for less acute emergencies
- Preventive medical assistance for large events
- Medical and non-medical transportation
- Transportation of medicines and biological products, such as blood and organs
- Issuance of death certificates on weekends and legal holidays.

During the political and economic crises of the early 1990s, but also nowadays, SAMB has been facing rising costs and limited budgets. Only a significant increase in productivity could ensure the existence and effectiveness of emergency services in the Romanian capital.



Thereupon, SAMB decided to develop DISPEC. The system was introduced in 1996. SAMB defined the contents to support internal work processes and the Bucharest software company ROMSYS developed the server-client application. Up to 1996 a paper-based system was in use. Untrained phone operators received emergency calls and filled paper slips with data of the emergency call. A paper slip was carried physically to a co-ordinating doctor, who then tried to identify adequate resources with the aid of radio operators.

Working with DISPEC means that trained phone operators enter the information from incoming emergency calls into the system. In communication with the person reporting the incidence, the operator identifies the nature and severity of the emergency, and gives first advice. Then he or she attributes a presumed diagnosis to one of the four severity levels for emergencies. Next, DISPEC automatically generates the best match with the available rescue teams, which are scattered all over the city area. The radio operators allocate an ambulance equipped with the appropriate facilities and staff and then direct the teams to the emergency sites. In routine care, the match is controlled by a coordinating physician. Time savings occur from a location reporting system based on GPS, allowing operators to identify free ambulances nearest to the location of the emergency.

The system is designed mainly for support in process optimisation, the main beneficiaries of which are the citizens in need. They gain over 80% of the benefits. Despite decreasing resource availability during the 1990s, the ambulance service was able to cope with increasing demand due to the implementation of the DISPEC system. This is reflected in a peak in benefits in the late 1990. After 2003, estimated net economic benefits stabilise at a sustainable level of just over € 1.4m per year.



Core impact:

- SAMB has been able to handle an increasing number of high level emergency calls with the same resources
- Waste of high level resources on low level emergency calls was reduced
- The internal response times dropped dramatically
- The time till arrival at the emergency sites dropped dramatically
- Taking into account the general loss of purchasing power of the Romanian Lei since 1991, SAMB has increased not only productivity, but also maintained the cost-effectiveness of the service.

Main beneficiaries:

- Citizens in need can expect to receive timely and high quality help. All citizens in Bucharest, some 2.5m people, benefit from the knowledge that in case of emergency they will be provided with timely access to appropriate care
- SAMB benefits from time and other resource savings. The main benefit to the emergency service provider is the cost avoided in order to provide the same level of service without DISPEC.

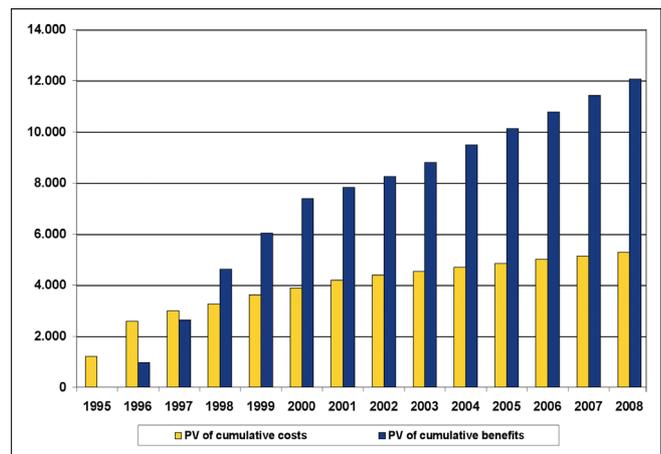
Lessons learned:

- A success factor was the focus on a concrete problem, i.e. to counteract the impact from a constantly deteriorating resource base. DISPEC helped improve performance in spite of fewer resources being available (in real terms)
- Continuous development and investment in ICT, an eHealth dynamic, is essential for the sustainability of benefits in view of constantly changing framework conditions
- DISPEC illustrates the importance of effective resource management, rather than following a blind cost-minimisation strategy.

Economic results:

- First year of annual net benefit, i.e. when annual benefits exceed annual costs: 1997, year 3
- Estimated annual net benefit for the year 2008: approximately € 1.4; peak in 1998 with nearly € 5m net benefit
- First year of cumulative net benefit: 1998, year 4
- Estimated cumulative benefit by 2008: approximately € 35 million
- Cumulative investment costs, including operating expenditure, by 2008: approximately € 15 million
- Estimated productivity gain, measured in decrease in DISPEC cost per call: 38%
- Distribution of benefits to 2008: Citizens – 90%; SAMB – 10%

CHART: ESTIMATED PRESENT VALUE OF CUMULATIVE COSTS AND BENEFITS, IN REAL TERMS, in LEI 100,000s



www.romsys.ro
www.ambulanta.ro/
www.ehealth-impact.org/case_studies/index_en.htm