

EUROPEAN COMMISSION  
HEALTH MONITORING PROGRAM

**Health Monitoring Systems in Europe:  
Structures and Processes  
Veneto Region's Final Report**

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**VENETO REGION**

**Regional Epidemiology System**

Venice, 31-8-2003

A Health Information System (HIS) is a crucial tool to support public health programs and policies designed to improve health in Europe. In order to work properly, a HIS needs to be effectively and efficiently managed. Veneto Region studied two components of the HIS through the management lenses: mortality and behavioral-socio-economic health determinants.

The project's first meeting, held in Brussels between 1 and 2 March, 2002, aimed at building consensus on project's objectives, strategies and products, developing a work-plan, agreeing on the time-frame and final products and getting participants to know each other. The second meeting, held in Venice from 23 to 24 of September 2002, aimed at sharing preliminary results on the evaluation of HIS performed in each MS and reach consensus on the next steps of the project. Finally, the last meeting, held during May 2003 in Stockholm, intended to share and draw conclusions from the overall research findings, to agree on the final content and development of the project report.

Strategy and tools used to analyze structures and processes included quantitative and qualitative methods. Organizational structures and networks were analyzed using organizational charts. Mandates, missions, functions, roles and strategies were studied by reviewing official documents, specific studies and legislation. A series of in-depth interviews with key informants, both top and middle level officials were performed to examine coordination mechanisms and actual tasks carried out by each organization.

This report briefly describes weaknesses and strengths of Veneto HIS. Similarly to several other MS, results from Veneto show that the design of HIS is frequently based just on technical considerations such as what data and information are needed by whom and too often ignores managerial principles. Symptoms of this problem are overlaps and gaps in activities, poor communication and conflict between organizational units. Overlapping activities are manifestation of the fact that several organizations do the same work especially as far as analysis and interpretation is concerned. Gaps in activities are apparent in key areas of analysis; for example, disability surveillance.

Poor communication and conflict are frequent indications of less than ideal relationships between different organizations belonging or not to the health sector. Several analysts expressed frustration with the difficulty to access database from units managing them and some decision-maker expressed dissatisfaction with the lack of information or its marginal relevance. Different units and organizations fight in order to conquer space where they can present their analysis trying to anticipate and displace “competitors”. Managerial root causes of these symptoms were identified in the following flaws:

- Mandates of organizations managing HIS are rather vague,
- HIS related missions and visions are frequently missing or lack alignment with mandates,
- Distribution of tasks among units responsible for data collection, analysis and diffusion is unsystematic; for example, the responsibility map presented in the following table shows that
  - responsibility to carry out mortality analysis is assigned at the same time (or, in some case, added arbitrarily to routine work outside their mandate) to four units highlighted in red: Public Health, Epidemiology Center, Health Report Unit and Statistics Office. With the exception of the latter, all of them belong to the Health Sector,
  - the task “mortality analysis” does not reflect specialization, i.e. competence and expertise in the specific area of concern. Specifically the Statistics Unit is not staffed by multi-disciplinary personnel specialists in health sector,
  - Local Health Units do not have clear responsibility to carry out analysis at their level, but play a role essentially in data collection, coding and transmission. These units are not involved in data utilization and interpretation of results and therefore do not see the output of their work and the relevance of what they do.

**RESPONSIBILITY MAP**  
**TASKS, ORGANIZATIONAL UNITS AND ROLES:**  
**CURRENT STATE RE MORTALITY ANALYSIS IN VENETO REGION**

Organization	M H	P	H P	P H	E P I	H R	S T	P D	O H	C R	H I	L H
Tasks												
Collection Coding Transm.	-	C O N	C O N	A U R S P	I N F	-					A U R S P	I M P
Analysis Interpret.	-	C O N	C O N	R S P	R S P	R S P	R S P	R S P	R S P	R S P		
Utilizat.	A U R S P	A U R S P	A U R S P									

**Acronyms**

**MH** Minister of Health

**P** Prevention

**HP** Health Planning

**PH** Public Health

**EPI** Epidemiology Center

**OH** Occupational Health

**CR** Cancer Registry

**PD** Pediatrics Department

**HR** Health Report Unit

**ST** Statistics Office

**HI** Health Information Unit

**LH** Local Health Unit

**AU**

**RSP**

**IMP**

**CONS**

**INF**

**Authority**

**Responsibility**

**Implementation**

**Consulted**

**Informed**

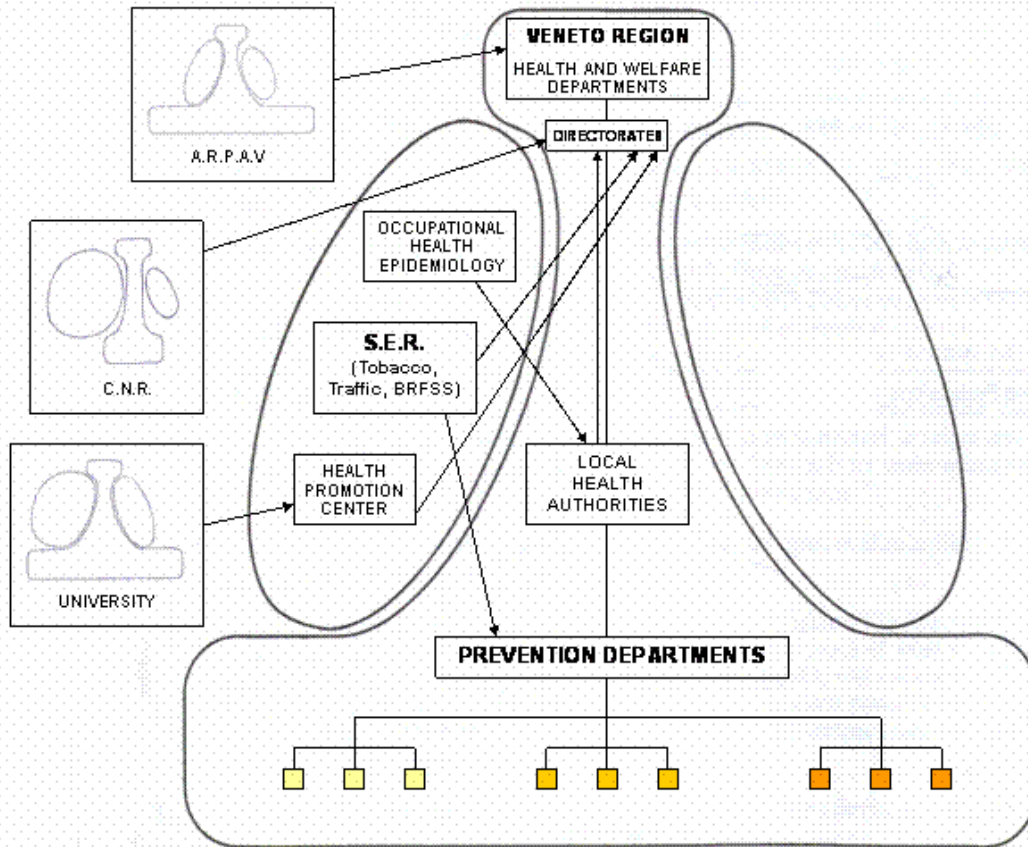
Other managerial root causes of problematical symptoms include:

- Coordination mechanisms are often informal, therefore weak. For example, the following chart shows how some units managing HIS mortality data have fragile or even absent links. In particular, lateral coordination mechanisms are

insufficiently established at one critical point of the HIS processes: where databases move from Statistics Unit to Public Health Units.



Another weak point in the HIS process concerns the flow of knowledge from analysts to decision-makers because several organizations either belonging or not to the Regional public administration support public health decision-makers. The central portion of the following chart represents the line from Regional top management to Prevention Departments of Local Health Authorities. Advice flows from different analysts to decision-makers following diverse paths: for example from the outside of the Regional structures directly to the top or through a staff unit acting as filter. Such complexity in the organizational relationships does not derive from an overall effort to design a network with an explicit purpose and logic, but from fragmented decisions made by several actors in different circumstances.



ARPAV: Regional Environmental Agency

CNR: National Research Council

SER: Regional Epidemiological System

These two examples reveal that in some public administrations an important the problem might be the lack of standard operating procedures such as flows of databases, even if a criticism frequently moved against bureaucracies is the huge amount of rules and procedures, many of which supposedly outdated and useless. The cost of this administrative gap is great.

Finally,

- Some key organizational processes are not designed so that each step is mutually linked.

**Consequences** of HIS' management problems are of three kinds:

- at the organizational level, weak formal connections, compounded by the absence of standard operating procedures and the ambiguity of work division, all contribute to open space for political games where access to data is sometimes used as a power tool. This situation results also in inefficiencies because the same tasks are carried out by different organizations, instead of each organization focusing on what knows and does best. Organizational waste originates also from time consuming informal data search. Ambiguities of mandates might lead organizations to carry out tasks different from those for which they were created. Another consequence of HIS unsatisfactory management is the slow responsiveness and limited adaptability of HIS to new health problems and rapid social changes.
- at the output level, information and knowledge produced are too frequently late, unseen, unused or irrelevant and there is accumulation of data which is never analyzed. An important shortfall of inadequate management are the missed opportunities of collating and analyzing available data for the formulation of prevention and care policies, for example data concerning special populations, such as the elderly and the immigrants, or data re voluntary traumas, such as attempted suicides episodes, which are used only for individual care in the absence of specific Health Information subsystems and units responsible for them.
- at the policy level, decision-makers have sometimes access to diverse or contradictory information. This compromises analysts credibility in front of both decision-makers and citizens and, more important, some strategies are not as informed as should and could be.

We now turn our attention to some of the Veneto Region HIS management's strengths, which include

- division of labor is precisely assigned between analysts and policy makers,
- procedures including coordination mechanisms are well defined around data collection, coding and quality control. Coordination mechanisms include National and Regional laws and regulations, formal procedures (e.g. manuals for codifiers), data quality control (e.g. a 20% random sample of death certificates), standard soft-wares, training and accreditation of personnel responsible for coding and regular meetings,
- wide data-bases are available to analysts (even if this frequently happens late),

- health sector units share data and analytical skills with non-health organizations, e.g. Insurance Institute and Occupational Health,
- a new Health Surveillance System covers key behavioral and socio-economic determinants of health,
- identification of public health priorities and formulation of strategies and programs are increasingly based on analysis, e.g. traffic traumas, promotion of tobacco cessation and radon interventions.

In the environment surrounding the HIS, several changes cross Veneto and have strong implications for public health and therefore for HIS. Aspects especially worth mentioning include:

- Important immigration flows, bringing new health and social needs,
- Emerging patterns in mature epidemics, e.g. the interaction between HIV/AIDS and tuberculosis,
- Epidemics of previously unknown diseases such as SARS,
- New climatic events, especially heat waves, possibly with heavy health burdens, especially on the elderly,
- Information technology improving validity, reliability and data transfer speed (eg CATI),
- Adoption of a new reimbursement policy (DRGs),
- Decentralization policies invest the Region of much broader authority and responsibilities in the health sector, creating pressure to manage more effectively resources and programs, and to develop analysis capacity at Regional and local levels.

The above mentioned complexities and transformations underline the importance of adapting the HIS management to new realities. Therefore HIS structures and processes should be able to accommodate change without altering arrangements still valid. Only HIS which are managed rationally will have the capacity to adapt swiftly, anticipate and respond to the changes listed here or other occurring in the future.



## **Conclusion**

A managerial perspective is crucial to a smooth functioning of any organization and system, including HIS. This project's findings show that Veneto HIS has strong features and also suffers from some symptoms of ineffectiveness and inefficiency. The root causes of some of these symptoms were traced to organizational arrangements, in particular ways organizational structures and processes managing HIS are designed and run. Environmental transformations accentuate the importance of adapting HIS management to new challenges.

This project's effort at studying how Veneto and other MS divide labor concerning HIS and how they coordinate different organizations and steps, is not a mere intellectual exercise but represents a pre-condition for HIS management improvement. Our main recommendations are that decision-makers, administrators and professionals responsible for HIS, should identify symptoms of HIS malfunctioning, make explicit use of management tools to analyze them and consider the advantages of streamlining processes and redesigning structures. Principles of Total Quality Management can guide MS in their improvement efforts, grouping labor and coordinating its components in more rational ways.

## **Recommendations**

Veneto should further analyze HIS through a managerial perspective in order to identify current state's main shortcomings, define preferred states and formulate, implement and evaluate strategies able to accomplish selected goals. Veneto should in particular:

- set up a task force of officials working in relevant agencies granting a clear and strong mandate,
- identify symptoms of HIS malfunctioning,
- make explicit use of management tools to describe and analyze their root causes,
- learn from HIS best practices in Europe and beyond,
- list explicitly the advantages and the risks of streamlining processes and redesigning structures,

- reconsider HIS goals and identify functions relevant to the achievement of those goals,
- redesign structures congruent with key functions,
- group work in such a way as to avoid gaps and overlaps,
- staff structures with specialists, so that human resources knowledge and skills match organizational tasks,
- link different structures with coordination tools appropriate to the task and the proximity (or distance) between organizations,
- institutionalize preferred structures and processes,
- involve organizational actors at each step not only HIS top managers but also a large number of middle-managers and professionals.

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