

**SLOVENIA:
RECORDING OF ISSUED MEDICAL DRUGS
ON THE HEALTH INSURANCE CARD**
*by Marjan Sušelj and Anka Bolka,
Health Insurance Institute of Slovenia (ZZZS)*

Summary

Slovenia is known to be one of the first nations to roll out a modern smart card as Health Insurance Card to its entire population. The Health Insurance Institute of Slovenia continuously enhances the national health insurance card system. For the moment, these improvements are focusing on the recording of drugs issued to the cardholder by prescription. The principal aim of this new data item on the card is to enhance information available to the prescribing physician at the occasion of prescribing new drugs, and in turn, safety of the insured person concerning drug consumption. The project objectives further address the containment of national level expenditure on drugs and the equipping of all environments for the introduction of electronic prescription.

1. THE HEALTH INSURANCE CARD SYSTEM – CURRENT SITUATION AND OPTIONS

The Slovene health insurance card system was introduced in the period 1999 – 2000, which saw the issuing of the card, i.e. an electronic document designed for implementation of rights deriving from health insurance, to all the inhabitants of Slovenia regularly registered in health insurance, and the commencement of application of the card by all health care service providers in the country.

Along with the health insurance card ("card"), the card system comprises:

- health professional cards to allow controlled access to the insured person card data;
- card readers to allow card handling at the health care service provider and health insurance offices;
- self-service terminal network, to update card data;
- central computer and compulsory health insurance databases, and
- voluntary health insurance providers' servers and databases.

Along with the Health Insurance Institute of Slovenia ("Institute"), the system owner and manager, the system partners include voluntary health insurance providers, health care service providers and their software houses, and the insured persons, i.e. cardholders. In this way, the card is a component interlinking information systems across the entire national health care and health insurance system, and any modification to the card system is subject to a consensus of all institutions responsible for these environments.

Since the very introduction of the system, the Institute has been pursuing the enhancement of system functionality based on the infrastructure in place, to provide new options and benefits to the cardholders. Along with minor amendments required by continual updating in health insurance business rules, three major system functionality enhancements have been completed to date:

- ordering of insurance convention certificates through the self-service terminals, in 2001;
- recording of issued medical technical aids on the card, in 2003;
- integration of a new voluntary health insurance provider in the card system, end of 2003.

For some time now, projects to record significant medical data on the card have been in progress:

- in spring this year, a pilot implementation of the "Donor" project is scheduled – recording of the commitment to posthumously donate organs and tissues for transplants;

- the project of recording allergies and hypersensitivity to drugs is in the phase of development of technological solutions and software required for pilot implementation;
- the project of recording of vaccination data on the card is in the phase of drawing up medical definitions of the data set to be recorded on the card.

Late last year, the Institute initiated a new project: recording of issued medical drugs on the card. The card will thus carry data allowing the prescribing physician access to information on drugs already received by the cardholder. The project had been in planning for some time, yet only recently have all the prerequisite conditions for implementation have been stabilised:

- the card has been accepted and recognised as a routine element of procedures at the national level;
- the equipment of health care environment with information technology has recently achieved a level allowing direct application of card data to a substantial portion of the physician community;
- the requests for improvement in information on issued drugs among the physicians has been on a rise.

The decision to keep the card as the data holder instead of providing them directly from a central location through the network stems from the current equipment and established solutions, which do not yet allow such a technological transition.

2. AIM OF THE ISSUED DRUG RECORDING ON THE CARD

The principal project aim is the security of the patient, who are administered ever more diverse medication in the today therapeutic processes. The majority of prescriptions originate from personal physicians, while the rest, from specialists at the secondary health care level, emergency medical service, hospital doctors at the time of patient's release from the hospital, and others. This mix of origins may result in mistakes, duplication or incompatibility of prescriptions, and in turn in dangerous or even fatal complications.

In practice, probably the most severe flaw in the field of drug prescribing is **inadequate information linking between the doctors and the pharmacists**, as well as between different doctors or health care levels. Accordingly, the doctors have often voiced their need for more accurate information on medication already administered, and such requests have gained momentum upon the introduction of the system of mutually substitutive drugs, which empowers the pharmacist to substitute the prescribed drug for an equivalent, cheaper one.

The Institute further anticipates this method of prescribing to prove more rational, and thus contribute to a closer containment of expenditure on medication, which, in Slovenia, like in the global scale, has been on a constant rise. In 2003, this expenditure rose by 6.4% in real terms in comparison to 2002.

3. AMENDED PROCEDURES OF DRUG PRESCRIBING AND ISSUING

Under the current procedure, the physician prescribes the drug applying a prescription form, which in turn serves as the basis for the pharmacist's issuing of the drug to the patient. The pharmacy reports the data on drugs issued to the Institute through electronic channels. Upon the introduction of the recording on the card, this procedure is to be accordingly amended:

- at the pharmacy, the data on the issued drug will be recorded on the card at the time of issuing;
- at the doctor's office, the card data on issued drugs will be considered at the time of prescribing new drugs.

Currently, the health care service providers and the pharmacies apply different drug databases. Hence, application of a **uniform electronic database for drugs** available at the Slovene market is a **prerequisite** for the drug recording and reading on/from the card. To this end, the Institute has already launched the development of a new technologically modern drug database, to be continually updated with new data and technologically suitable for distribution to users. An uniform drug database is further mandatory in view of the accession of Slovenia to the EU, since the extended range of drugs available on the market without proper information support might jeopardise the control of the situation.

With a minimum investment in the upgrading of the software at the doctors' offices, the said drug database promises to considerably modernise the current working methods. For an integral application of these data, the doctors will need a professional expert software package, including the functions of alerting on drug interactions, side effects, counter-indications etc. Thus, the project of drug recording on the card is the first step and a stimulus towards the introduction (development or acquisition) of software to advance the professional support to the drug prescription by combining the drug database data and the record of issued drugs from the card.

The register of issued drugs, derived from the data reported by the pharmacies and the technological administrator of which is the Institute, serves as the basis for the updating of the card record through the self-service terminal. This way of recording is also applied in the cases where the recording is not possible in the pharmacy: drugs issued based on a certificate, card or other technology failure, etc.

Data on issued drugs are sensitive personal information, hence their security shall be at the highest level. The rights of access to these data will be highly restrictive; their reading will be allowed only in the presence of an appropriate health professional card. The data kept and processed by the Institute are already regulated by legislation and secured by means of the state-of-the-art technical measures.

4. REQUIRED SOFTWARE UPGRADES

All the insured persons' cards are already furnished, in their file structure, with the issued drug record file. The process of project implementation will require software upgrading both of all the card system components (card readers, self-service terminals) and in all the environments dealing with the card. To accommodate the reading of a new data item from the card at the doctor's and its recording at the pharmacist's, software upgrades will be required to facilitate the handling of card data and the application of the above mentioned drug database. A further element to emphasises its the appropriate training of doctors, medical nurses and pharmacists for the use of the upgraded software.

The introduction of the new data item on the card will provide the bases for the enhancement of the drug prescription process, as the doctor will get access, through the card, to a considerably more detailed information on the drugs actually issued, and through the electronic drug database, to the information on the drugs currently available. Obviously, the project further promotes the progress in the development of information technology and utilisation of the equipment already in place.

5. PROJECT ORGANISATION SCHEME, TIME SCHEDULE AND COSTS

The project is managed and executed by the Institute; in view of its broader national character, the project is steered by a project board seating the representatives of the Ministry of Health and other responsible institutions. Further, the setting up of a so-called "consulting group" is in progress, to consist of the representatives of the physician and pharmacist chambers, the Office for Drugs and the Public Health Institute. The aim of such a project organisational scheme is to secure consensus among all the competent bodies, and in particular in the medical and pharmacist profession, prior to implementing the novelty in the practice.

The project was launched in January 2004. Following the initial phase of the development of business and technological design, the project is scheduled to advance in the initial implementation phase, the upgrading of software in different environments, in June this year, and in autumn, the preparations for a pilot implementation are to start. The experiences gained in the pilot project should allow fluent project transition to the national scale implementation phase, scheduled for completion in mid 2005.

The estimated project costs are equivalent to 1 promile of the annual expenditure on drugs on prescription. The total costs include the costs of the required modifications of the existing infrastructure: desktop and portable card reader software, network software, field pilot test etc. The estimate does not, though, take into account the costs of modernisation or acquisition of hardware for the doctors and other health care service providers.

6. FURTHER DEVELOPMENT

Through the new data item on the card and through the uniform national drug database, the project of recording of issued drugs on the card will set an information groundwork for the prospective further development in the broader health care environment. The state-of-the-art and modern drug data and their technological support will allow the development of tools for the doctors, designed for professional assistance in their prescribing of medication. Such prospects will also require the development of uniform professional directives for the treatment and prescription of drugs, combining the efforts by all institutions responsible for the associated fields at the national level. The new card functionality will promote the equipping of medical environments with computer hardware and in turn their application of other modern professional tools as well.

In addition to its direct benefits, the introduction of the recording of drugs on the card also serves as the first step towards the introduction of electronic prescription. This will require the upgrading of the card system infrastructure with the electronic signature function. The electronic signature will in turn render the card system suitable for a host of other new applications in the health sector, i.e. applications involving the handling of sensitive medical data and subject to the provisions of the electronic commerce act.

Health Insurance Institute of Slovenia, Miklošičeva 24, 1507 Ljubljana
Marjan Sušelj, e-mail: marjan.suselj@zzzs.si
Anka Bolka, e-mail: anka.bolka@zzzs.si