eHealth strategy and implementation activities in Belgium

Report in the framework of the eHealth ERA project

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About *eHealth ERA* and this report

This report is the outcome of research in the context of the eHealth ERA project (Towards the Establishment of a European Research Area). The project is implemented by empirica GmbH (co-ordinating partner, Germany), STAKES (Finland), CITTRU (Poland), ISC III (Spain), CNR (Italy) as well as EPSRC and Imperial College (United Kingdom), based on a Coordination Action contract with the European Commission.

The European Commission, Directorate General Information Society and Media, supports this project to contribute towards greater transparency across Member States and other participating countries on eHealth strategies as well as innovation-oriented research and technology development (RTD) initiatives, including the coordination of Member States' eHealth strategy formulation and implementation. Thereby the project aims at fostering the establishment of an effective European Research and innovation Area (ERA) in eHealth. All project results are available on the internet and can be accessed at the *eHealth ERA* website: www.ehealth-era.org.

The status of activities described is generally August 2006.

Legal Notice

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Executive Summary

Strategic perspective

Belgium is a federal constitutional monarchy, where executive and legislative power is divided between the federal government, three regions (Flanders, Wallonia and Brussels) and three communities (Flemish, French and German-speaking). Communities are competent for personal matters (health, welfare), cultural matters, education and training, and co-operation between the communities and the regions. Each region and community has its own legislative and executive powers in its field of competence, and its own parliament and government to exercise these powers. Belgium's eHealth policy is therefore subject to several ministries. Due to the large number of participants involved and the institutional complexity, Belgium sees clear advantage and need for a concerted official national eHealth roadmap. This national roadmap is mainly sponsored by the Ministry of Health, and by the Secretariat of State for Informatisation of State.

The objectives of the eHealth strategy have changed over time. Initially driven by the need for simplification and cost efficiencies of social security administration, the ICT for health agenda is now also seen as the opportunity for quality improvements. Demographic concerns are expected to be one of the main forces driving the acceleration of eHealth related programmes. Legislation exists in the area of patients' rights, privacy, data protection, medical devices liability and certification of patient record related software. A "Health Telematics" law is under discussion since 2005.

Implementation perspective

The approach to implementation is incremental with many health related issues, such as prevention and infrastructure, being dealt with at the regional level. Belgian hospitals also depend for part of their funding on the delivery of anonymised minimal electronic data sets related to hospitalisation description, including diagnosis and procedures. This provides a powerful incentive to implementation of an integrated electronic hospital medical record which are then adapted to include patient-centred functionalities and information.

The main efforts coordinated by the Ministry of Health have focused on the following aspects:

- Contributions via the "Telematics Commission" to the establishment of technical norms by recognised national experts. Since early 2000, the National Commission "Telematics Standards in relation to the Health Sector" have issued nine recommendations on the basic conditions for exchanging and sharing health information.
- Establish a certification process for minimum level of quality and interoperability of authorised ambulatory care software distributed on the Belgium market.
- Adapt or develop key reference databases and codification systems for diagnostics, treatment, careand drugs.
- Define an XML implementation for health related electronic messages, compatible with HL7: "Kmehr" (Kind Messages for Electronic Health Records).

- Initiate health networks on a “loco-regional” basis (3 initiatives “Flow”) to develop the concept of “shared health record”.
- Contribute to the establishment of the national technical platform “Be-health”.
- Ensure structural funding for operational research on key issues such as: patient identification, electronic signature implementation, certification of hospital information systems and telemedicine.
- Document needed adaptations in the legal context with concerned stakeholders.

Since 1998, all beneficiaries of the Belgian social security system use the SIS card. The primary objective of the later Carenet project, launched in 2004, is to check insurance entitlement rights of patients and allow – when possible – third-party payment. It aims to establish a 99% paperless communication between insurance funds and all Belgian hospitals. Certain health care providers such as pharmacists and all hospitals need to use a data access card in parallel (Security Access Module card). The SIS Card is also currently being used for other identification purposes, but is gradually being replaced by the Belgian eID card.

The Belgian citizen eID (Electronic Identity Card) was launched in production phase in September 2004 with the goal of achieving a roll-out of 1.8 million cards per year. Currently almost four million cards have been issued. Total national roll-out is scheduled to be completed in 2009. This will gradually replace other cards for general identification and authentication purposes. The card can be used as a key to access centrally stored information. This principle will be applied when the functionality of the current social security information card (SIS card) is integrated in the eID.

The Belgian eID is a smart card containing two certificates: one for authentication, and one for generating digital signatures. It contains identity data, more specifically the identity data that are also visible in printed form on the card, except for the address of the cardholder, which is only stored in electronic form.

As a major nationwide step towards interoperability, Belgium aims to introduce the Summarised Electronic health Record (Sumehr). This is now already technically possible at the ambulatory care level. The current development of health networks will naturally increase the demand for the “product”. In a second phase, it is foreseen to organise a public information campaign aiming at a national roll-out

Future activities

In 2007, two major regional networks devoted to sharing of patients records will enter their pilot phase. The Be-Health platform will ensure interconnection of the networks and will also support needed national services such as the register of health professionals. With basic interoperability now within reach at ambulatory care level, priority will be devoted to the development of “intelligent” applications (decision support) for general practitioners, and to the structure and codification of patient files for other practices.

ePrescription is also being studied with possible implementation tests scheduled from 2008. The legal environment is expected to be strengthened by a new law on telemedicine Reference databanks will be further enriched and made available to the industry.

The Kmehr “cookbook” will be enlarged and upgraded.

1 Healthcare System Overview

1.1 Basic facts and features

Q1. Main decision making level for health care policy

Belgium is a federal State where three types of entities have separate powers: the federal (national) Government, the Communities and the Regions.

The Federal Government is primarily competent in matters of general interest that affect the whole population, such as finances, the armed forces, justice, social security, foreign affairs, an important part of public health care, home affairs, ...

There are three Communities: the Flemish Community, the French-language Community, and the German-language Community.These Communities are responsible for a whole series of issues that are associated with language and culture, such as education, and for the so-called "personal matters".The latter include both health care policy (preventive and curative medicine, the implementation of hospital planning and accreditation legislation) and assistance to individuals (youth protection, youth support, social assistance,...).The Communities also have authority in matters relating to scientific research and international relations in the areas that are within their competence.

The Regions, whose existence is based on the notion of ”territoriality”, also are three in number: the Flemish Region, the Walloon Region, and the Brussels Capital Region.They are competent in areas associated with ”territorial“ affairs in the broad sense of the word (e.g., economy, employment, agriculture, natural resources like water, housing, public works, energy, environment, urban development, foreign trade e.g. representing their industry, ...) as well as in scientific research and international relations in the afore mentioned areas.

The competence of the federal authorities in the area of public health is exercised by the Minister of Public Health and the Minister of Social Affairs, and by an administrative entity, the Federal Public Service Social Security and the Federal Public Service Health, Food Chain Safety and Environment.The federal authority is responsible for policies on the provision of services in healthcare institutions and, outside of those, in the following areas:

a) organic legislation (the Hospital Act, ...);

b) the financing of operations, when foreseen in the organic legislation;

c) compulsory health care insurance (branch of social security);

d) the basic planning of healthcare;

e) the definition of basic rules governing the financing of the healthcare infrastructure, including high-technology medical equipment;

f) the definition of national standards of approval but only to the extent that these can have repercussions on the powers provided for under b), c), d) and e) above;

g) the definition of the conditions and of the designation as university hospital in accordance with the hospital legislation.

Matters relating to medicines, to medical devices and to the trade in certain substances (narcotic drugs, hormones) are also within the competence of the federal authorities.

The same applies for the general rules governing the practice of medicine in a broad sense of the word and emergency care.

The public health competences of the Communities and Regions: The Dutch-speaking, French-speaking, German-speaking and Brussels joint Community Commissions of the Brussels Region are responsible for the ”personal matters“, both in the area of public health and in that of assistance to individuals. They are responsible for:

- Providing medical care in or outside hospital settings, with the exception of those areas that are within the competence of the federal authorities as listed above ;
- Health promotion and prevention campaigns, with the exception of some preventive measures that are undertaken at the national level.

Since 1 January 1994, the Walloon Region and the French Community Commission - the former on the territory of the French-language Region and the latter on the territory of the bilingual Brussels Capital Region have been exercising the powers of the French-speaking Community in health policy matters, with the exception of university hospitals, child care, health promotion information, preventive medicine and school medical inspectorate.

Consequently, the powers entrusted to the federated entities allow them to formulate and pursue a health care policy.In addition, they allow them:

- to set accreditation conditions for rest homes , health care co-ordination centres and home care, medical centres (associations of integrated health), mental health services;
- to support, encourage and fund these institutions;·
- to recognise general and psychiatric hospitals with due respect for the federal accreditation standards;
- to accredit residential care homes, psychiatric care homes, sheltered housing for psychiatric patients with due respect for the federal accreditation standards;
- to implement the basic rules applicable to hospitals, residential care homes, psychiatric care homes and sheltered accommodation.

Cooperation between the federal government and the federated units: Devolution in Belgium has resulted in the distribution of responsibilities among the different levels of power. In order to ensure better co-ordination, particularly between preventive and curative policies, while leaving each level responsible for its individual affairs, cooperative agreements have been concluded in a number of areas, such as the policy with respect to Drugs, vaccination and breast cancer detection. For example, with regard to vaccinal policy, the powers have been distributed as follows:

- the scientific aspects are discussed by the federal Health Council;
- the federal authority is in charge of the only statutory vaccination, the poliomyelitis vaccination;
- the Communities are responsible for the „non-compulsory“ but recommended vaccinations, for the prevention agencies and for the vaccine ordering and distribution networks within their regions.

With respect to breast cancer detection, systematic mammography screening for all women between the ages of 50 and 69, covered by compulsory health insurance, has been the subject of a protocol of agreement between the federal authority and the Communities, in which the federal government pledges to make the necessary funds available for mass

screening through the National Sickness and Invalidity Insurance Institute (NISII-INAMI/RIZIV), while the Communities will take care of the organisation of the screening campaign.

References:

be.Health, Health care in Belgium, March 2004 Update of the Original version that has been published by the Belgian presidency of the European Union in the second half of 2001

http://www.euro.who.int/document/e71203.pdf

Note: a chart of Belgium health system is available but can not be pasted due to the formatting of this document

Q2. Main healthcare service delivery systems

Health care providers in Belgium can be divided into:

- independent health professionals (both generalists and specialists) providing ambulatory care and services
- public health services and public hospitals
- private hospitals
- the pharmaceutical industry
- social care facilities for the elderly and other groups with special needs.

For patients, the significant advantages of the Belgian health care system are:

- near-complete health insurance coverage based on social solidarity;
- exceptional availability of the care, nearly no waiting lists, except for some very very specialised care;
- high standard quality of the services;
- low co-payments;
- free choice of medical professional and of insurance fund;
- freedom of choice when requesting care and freedom of treatment for the healthcare professionals, the system being mainly based on a fee-for-service approach.

Access to health care is easy and equitable, due to the low co-payments and the fact that (since 1 January 1998) any resident in Belgium has the right to health insurance coverage. However these aspects are undermining incentives to control the system. The actual system is therefor vulnerable to abuse, to inefficiency, to over-supply and overconsumption of services resulting in a possible waste of resources and a cost escalation.

Other weaknesses include imbalance of supply of different types of care (e.g. too many hospital beds and not enough long-term-care beds), and tension between fee-for-service payment of doctors in hospitals versus the hospital's "closed budget" system of payment. Reforms have been subsequently adopted and in 2006, the first (financial) results have been obtained.

References:

http://www.euro.who.int/document/e71203.pdf

1.2 National-level health goals

Q3. Main issues and strategic targets of the national healthcare policy and the period 2005-2010

Belgium does not have a national plan for its health policy, and policy-making is more a series of ad hoc measures than a coherent long-term strategy or vision.

Part of the reason for this lies in the divided structure of policy creation in general and the health care system in particular;

The key features of the Belgian health care system are:

- Liberal ideas of medicine: the majority of providers are self-employed, are paid per service (fee-for-service) and enjoy "complete" freedom of diagnosis and therapeutic choices;
- A compulsory health insurance system, managed jointly by all the stakeholders of the sector, i.e. insurers, health care professionals, funders (employers, employees and independent workers), public authorities ;
- Freedom for patients who are free to choose both their health care professional and their hospital (private or public), which implies that they have free direct access to medical specialists as well.

At the beginning of each new parliamentary new budget and a general policy note is made available to the parliament and approved by the parliament. However, this note does not reflect always a very long term strategy.

In 2004, the Minister of health organised a broad discussion on the future of the health care system , called "health dialogues". The main general conclusions were:

1) Fixing the basic principles for any health policy: accessibility, quality and sustainability

2) Focusing on 11 priorities (and 120 concrete actions):

- care for the ederly
- chronic diseases and coma
- health paths
- fraud control
- mixed lumpsum - fee for service system
- control of medicines budget
- administrative simplification
- matching of offer and demand
- price control in certain sectors
- relevance of norms - ethical questions

- no fault system (responsibility of the healthcare providers and professionals without need to prove a real professional error).

3) Improvement of identified weaknesses:

- decision making process complexity
- prevention
- overconsumption
- organisation of services and suboptimal offer.

4) Consolidation of strengths:

- efficiency price-quality
- accessibility
- solidarity
- good coverage of general compulsory health insurance.

References:

http://www.lachambre.be/site/wwwcfm/search/doc.cfm?language=fr&xurl=/FLWB/HTML/51/3/51K1371031.html&query=51K1371031

http://www.rudydemotte.be/communiques_asp/discoursplen.doc

http://www.sante.cfwb.be/charger/PQ2004.pdf

http://www2.vlaanderen.be/ned/sites/wegwijs/welzijn_en_gezondheid.htm

http://www.awt.be/web/dem/index.aspx?page=dem,fr,foc,100,040

Q4. Major currently running national (or regional) programmes

Official name or title of the programme: NA

Current progress status of the programme: in preparation.

Role of ICT in the programme: monitoring of programme activities.

2 Strategic eHealth plans and policy measures

2.1 National and regional eHealth policy

2.1.1 Main actors

Q5. List of ministries influencing regional/national eHealth policy

In Belgium the main federal ministries responsible for eHealth are:

- The Ministry of Health and the Ministry for Social Security,
- The Ministry of the Interior: all matters linked to security.
- The Secretariat of state for administrative simplification (directly under the Prime Minister)
- The Secretariat of state for computerisation, which oversees FEDICT.

Other Public Services such as justice and public function are also involved but on an ad hoc basis.

Belgium is a federal state; thus e-Health related issues such as prevention and infrastructure are mainly dealt with at the regional level. The Regions rather than the Communities have been active on the e-Health issues but with important differences from region to region. A major part of the investment needed to deploy new local infrastructure is to be funded through regional channels.

FEDICT, the Federal Public Service for Information and Communication Technology, has been playing a key role by developing the use of the Belgian smart card (e-ID), the national interoperability framework and supporting all e-government initiatives. Working with all federal entities, it plays an important stimulation role.

The role of the Federal Public Service of Public Health is mainly to act as a coordinator between all actors involved in the health sector and to develop key research areas. Discussions on standards and contents take place almost exclusively at this level.
The college of mutualities (CIM-IMC), grouping the sick funds, plays also an active role in key applications linked to social security such as "Carenet" while the "Crossroad Bank for Social Security" has been the driving force behind the development of the "SIS card" (social security insurability card.

Aside from governments, public institutions like the NSIII (National Sickness and Invalidity Insurance Institute - INAMI/RIZIV) is also closely associated to the development of e-Health related issues.

SmalS-Mvm/egov has been entrusted with the development of key software applications related to e- government and e-health.

References:

http://www.belgif.be/index.php/Interoperability_framework

https://portal.health.fgov.be/portal/page?_pageid=56,512847&_dad=portal&_schema=PORTAL

FEDICT:http://www.belgium.be/eportal/application?origin=charterHome.jsp&event=bea.portal.framework.internal.refresh&pageid=charterDetailPage&navId=3644

http://www.cin-aim.be/fr/contact/

http://www.smals-mvm.be/site_fr/home.html

http://www.ksz-bcss.fgov.be/fr/carteSIS/sis_home.htm

2.1.2 eHealth Roadmap

Q6. Roadmap or corresponding government-level strategic document

There is no formal roadmap. This does not mean that there isn't a strategy for eHealth.

The Belgian strategy is based on incremental set of initiatives in order to remove, step by step, obstacles to the exhaustive use of eHealth services. Initiatives at National level are: the introduction of eID, the decision and the effective set-up of a eHealth backbone infrastructure (Governmental Decision of December 2004), the registry of health professionals, a legal initiative on the electronic signature, the labelling of EHR systems for GP's, for dentists, for nurses and for physiotherapists etc… These National initiatives are completed with regional initiatives as the Health Network (Gezondheidsinformatiesysteem, Belgisch Staatsblad 20060907) in the Flanders, with the ambition to centralise all releveant data regarding health epidemiology and preventive care (a regional competence in Belgium).

Chronologically key national reference documents are thus:

- Royal Decree of 3 MAY 1999 deciding of the creation of a Commission „Norms related to telematics in support of the healthcare sector“
- Law of 25 MARCH 2003 modifying the law of the 8 august 1983 organising a National Registry of physical persons and the law of 19 JULY 1991 relative to population registers and identity cards and modifying the law of 8 AUGUST 1983 organizing a National Register of physical persons
- Note for the counsil of Ministers, décember 2004, on the creation of be-health plateform.
- Health network in Wallonia: Functional and technical specifications. 31/10/2006. Other reference regional documents will be soon available.

In 2005, a first proposal of law was drafted. It aimed at providing answers to already identified questions such as legal existence of a national e-health platform, definition of concepts such as "health data", patient idenfifiers, telemedecine etc After preliminary discussions, it became obvious that more time was needed in order to reach a national consensus.

Work is still on process on those -legal- issues but the be-Health technical platform is already under construction.

References:

http://212.123.19.141/ALLESNL/wet/detailframe.vwp?SID=0&WetID=1014930

http://www.juridat.be/cgi_loi/loi_F.pl?cn=1999050395

https://portal.health.fgov.be/portal/page?_pageid=56,4280428&_dad=portal&_schema=PORTAL

http://www.reseausantewallon.be

Q7. Responsibility for drafting the eHealth roadmap

A large number of public instances are responsible for different aspects of health and by extension for eHealth.. They are listed under Q 1 and 5

The preparation and drafting responsability has been up to now mainly into the hands of the FPS of Public Health and FEDICT.

The "telematics commission" has an important preparatory role in discussing and proposing technical norms.

Since 2005, drafting of technical and functional specifications of health networks has been delegated to loco-regional associations gathering hospitals and GPs. They only need to respect existing national norms and to be "be-health compliant".

An official and national roadmap, agreed on with regions and communities, should be a way to handle this complexity and the large number of actors involved.

The creation of "Be-Health" should be considered as a first step in that direction. A "vision group" has been created: it gathers representatives of all main stakeholders of the belgian healthcare system and recognised experts in information technology. It will mainly evolve as a consultative assembly.

Given the acute sensitivity of the issue, the ultimate approval process of the roadmap is to take place at the federal government level.

References:

http://www.health.fgov.be

www.belgium.be/fedict

Q8. Implementation and involved actors

Implementation of eHealth requires a large consensus between the public instances listed in Q1 and Q5 and different "technical" actors involved too.

From an historical perspective, the implementation chain can be described as follows:

1) Creation of a group of experts (Belgian Health Telematics Commission) which will define "technical priorities". The experts are mainly representatives from the RTD field (Universities, University hospitals, Expert(s) form the private sector).

2) Main implementation and testing ground took place through the labelling of Softwares for General practitioners. The FPS of Public Health took here a leading role and the NSIII (National Sickness and Invalidity Insurance Institute - INAMI/RIZIV) made possible initial direct funding to practitioners. It keeps today the leading role in term of coordination of all initiatives but funds only key Research and development issues.

3) Other key actors involved in implementation chain : The National Commission for the protection of privacy and confidentiality, the BHTC (Belgian Health Telematics Commission) regarding standards; the national social security fund (INAMI/RIZIV) responsible for funding approved initiatives; Healthcare Institutes as users of eHealth; sick funds representing the patients; content from the faculties e.g. evidence based eHealth services and finally the specialised health IT industry provides the tools, the applications enabling eHealth services on the care scene.

4) Initial deployment is expected to take place from the loco-regional networks (free association of health care practitioners and hospitals).

References:

www.riziv.be; www.inami.be; www.riziv.fgov.be; www.inami.fgov.be

www.privacycommission.be

https://portal.health.fgov.be and go to home\health care\telematics\telematics commission

www.health.fgov.be/telematics

2.1.3 Timeline and targets

Q9. Publication and revision

No formal roadmap, therefore no formal date of publication.

The country is, regarding the redaction of such a national roadmap, in a stand-by phase. But building blocks of that future roadmap such as Be-Health and regional networks are already partially on track.

Q10. Main strategic targets

The National and Regional initiatives mainly focus on quality of information systems, on cost efficiency in care, on interoperability, on patient mobility and safety and on the use of standards to enable all this.

As far as quality is concerned, it is important to note that in many instances, one prerequiste has been to define the content of the "health record" in each environment and sector (Nurse record, kine record, dentist record etc..). We chose a sectoral approach in order to guarantee appropriation but this is of course quite time consuming.

Q11. Start of implementation work towards achieving the roadmap goals

Start date: 01/01/1998

Health telematic services started in private care in 1988. Public attention towards eHealth and more especially the EHR started in 1998 with the constitution of a standardisation / labelling group of experts for the EHR. This resulted, as a starting point, in a large set of criteria (333) to be fulfilled by EHR systems, available in 1999. The original set has been adapted, defining

mandatory and optional issues, to be used in a certification process. The referenced document is in French and Dutch.

References:

https://portal.health.fgov.be/pls/portal/docs/PAGE/INTERNET_PG/HOMEPAGE_MENU/

GEZONDHEIDZORG1_MENU/AUTOMATISERING1_MENU/

HOMOLOGATIONLOGICIELSPARAMEDICAUX1_MENU/

MEDECINEGENERALE1_MENU/MEDECINEGENERALE1_DOCS/EMD-PROREC-1999.PDF

2.1.4 Progress

Q12. Achieved progress in implementation of eHealth roadmap compared to its milestones

A large number of services and building blocks have been implemented at National as well as at regional level:

- labelling of the EHR systems used by GP's, home nursing professionals, physiotherapists and dentists;
- 100% informatisation of imaging departments and lab's, high penetration of clinical documentation applications in the hospitals;
- private health telematic services for lab results (>90% of the results addressed to primary care), imaging reports, referral reports and other kind of reports between health care professionals, e.g. on duty reports;
- implementation, at Ministry level, of the BeHealth backbone on which future authenthication services, patient index services and data reference services will be offered;
- comprehensive clinical Thesaurus with a validated mapping to ICPC2 and ICD10;
- for free available official drug database: CBIP/BCFI;
- several private thesauri and drug databases with mapping to national and international codes;
- standard messaging syntax (KMEHR- Kind Messages for the Electronic Health Record - Belgian implementation standard);
- Sumehr: official patient summary based on Kmehr;
- private initiatives favouring shared care between primary care professionals and between hospitals and local primary care professionals, using secured portals;
- definition of technical and functional specifications (the FLOW initiative) of health newtorks in Wallonia, Brussels and Flanders;
- vaccinet: regional vaccination database in Flanders.

In the field of social security, extensive use of information technology and cards has been initiated at an early stage. See the development of the SIS card and Carenet.

References:

www.chu-charleroi.be/kmehr/htm/kmehr.htm

https://vaccbank.kindengezin.be/Vaccinnet

www.cbip.be; www.bcfi.be

http://www.carenet.be

Q13. Extending to or increasing interaction with social care

Not clear what social care means here. I here exclude social security aspects.

The main experiences worth to be mentioned at this stage are:

- The electronic use of the "Residence Assement Instrument" (RAI) as a first test case of multi-disciplinary work and shared patient electronic health record. This will also include social workers
- Pilot "Be-Health" project related to electronic management of handicap benefit scheme.

No references available at this stage

Q14. By- or multi-lateral cooperation with other Member States

- Cooperation starting between Belgium and France (Haute Autorité de la santé) on the labelling of EHR systems
- Larger and less formal cooperation with other member states on the same topic and through the Eurorec Institute and the E.U. funded QRec project.
- Active participation in CEN/WICC and other standardisation organisations in Europe. See the WONCA web.

Large participation in eHealth projects issued by Infso and Sanco.

References:

http://www.ulb.ac.be/esp/wicc/

2.1.5 Dissemination and co-ordination activities

Q15. Launched activities for making the eHealth roadmap widely known

- Expert group consultation.
- Workshops.
- Presentations in events and newspaper or journal articles.
- Paper based official documentation

Q16. Co-ordination and responsibility of these dissemination activities

No structured coordination on the dissimination. Each initiative has been documented when appropriate.

Q17. Dissemination activities through alternative media channels

NO, as there is no formal roadmap

Q18. Kinds of activities targeting specifically healthcare professionals

- Expert group consultation.
- Workshop.
- Presentations in events and newspapers or journal articles.
- Online information.

Q19. Kinds of activities targeting specifically the general public

- Presentation in radio and TV.
- More especially on social care related activities.

Q20. Available means to the general public for expressing their opinions on eHealth

No specific means available at National level or organised by public organisations, at this stage.

A first debate has however been started after initial diffusion of the first draft of so-called "Be-health" law. But debate has been limited mainly to actors involved directly in the healthcare system with only a few articles targeting a broader audience.

Recently, representatives of associations representating patients have been officially associated to the debate of the Telematics commission.

References:

http://www.belgium.be/eportal/application?languageParameter=fr&pageid=contentPage&docId=37478

http://www.ftu-namur.org/fichiers/Emerit44.pdf

http://www.vlaamspatientenplatform.be/

http://www.luss.be/

2.2 Investment and Reimbursement framework

Q21. Supported or funded types of investment for implementation of systems and applications

Different types of mostly indirect funding of investments favouring the implementation of eHealth systems:

1. Development and distribution free of charge of a drug database and a thesaurus (content): Provider: FPS Public Health. Recipient: BCFI-CBIP, Universities of Gent (UZG)and Brussels (ULB).
2. Funding of research related to the structuring of the EHR (software): Provider: FPS Public Health. Recipient: Universities, Sectoral scientific associations.
3. Funding of education and training of healtcare professionals (professional training and content);Provider: NSIII (National sickness and Invalidity Insurance Institute - INAMI/RIZIV). Recipient: Scientific societies.
4. Funding for telematic associations (regional user groups) (professional training).
5. Funding for the computerisation and the use of labelled EHR systems by GP's, physiotherapists, dentists and nursing personnel (hardware, software, data-exchange,…) Provider: NSIII Recipient: Healthcare providers.
6. Funding of projects improving eHealth services between hospitals and GP's, e.g. portal services (sharing of clinical data): Provider; FPS Public Health. Recipient: Belgian Hospitals. Infrastructure and deployment: Regional governments. Recipient: Loc-regional consortia (Hopitals-GPs).
7. Funds for the creation of loco-regional health networks; Providers: Research and development: PS Public Health Infrastructure and deployment: Regional governments. Recipient: Loco-regional consortia (Hopitals-GPs).
8. several research projects promoting prototyping and market validation funded by
   - National Research Institutes (FWO-FNRS)
   - IWT - IBBT - … for the Flanders
   - ICT Cluster projects for Wallonia
   - AWT: Wallonia Agency for telecommunications.
   - CIRB in Brussels

9. Funding of the costs of development of the Be-Health platform: Providers: FPS Public health, NSIII, Secretariat of state for state computerisation. Recipient: SMALS-MVM.
10. Funding of other essential building blocks: Registry of health professionals, Belgian national messaging norm (Kmehr), Electronic signature, Be-prescript concet etc..:Provider: FPS Public Health. Recipients: Scientific associations and private companies.

References:

http://www.cbip.be/

http://www.smals-mvm.be/site_fr/content/Enterprise/smals-mvm.html

http://www.cirb.irisnet.be/

http://www.ibbt.be/

http://www2.fnrs.be/

http://www.reseausantewallon.be/

http://www.awt.be/web/dem/index.aspx?page=dem,fr,foc,100,040

Q22. Investment in the country from the funding sources

- Regional Funds.
- Structural Funds.
- Specific national credit programmes.

Q23. Reimbursement schemes to support the diffusion and implementation phase of eHealth applications

- Several national and regional projects to promote eHealth through pilot and validation projects more especially regarding sharing of patient data, cooperation between healthcare professionals, set-up of regional networks, homecare, authentication and identification services
- Promotion of the use of labelled clinical/professional software for GP's, dentists, home care nurses and physiotherapist, in total for over 16 Millions €.per year
- Funding of hospitals for specific IT implementation requirements and to promote data exchange with local/regional GP's: around 1 million €/year
- Funding of regional health networks: Amounts differ from region to region : 250.000 € and 1.5 million €/network/year. 250.000 €/year from federal level.
- Funding of be-health platform: First envelope of 1.8 million €. but intensive use of previous massive investments in e-government.

Q24. Types of eHealth services eligible for reimbursement in the country

The eHealth services as such are not eligible for reimbursement. They are funded indirectly through enabling investments in standards, in a thesaurus and other databases and needed infrastructures.

Q25. Channels of reimbursement

No specific reimbursement of the services as such, at least for the time being.
Participation in pilot e-health related projects (such as RAI for example) is subject to payment of incentives.

3 eHealth deployment status

3.1 eHealth infrastructure

3.1.1 Physical networks for eHealth in Belgium

Q26. Available types of physical networks for supporting the provision of eHealth services

Standard broadband telecom network as well as cable network (TV) are generally available throughout the country. Several service providers on that infrastructure.

Q27. Dedicated healthcare network or plans to establish one

- There are since over 15 years several dedicated private networks addressing the needs of the healthcare professionals and using the "public" infrastructure. Some are deployed nationally (e.g. MediBRIDGE), others more regionally (Mexxi, Mediring) over even as a network of hospitals (Charleroi).
- Carenet is another national network, initiated by the sick funds, used for social security purposes, more especially for the transfer of billing data by hospitals, healthcare institues and pharmacies.
- A national eHealth backbone is being implemented actually (BeHealth). Authentication services and a patient master index will be provided on that backbone.

References:

www.medibridge.be

www.carenet.be

www.mexi.be

www.mediring.be

Q28. Technologies on which these eHealth networks are based

- - PSTN standard network
- - Broadband network (ISDN)
- - Cable network

The use of PSTN is decreasing very quickly since three to four years. It's expected that most (>75%) of the users will use - for their clinical practice - broadband or cable within 3 years from now.

Q29. Penetration and rates of use of eHealth networks

- healthcare institutes (hospitals…) : 100% are linked to several healthcare networks
- private labs: 100% connected
- pharmacies: 100% connected
- private practices in primary care (GP's): 70% connected (Lower level of penetration-30 to 50%- for physiotherapits and nurses).
- sick funds /mutualities: 100% connected for administrative purposes, no "clinical links" with healthcare professionals
- research facilities: no connection with the eHealth networks, as far as known
- home care professionals
- citizens: are not yet directly linked to the eHealth netwoks. Only services publically accessible on Internet are also accessible to the citizen

References:

http://www.awt.be/web/dem/index.aspx?page=dem,fr,040,000,000: For Wallonia only and data before 2002.

Q30. Types of eHealth services which are delivered through these networks

- data exchange of lab results (electronic lab results are considered as legally equal to paper based results: no paper records required anymore)
- data exchange of imaging reports (with only a very limited exchange of the images / of some images)
- data exchange of discharge summaries
- data exchange of refferals (limited) and referral reports
- data exchange of "on duty reports"
- patient clinical summaries repositories (only at experimental level)
- clinical orders and referrals upload (upcoming)
- on-line booking services
- hospital based clinical portal services (the large hospitals)
- billing data from pharmacies
- billing data from hospitals
- third party payment data from private practices (limited)
- medicinal product delivery data (extracted from billing data)
- notification messages linked to ADT (admission, discharge, transfer) and death of patients
- clinical trials data (limited)
- second opinion services (links to centers of excellence): in validation stage

- home care monitoring and ambulant reporting services
- mobile EHR through GPRS and similar technology (starting)
- information distribution services for healthcare professionals as well as for the patients (medicinal product databases…)
- electronic prescription services (on project basis, starting)
- social security and insurability data repositiroies
- "vaccinet" services with a national register of vaccinations in childhood
- web services for risk management, e.g. cardiovascular risks
- reporting services between different healthcare professionals is starting, more especially between GP and community nursing services, between GP's and physiotherapists.

Data exchange services are mostly provided through addressed mail services. Some data are provided to portals and data collection centers, increasingly using web services.

Q31. Plans for future development and expansion of these eHealth networks

The existing services will expend naturally to reach within the next decade 90% of their potential.
New services will be developed and made available to the eHealth community, more especially linked to the BeHealth platform: TTP and authorisation services, patient master indexes, the so registries e.g. of "therapeutic links" between patients and their health team, decision support tools based on web services for health risk management and prevention.
There are plans to extend the labelling to pharmacy information systems and of the clinical charts in the hospitals.

Q32. Assessment of evaluation studies concerning the impact/ effectiveness of eHealth networks

One status study in 2004 by Luon, but already "outdated" considering the actual increase in services.

References:

http://www.luon.com/

Q33. Achieved progress regard to the implementation and use of eHealth networks

All the services enumerated in Q30 can be considered as success stories. There are some services where take off is rather difficult, more especially electronic referral services, lab request services, imaging request services, out-patient order services in general and indeed also prescription services.

3.1.2 Legal and regulatory framework (overview and Discussion)

Q34. National or regional legislation

- Data protection.
- Telecommunications (with regard to data protection and confidentiality).
- Digital signatures.
- Health-IT product liability.

N/A in telemedicine/eHealth service provision.

References:

http://www.juridat.be/cgi_loi/loi_F.pl?cn=2001070943

http://www.juridat.be/cgi_loi/loi_F.pl?cn=2003022642

http://www.juridat.be/cgi_loi/loi_F.pl?cn=2003031132

(1998-06-10) LOI modifiant la loi du 30 juin 1994 relative à la protection de la vie privée contre les écoutes, la prise de connaissance et l'enregistrement de communications et de télécommunications privées http://www.law.kuleuven.be/icri/keywords.php?where=

http://www.juridat.be/cgi_loi/loi_F.pl?cn=19980810224

http://www.juridat.be/cgi_loi/loi_F.pl?cn=20050824345

http://www.juridat.be/cgi_loi/loi_F.pl?cn=2003022642

http://www.juridat.be/cgi_loi/loi_F.pl?cn=2002082245

(1990-08-06) LOI modifiant la loi du 15 janvier 1990 relative à l'institution et à l'organisation d'une Banque-carrefour de la sécurité sociale

http://www.juridat.be/cgi_loi/loi_F.pl?cn=2000121232

Q35. Date of introduction or update of these legislations

- Date protection introduced in 1992.
- Telecommunications introduced in 2002
- Digital signatures introduced in 2001.
- Telemedicine/eHealth service provision expected in 2007.
- Health-IT product liability introduced in 1991.

References:

http://www.fundp.ac.be/facultes/droit/recherche/centres/crid/page_view/en/projets.html

http://www.law.kuleuven.be/icri/keywords.php?where=

There is no specific law for health-it products.: So general legislation on products defectiveness applies.

Q36. Competent authorities of the development and enforcement of the legal and regulatory requirements for the areas above

The main responsibility falls into the hands of federal authorities and specifically:

- The Minister of Social Affairs and Public Health
- The Minister of Justice
- The Minister of Interior (eId)
- The State Secretariat for State Computerisation.

Given the sensitivity of the issue, a decision by the council of Ministers is a pre-requisite to any major move. The State Council (Ministry of Justice) is always associated to all legal and regulatory initiatives. This is regulated by law.

The Belgian Court of Arbitration has as main mandate to solve conflicts of competences between federal and regional legislation.

The following organisations play de facto an important role:

- The privacy commission
- The "vision group" within the Be-health platform
- Authentication and certification Trust Third Parties such as Certipost
- The Belgian Medical Association ("Ordre des Médecins").

References:

http://www.raadvst-consetat.be/

http://www.arbitrage.be/

http://www.privacycommission.be/

http://www.certipost.be/fr/homepage.php3

http://195.234.184.64/web-Fr/index.htm

Q37. Required liaisons with Ministries

There is no formal requirement at this stage to liaise with one specific Ministry.

The FPS (Federal Public Service) of Public Health and FEDICT, the secretariat of state for state computerisation, are de facto part of the decision process.

Q38. EU-level regulations which the legislation has been harmonised to

- Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 “on the protection of individuals with regard to the processing of personal data and on the free movement of such data”. (Data Protection Directive).
- Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 “on a Community framework for electronic signatures”
- Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 “concerning the processing of personal data and the protection of privacy in the electronic communications sector” (Directive on privacy and electronic communication).
- Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 “on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market” (“e-commerce Directive”).

References:

(1995-10-24) 95/489/CE Directive 95/46/CEE du Parlement européen et du Conseil, du 24 octobre 1995, relative à la protection des personnes physiques à l'égard du traitement des données à caractère personnel et à la libre circulation de ces données. : 24/10/1995.

http://www.juridat.be/cgi_loi/loi_F.pl?cn=2001070943.

2002-07-12) Directive 2002/58/CEE du Parlement européen et du Conseil du 12 juillet 2002 concernant le traitement des données à caractère personnel et la protection de la vie privée dans le secteur des communications électroniques (directive vie privée et communications électroniques) : 31/07/2002.

http://www.juridat.be/cgi_loi/loi_F.pl?cn=2005082434.

Q39. Limitations or problems with existing or newly introduced framework concerning the above areas

The healthcare community is still struggling with the definition of a "personal health item", more especially with regard to Directive 95/46/EC and its translation in the Belgian law.

Maximalists consider the complete EHR as a collection of personal health items, even data that have been trustly anonymised before or when leaving that EHR.

More realistic professionals consider "personal health data" as data regarding the health and the provision of care about an identifiable individual person.

Another problem is the issue of the protection of the confidentiality of the health professional and the protection of confidentiality of third party data included in the patient record, e.g. family history data as well as hetero-anamnesis data.

Finally, a notorious part of the healthcare providers/professionals are not yet ready to adapt their practices to enable an electronic information flow. There is still an important resistance partially due to the "big brother" perception in an environment of "free enterprise practices", some of them part-time stand alone practices.

Q40. Achieved progress with regard to eHealth framework

There some important success stories to report on:

- The labelling of the EHR systems used by GP's, by dentist, by home nursing staff and by physiotherapist PLUS the subsequent financial support for the users of such systems.
- The "commission of the protection of privacy" and the different rules issues to protect that privacy, even if there are still some problems of interpretation.
- The generalised use of the SIS card, social security card, used to check the insurability rights of the patients, allowing them to obtain third-part payment services.
- The eID roll out, to be completed before the end of 2009.
- The standardisation and availability of terminology databases and of an official database of medicinal products.
- The legislation on the electronic signature (law on certain legal aspects of services of information society -17/03/2003).
- The validity of electronic lab results as alternative to the paper based lab reports.
- The law on the rights of the patient (26/09/2002).
- The law of the protection of data with personnal content (18/03/1993).
- The roll out, on project basis, of the national eHealth network BeHealth, with the first services being in the implementation phase actually e.g. the registry of healthcare professionals and the registry of therapeutic links.

References:

http://www.ksz-bcss.fgov.be/fr/carteSIS/sis_home.htm

htto://eid.belgium.be

3.1.3 Education and training on ICT (overview and Discussion)

Q41. Available education programmes to promote the necessary general ICT skills by the general population

Yes, there are such programmes:

- All the schools are equiped with PC's. A minimal set of competences has been defined this year in the Flemish community to be acquired by all pupils at the end of the primary school (12 year) and the end of the secondary school (18 year).
- all libraries have a computer department with electronically accessible information or books and access to Internet.
- employment offices (VDAB/ONEM/FOREM) are providing computer courses to unemployed individuals, for free
- the Ministry responsible for computerisation selected a so called "Internet Package" including a PC, a flat screen, a broadband connection with Internet for one year, a

printer and three hours basic course for Internet, for a package price of 800€, deductible from the income tax.

References:

http://www.leforem.be/informer/se_former/seformer_forem_formation_adistance.htm

http://www.orbem.be/

http://www2.vlaanderen.be/ned/sites/wegwijs/welzijn_en_gezondheid.htm

http://www.belgium.be/eportal/application?pageid=indexPage&navId=38747&languageParameter=fr_BE

http://www.awt.be/web/dem/index.aspx?page=dem,fr,foc,100,040

Q42. Available education programmes to promote necessary ICT skills by health care professionals at all levels

- For general ICT skills: cfr Q41.
- All the faculties of Medicine has an optional course on Medical Informatics.
- A degree, a specialty "Specialist in processing healthcare data" was created in 2000.
- Every hospital needs to have in his staff at least one person with that degree.
- Training of GP's pays a big attention to the use of the EHR as well as to the use of coding schemes.
- Training sessions or conferences related to the use of ICT in Healthcare can be accepted for CME "points".
- No similar educational programmes exist for nurses, dentist or physiotherapist (to our knowledge).

Q43. Available education programmes to promote necessary ICT skills by health care administrative and support staff at all levels

- For general ICT skills: cfr Q41. General ICT skills does not seem to be a problem for administrative staff. A good knowledge/ experience in "Office" related software applications is mostly sufficient.
- eHealth-specific skills are mostly not required but are possible. eHealth ICT is required for specialised medical secretaries and when getting the degree of "hospital sciences"

Q44. Achieved progress to the provision and acquisition of eHealth-related skills

- New curriculum to become "specialist in processing of healthcare data". Several Belgian universities offers this possibility.
- A CIO (chief information officer) is mandatory in each hospital.
- The proposal to include "e-health" in the compulsory cursus of GPs has however been rejected by a major medical syndicate.

Q45. Recognised job profile as "Health ICT specialist" and "Chief Information Officer"

Yes.

Q46. Available training curriculum for the qualification of "Health ICT specialist

Yes, as explained before.

The qualification requires an additional year and a thesis.

References:

https://portal.health.fgov.be/portal/page?_pageid=56,4280394&_dad=portal&_schema=PORTAL

Q47 Responsibility for the organisation of these education programmes

Several organisations are responisble for the different types of educational programmes. Hereby a non exhaustive enumeration:

- Ministries of Education
- Universities and more especially the Academic Centers for Ambulatory Care
- INAMI/RIZIV, the National Social Security organisation, as regulatory and funding authority responsible for the accreditation
- Scientific Societies
- Professional Unions
- User Groups of accredited applications, …

3.2 eHealth applications & services

3.2.1 Q48. eHealth applications and services with major implementation or pilot projects during last five years or ongoing

Electronic Health Records

- Title of project or programme: Accredition / Labelling of HER for General Practitioners.
- Type of application/service/system: Clinical EHR are on the market since 1986. More than 50 different providers has been identified over the years. The definition of criteria for labelling EHR systems started in 1997 with a functional description of the EHR and subsequently the start-up of a ProRec-BE project. The latter project resulted in a list of criteria, completed by end of 1999. A selection has been made during the year 2000 in order to enable a first labelling of the EHR systems on the market. 18 different

applications passed the 2006 accreditation session. More info on that can be obtained on the portal of the Ministry of Health.

- Timeframe of activities: Start Date 01/01/1997.
- Main partners and actors: Software vendors, scientific societies, users and the Ministry of Health.
- Current status: ongoing.

References:

https://portal.health.fgov.be/pls/portal/docs/PAGE/INTERNET_PG/HOMEPAGE_MENU/GEZONDHEIDZORG1_MENU/AUTOMATISERING1_MENU/HOMOLOGATIONLOGICIELSPARAMEDICAUX1_MENU/MEDECINEGENERALE1_MENU/MEDECINEGENERALE1_DOCS/RESULTS2006.PDF

https://portal.health.fgov.be/pls/portal/docs/PAGE/INTERNET_PG/HOMEPAGE_MENU/GEZONDHEIDZORG1_MENU/AUTOMATISERING1_MENU/HOMOLOGATIONLOGICIELSPARAMEDICAUX1_MENU/MEDECINEGENERALE1_MENU/MEDECINEGENERALE1_DOCS/GP-CRITERIA-2006.PDF

e-Prescription

- Title of project or programme: ePrescript.
- Type of application/service/system: service.
- Timeframe of activities: Start Date 01/06/2006 – End Date 29/02/2008.
- Main partners and actors: The main Belgian partners are MediBRIDGE nv, OmegaSoft Medical nv, OmegaSoft Wallonie sa and support by the Ministry of Health.
- Current status: ongoing. This is an eTen project, to validate the electronic prescription. This is the second project in Belgium. A previous project (in 2002/2003) failed, most probably due to immaturity of the market and the non-involvement of the specialised industry.

References:

www.esprescript.eu

Health Cards

- Title of project or programme: SIS card.
- Type of application/service/system: national insurance card; health professional card; patient (citizen) identification card.
- Main partners and actors: Ministry of Justice and Ministry of Informatisation and Ministry of Health. Other important parties: National Social Security (INAMI/RIZIV) and the sick funds.
- Current status: in preparation.

Health Portals

- Title of project or programme: GUSTAV.
- Type of application/service/system: portal for professionals; healthcare professional content; in-patient data during a hospital stay.
- Timeframe of activities: Start Date 01/01/2004.
- Main partners and actors: University Hospital Gent, Ramit vzw.
- Current status: ongoing. Most university and most larger hospitals are offering - only to the referring healthcare professional - similar services, providing on request data about their in-patient.

References:

http://www.uzgent.be/zv/

Risk Management and Patient Safety

- Current status: in preparation.

Patient Identifiers

- Title of project or programme: HEPI-GO.
- Type of application/service/system: proof of concept research project.
- Timeframe of activities: Start Date 01/12/2005 – End Date 01/07/2006.
- Main partners and actors: Federal Ministry of Health and Ramit vzw.
- Current status: completed.

References:

https://portal.health.fgov.be/portal/page?_pageid=56,512429&_dad=portal&_schema=PORTAL

Personal Wearable and portable communicable systems

- Current status: in preparation.

Other ICT tools assisting prevention, diagnosis, treatment, health monitoring, lifestyle management

- Current status: in preparation.

Telemedicine services

- Current status: in preparation.

3.3 Interoperability and standards

3.3.1 Technical Interoperability

Q49. Current status and future plans concerning the adoption and implementation of technical health ICT standards

Important investments has been done in the past to favour interoperability, starting with a ProRec-BE project to define criteria for the EHR and an initial version of a standar for dataexchange. The Ministry of Health did take it up and invested in a first version of the Kmehr (Kind Messages for Electronic Healthcare Record). The export and import of Kmehr compatible messages is yet a standard requirement for the labelled EHR's. This will be further developped with the objective to integrate major EHR structuring elements and codification in those messages, in principle foreseen for the end of 2007. This will be Kmehr2.

Already developped systems and norms will be maintained through structural contracting to third party non profit organisations.

Q50. Decision-making bodies concerning the use of healthcare coding and classification systems

The Federal Public Service of Public Health and the Belgian Health Telematics Commission.

Q51. Technical standards which are employed in health ICT application

- There is no COMPREHENSIVE technical syntax standard used by all the involved parties for all the services on the market. De facto standards are mostly used for the exchange of clinical data.
- Reporting from the hospitals and billing data for third party payment (mainly by hospitals, elderly homes, homes for chronic patients and pharmacies) are delimited text based. They are defined by the national social security Institute INAMI/RIZIV/NSIII.
- A set of xml syntax standards, based on HL7 version 2.3, has been defined and endorsed by the BHTC (Belgian Health Telematics Commission), the so called Kmehr standard messages. Kmehr stands for "Kind Messages for the Electronic Healthcare Record". Production, export and import of one these messages, the Sumehr message (Summary EHR), is, since 2005, a mandatory criterium for the labelling of the EHR systems.
- There are important differences between sectors.
- Data security standards:….
- Efforts are also done regarding the content (discussed in section Q54)

Q52 Time period of use of these standards in health ICT applications

The Kmehr standard has been imposed for the labelling since 2003, first the production and since 2005 also the integration of an external Kmehr based Sumehr message.

References:

http://www.chu-charleroi.be/kmehr/htm/kmehr.htm

Q53. General trend and future plans concerning the adoption and implementation of technical health ICT standards

- A new version of the Kmehr standard is planned for end 2006.
- Number of Kmehr compatible messages that will be mandatory will surely increase in the next years. The electronic prescription, defined in the ePrescript message, may well be one of them.

3.3.2 Semantic Interoperability

Q54. Specific initiatives concerned with semantic interoperability

Semantic Interoperability is one of the main investments of the last years. This interoperability has been favoured by:

- offering (for free) a large thesaurus of clinical terms to be used to label a diagnosis or any health problem, in the GP practices. A similar effort has been undertaken for the dentists, the ADA terminology mapped to the dental social security nomenclature. The thesaurus has been mapped to the main international coding schemes in use in primary care: ICPC2 and ICD10.
- providers using a proprietary thesaurus has to guarantee and to provide a correct mapping between their own thesaurus and at least the codes of the official thesaurus.
- the use of the national medicinal product package code is mandatory to record a prescription as well as in the ePrescript project.
- important terminology domains still need to be standardised, though important efforts are ongoing to standardise in the working group "data" of the BHTC commission.

References:

http://www.who.int/classifications/en/

https://portal.health.fgov.be/portal/page?_pageid=56,4280368&_dad=portal&_schema=PORTAL

Q55. Coding and classification systems which are in use in health ICT applications

- The national medicinal product package CNK.
- ATC for the identification of the (active) ingredients of the medicinal products.
- ICPC2 and ICD10 for the diagnostic statements in the EHR systems of the general practitioners.
- ICD-9-CM in the hospitals and the billing focused reporting from the hospitals.
- De facto Datasoft lab standard for lab results (at least in the Flanders). Mapping table with other coding schemes (Medigest / ACTH Charleroi) are available.
- ADA + Belgian Social Security nomenclature for dentists.
- ICF for physiotherapists. (work in progress).
- The national social security nomenclature for the diagnostic and therapeutic procedures by physicians as well as by other healthcare professionals. Limited to billable acts or previously billable acts.
- Some HL7 based tables are used in the Kmehr messages, though they required extensions for missing concpets.
- For laboratory data: Loinc is currently the base reference for the development of a unified codification system. (Work in porogress).

References:

www.chu-charleroi.be/kmehr/htm/kmehr.htm

http://www.who.int/classifications/en/

Q56. Healthcare settings in which these applications are used

- EHR applications with real clinical content are mainly in use in primary care.
- EHR applications in hospitals are either departmental systems with specific content considering the specialty of their users (e.g. an ophtalmologist, a physiotherapist, an imaging department,…) or focused on managing documents (orders and results) and recording billable acts.
- EHR applications in dental practices are used to document the status of the theets, recording the procedures performed and the "billable acts".
- Home care patient files are focused on planning the work and recording the performed acts.

Q57. Time period within which these coding and classification systems have been in use in health ICT applications

This depends on the application.

- Some applications in primary are using the CNK code, the ICD-9-CM and/or the ICPC1 code since their introduction on the market, most of them between 1986 and 1996.

- Hospital summaries are based on ICD-9-CM and the DRG's since the early 80's. ICD-9-CM will be replaced by ICD-10 in 2008.
- Most applications did not use any coding scheme until the start of the labelling process. They were based on a free text registration and document management.
- Lab result codes are in use since the end of the eightees.

Q58. Managing of the use of healthcare coding and classification systems

- The market did selfregulate himself at the start… resulting in several systems in use.
- Labelling of the EHR applications for GP's has proven to be an important incentive for the use of terminologies and linked coding schemes;
- The Belgian Health Telematics Commission will finally be responsible for the selection of the coding and classification systems in use in the country.

3.3.3 Interoperability of Electronic Patient Records & Electronic Health Records

Q59. Available common EPR architecture

No, there is no formal common architecture, considering the huge differences between the EPR of e.g. a GP, a dentist, an ophtamologist or a nurse. The labelling process, defining first basic then more sophisticated criteria, resulted nevertheless toward an increasing convergence of the applications.

Q60. Available common structure for EPRs

No. Same arguments as for Q59. It would be useful to illustrate the difference between the architecture and the structure of an EPR.

Q61. Interoperability standards which are established and in use for EPR

Yes. There are several criteria on interoperability, addressing the export of a summary of an EPR as well as the complete export of an individual patient record or even the export to a standard relational database of the complete content of an application's data.

Q62. Available common lifelong EHR architecture

Cfr. Q59

Q63. Available common structure for lifelong EHRs

Cfr. Q60

Q64. Interoperability standards which are established and in use for EHRs

Cfr. Q61

3.3.4 Accreditation procedures

Q65. Conformity testing or accreditation scheme for eHealth systems and applications

Yes.

The objective of the testing is to reach a PARTIAL NORMALISATION that will guarantee at least:

- The respect of legal and ethical imperatives such as:
  - Immediate data integrity
  - Long term data availability
  - Legal conformance / validity
  - Data confidentiality
- An increased efficacy of the healthcare system based on administrative support and simplification.
- An access to reference and validated documents, databases or support for decision-making tools.
- A communication capacity, through the promotion and verification of the implementation of interoperability criteria and standardised data exchange, more specifically import-export of data part of the Summarised Electronic Health Record.

One should be aware that GLOBAL NORMALISATION of those tools (including an advanced structuration of patients files) is NOT an objective in itself. One could see a global normalisation as a major obstacle to the development of creative, diversified and adapted solutions in response to local and/or professional and/or individual needs of the users.

References: Q48.

Q66. Time period of the scheme and management

Starting to define the rules in 1998, first accreditation in 2000. The accreditation is organised by the Ministry of Health.

References: Q48.

Q67 Plans for the introduction of such a scheme

N/A

4 eHealth research and technology development (RTD) status

4.1 General information on RTD structure

Q68. Main actors in RTD policy setting in the country

Ministry of Health (National)

INAMI/RIZIV

FNRS-FWO (National)

IWT (Regional - Flanders)

VIWat (Regional - Flanders)

IBBT

KUL Research

Solvay Institute

Q69. Main groups directly involved/undertaking RTD activities

Universities (RUG, KUL, UIA, VUB for Flanders) (Univ.Liège, ULB, UCL for French Community).

Scientific societies for the different healtcare professions (SSMG and Domus Medica for GP's, VVT and for dentists, ….)

Specialised research institutes.

Applied research in the industry.

Q70. Main focus areas and targets of RTD activities

- EHR, patient data availability and interoperability
- Cost efficiency through evidence based protocols and integrated decision support
- Mobile EHR applications
- Patient empowerment and home care monitoring
- Second opinion and tele-consultation services
- ePrescription and related services
- eLearning in healthcare, as well pre- as postgraduate
- authentication and confidentiality management
- standardisation and structuring of medical content

4.2 Research Programmes

Q71. Areas in which major research programmes are underway

- IDT applications.
- Telemedicine.
- Health informatics/eHealth.
- Bioinformatics.
- Genomics, proteomics.
- GRIDs.
- Nanotechnologies.
- Microdevices.
- New materials (including bio materials).
- Other area(s) which you feel are relevant for eHealth RTD.

Other: natural language interpretation

Q72. Information of the major currently running research programmes in each area

Current progress status of the programme: in preparation.

4.3 RTD Funding - National

Q73. Major funding sources and agencies

(NA)

Q74. Annual funding for eHealth related activities

(NA)

4.4 Technology transfer & Innovation Support

Q75. Initiatives to promote and support technology transfer in the area of eHealth

- The Agoria eHealth platform seems actually to be the most important private initiative for technlogy transfer. It's a joint initiative of Agoria, the Belgian Federation of Technology Industry and the Ministry of Science Policy. They organise so called "ideation days", specific workshops and events, e.g. the eHealth conference "Be ready

to engage in eHealth", (in cooperation with a specialised company), hold this year on October 19th.

- The annual Telematics@health conference organised by the Ministry of Health as part of the BeHeath initiative. Will be hold on december 7th and 8th 2006.
- Most (all?) organisations funding RTD have a department specialised in Technology transfer and more especially in monitoring international initiatives and research programmes. Main purpose: involve as much as possible Belgian or Regional research institutes and industrial partners in international research and innovation in eHealth.

References:

www.ehealthplatform.be

http://congresses.tmab.be/page/89/Intro_-_e-Health_Congress/

Q76. Available structures and mechanisms for eHealth-related technology transfer

There is, to our knowledge, no specific structure, other than the ones discussed in Q75, specialised in e-Health related techology transfer.

4.5 Industry Strategies and Programmes

Q77. Forms of support actions which have been employed to promote eHealth-related innovation

- Conferences.
- Seminars.
- Studies – analyses.
- Working/expert groups.
- Information and communication activities.

Q78. Types of structures and mechanisms to promote and support eHealth-oriented innovation

Particular attentions is given to eHeath-oriented innovation in each agreement between the national and regional authorities on one hand and healthcare providers on one hand. This result in:

- an important set of indirect measures and financial incentives to introduce innovation, as listed in Q23.
- an annual upgrade of the criteria to be compliant with when labelling the EHR systems for GP's, physiotherapists, home care nurses and dentists.

Involved parties in this promotion and support are the National and the Regional Ministries of Health, the national Social Security (INAMI/RIZIV), Ministry of Science Policy, the hospitals and hospital federations and also the specialised eHealth industry.

4.6 Industry Strategies and Programmes

Q79. National-ownership companies which are active in the area of eHealth and related RTD

Company name: There are several national as well as Belgian branches of international companies involved in eHealth and related research. Most of them, the most important of them, are member of Agoria eHealth platform. Reference to the list of members is given.

References:

www.ehealthplatform.be and select "members".

Q80. Companies of international ownership which are active in the area of eHealth and related RTD

International Company Profile: Company Name: There is no difference between a nationally owned and an internationally owned company.