Planning a new hospital – Identification requirements inside the Vienna North Hospital

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Vienna Hospital Association
The Vienna Hospital Association (VHA) is one of Europe‘s largest healthcare organisations and Austria‘s largest training facility for professional healthcare.
VHA at a Glance (2008)

- 12 hospitals
- 12 nursing centers
- 30,753 employees
- 8,939 beds in hospitals
- 4,034 beds in nursing (geriatric) centers
- ~400,000 inpatient admittances
- ~3,5 mill. outpatient visits
VHA at a Glance (2008)

- annual budget € 3,12 bill.
- personnel expenses (excl. pensions) € 1,30 bill.
- net costs of materials € 822 mill.
- net capital investments € 195 mill.
Vienna North Hospital (VNH)
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1. Krankenanstalt Rudolfstiftung
2. SMZ Sophiaspital
3. AKH - Universitätskliniken
4. Gottfried von Preyer'sches Kinderspital
5. SMZ Süd – Kaiser-Franz-Josef Spital
6. Krankenhaus Hietzing
7. mit Neurologischem Zentrum Rosenhügel
8. SMZ Baumgartner Höhe (=Otto-Wagner-Spital mit Pflegezentrum)
9. Kaiserin–Elisabeth Spital
10. Wilhelminenspital
11. Orthopädisches Krankenhaus Gersthof
12. Semmelweis Frauenklinik
13. SMZ Floridsdorf
14. SMZ Ost – Donaupital
Medical Services at VNH

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<tr>
<th>anaesthesiology</th>
<th>laboratory diagnostics</th>
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<td>emergency unit</td>
<td>pathology, bacteriology</td>
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<td>surgery</td>
<td>physiotherapy and rehabilitation</td>
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<td>trauma, accident surgery</td>
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Milestones

• search for a project partner mid 2006 – Feb. 2008
  ✓ PORR Solutions
  ✓ SIEMENS
  ✓ VAMED

• preplanning phase mid 2007 – March 2008

• architecture competition April 2008 – Dec. 2008
  ✓ health team albert wimmer ZT-GmbH
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Facts & figures

- ~ 850 beds
- ~ 120,000 sqm building ground
- ~ 150,000 sqm gfa (~ 5000 rooms)
- ~ 2,500 employees

- ~ 40,000 inpatients per year
- ~ 250,000 outpatients per year
- ~ 16,000 surgeries
Project schedule

- start of the schematic design phase: March 2009
- ground-breaking ceremony: beginning 2010
- opening: 2014/2015
Identification requirements
Typical - „traditional“ – usage (1)

• since late 1980s a VHA-wide Hospital Information System has been supporting a wide range of medical and administrative processes

• Important IDs have been printed as barcode (Code39) on forms or labels
  ✓ to accelerate the data entry
  ✓ to avoid errors

• ID of the electronic health record EHR (in-/out-patients)
  ✓ organising the ADT-processes and outbound patients (patient ID or case number)
  ✓ ambulance-ID-cards

• ID of special documents of the EHR
  ✓ e.g. organising the order-entry process of laboratories or identifying the clinical, histological, pathological results
  ✓ usage of labels posted on the specimen or the samples
Typical - „traditional“ - usage (2)

• other requirements for patient identification
  ✓ for admittance into the surgery unit
  ✓ identification wrist band

• Support of the data entry of diagnostic/disease/therapy codes (e.g. ICD-10)

• Besides the patient care context
  ✓ Support of drawing up an inventory by posted barcode labels on every equipment.
Current requirements

• Disorientated, demented patients
  ✓ alarming systems (in case of leaving the ward or the hospital)

• ID Card(s) for staff members
  ✓ e-cash
  ✓ key (doors, locker)
  ✓ access to special services (e.g. library)
  ✓ parking area
  ✓ cafeteria

• Advanced support for facility management services
  ✓ Room-ID, technical equipment
  ✓ checkpoints (security tours, cleaning)

• Traceability of automated transport systems
Future requirements

- Traceability of garment
  -> reduced inventory, logistics cost
- Traceability of surgical instruments
  -> improving quality
- Personalized identification of medication
  -> improving quality
- Searching/finding/locating medical devices
  -> supporting device pools
- Calling the nearest located stretcher-bearer
  -> improve efficiency
Challenges for Vienna North Hospital

• Sum of „traditional“ + „current“ + (some of) „future“
  ✓ maximising patient safety
  ✓ decreasing administration costs
  ✓ providing high quality of all processes
  ✓ optimising efficiency of all services

• Optimising the support processes
  ✓ laundry
  ✓ medication
  ✓ sterilisation services
  ✓ facility management services
  ✓ management of the supply chain (storage, purchase orders, delivery)
  ✓ automated transportation systems
Some highlights of ID-supported services planned in the VNH project
Garment logistics

hand-out system for employees:
user identification
selection of the garment
(RFID-tagged) garment is presented automatically to the person on a hanger
personal credit is reduced

returning points:
putting the garment into a container
personal credit is increased
Medication

Innovative supply chain for drugs:
- bed-side prescription with consultance of clinical pharmacists
- automated order entry
- manufacturing/packaging at the pharmacy
- delivery in unit dose packages
- bed-side documentation of the medication

Primary objectives:
Enhance the patient safety and the efficiency of the drug supply
**Sterile Services**

- 15 OP-rooms, 16,000 surgeries per year
- Surgical instruments: 50,000 sterile good units per year
- Sterilisation Service Unit at Donauspital, will provide the services for VNH

- Traceability of all instruments throughout the complete cleaning, sterilisation and supply cycle
- Individual identification of all instruments (instrument marking)

- High quality of services due to the medical products act and other guidelines:
  - e.g. Prion diseases (e.g. Creutzfeldt Jakob Disease-CJD) requires specific deactivation process
- Validation of the complete sterilisation process
Critical factors of success

• Management of the increased dependency of the quality of the patient care processes on automated supply processes
  ✓ special attention to risk management
  ✓ high reliability and fail-safety of all technical systems
  ✓ availability of back up solutions

• Tolerable costs and ease of handling for marking, tagging and administering of individualized items

• Very good support of coding systems and standards by all relevant IT-solutions in health care, specially ease of integration in the IT-infrastructure of the hospitals‘

• Long term availability of standardised solutions for protection of investment.
Thank you for your attention!