Electronic Patient Records in Dental Education and Research
10 years experience at the Institute of Clinical Dentistry

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Patients:
55,000 appointments / year

Students:
66 dental hygienists (3 yrs. Bachelor)
340 undergraduates (5 yrs. Master)
52 specialist candidates (3 yrs.)
42 PhD students

Staff:
65 full-time faculty
120 part-time faculty
10 affiliate (volunteer) faculty
450 total staff

- 8 faculties and 3 museums
- 7,000 employees
- 27,000 students
Research areas

• *Biomaterials*
• Health promotion and preventive procedures.
• Craniofacial development, diagnosis and treatment.
• Surface biology and *biofilm*
• Tissue regeneration
Dental School computer systems have evolved gradually supporting more types of user

1. Administrators
2. Clinicians
3. Educators
4. Researchers
Our history of electronic systems

• The faculty started using an electronic patient administrative system SALUD in 2001
• Tracking all student activity
• Tracking all patient information
• All clinics were equipped with chair side terminals by 2004
• EDR implemented autumn 2005
My point of view as a *User*

- As a former Director of the Institute
  - 50 000 patient visits a year
  - Administration
  - Financial Performance
  - Legal and Regulatory
  - Reputation
- As a professor in oral surgery and oral medicine
  - Research
  - Collaboration with other Universities
  - Teaching
- As a clinician
As a “Director of the Institute” user

- The EDR is a *Steering* tool
  - Quality control
  - Financial Administration
  - Student management
  - Patient flow
  - Routine control
  - Signatures EDR and PN
  - Total activity reports

Big Brother is watching you??
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Report Filters:
- Date Range: 10.05.2014 to 17.06.2014
- Tx Category: ...
- Day Of Week: All
- Session: All
- Display: All stages
- Patient Age: >= [ ] <= 17.06.2014
Financial Performance

2004 Annual Income: Kr 16m
2007 Annual Income: Kr 35m
(Same number of patient visits)
As a “professor/teacher/researcher” user

- Results of treatments
- Alternative diagnoses
- Treatment failures
- Research potential?
As a “clinician” user

- Easy access to patient notes in the EDR
- Review treatments performed by other departments
- Integrated radiology
- Easy operative report to colleagues
- Communication with other databases via “Health Net”
  - Social security
  - Laboratories
  - Hospitals, GPs
What are Researchers’ requirements?

- Discover research already done in this area and by whom
- Discover any existing relevant datasets that could be accessed
- Develop requests to gain approvals and funding for a project
- Discover and recruit suitable collaborators
- Develop questionnaires
- Find and recruit the right patient cohorts
- Extract relevant historical data from the EDR
- Deploy questionnaires to practitioners
- Manage the collection of data
- Share data and analysis with collaborators
- Get peer-reviewed and published!
As a “Director of the Institute” user

The EDR is a *Steering* tool
- Financial Administration
- Student progress management
- Patient flow
- Routine control
- Signatures EDR and PN
- Total activity reports
- Supervise and oversee research projects?

Big brother is watching you ????
Five Founding Universities
UHN System Development
So what exactly does the UHN system do for researchers?

- Discover research already done in this area and by whom?
- Discover any existing relevant datasets that could be accessed?
- Develop requests to gain approvals and funding for a project?
- Discover and recruit suitable collaborators?
- Develop questionnaires?
- Find and recruit the right patient cohorts?
- Extract relevant historical data from the EDR?
- Deploy questionnaires to practitioners?
- Manage the collection of data?
- Share data and analysis with collaborators?
- Get peer-reviewed and published?
So what exactly does the UHNN system do for researchers?

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So what exactly does the UHN system do for researchers?

- Develop requests to gain approvals and funding for a project?
So what exactly does the UHN system do for researchers?

- Develop questionnaires?
So what exactly does the UHN system do for researchers?

- Find and recruit the right patient cohorts?
- Extract relevant historical data from the EDR?
So what exactly does the UHN system do for researchers?

- Deploy questionnaires to practitioners?
- Manage the collection of data?
So what exactly does the UHN system do for researchers?

- Share data and analysis with collaborators?
So what exactly does the UHN system do for researchers?

- Get peer-reviewed and published?
So what exactly does the UHN system do for the ‘Dean-User’?
Summary of the UHN System
The Challenges in 2005

- Cultural obstacles among the scientific staff and the dental teachers
- Fear of clash between the flow of patients and altered routines as a consequence of EDR
- Relevant training for staff with differing EDR impact
- Information strategy
Organization Chart

Chairman of the Institute

EDR GROUP
Manager of the project
Clin. developmt & operation
Techn. developmt. & operation

USER SUPPORT GROUP
- biweekly meetings
- Training the stud.

Manager of DEPT. OF
ORTHODONTICS

CARIOLOGY
PROSTODONTICS
SURGERY
PEDODONTICS
PERIODONTICS
ENDODONTICS
RADIOLOGY

ECONOMY MANAGEMENT
Training

• Training of clinical and academic staff.
  – Communicate the message "We will start using the EDR from this date" with authority from top management. Otherwise you’ll soon find yourself defending instead of educating. Very important to receive backing from management.
  – Doing a pilot can help in determining big changes needed to processes, but it’s not conclusive.
  – Do not underestimate the need for training. Remember to include everyone in your organization even if you don’t see them as users of the EDR. All will be effected in one way or the other.
EDR as a possible tool in networking

• Similar data collection
  – Students and staff familiar with one system
• Similar diagnosis - possibilities
  – ICD 10 – ICD-DA3
• Student reports from exchange program
• Data exchange
• Research collaboration?
What have we learned over ten years?

- Clinical leadership and commitment by all staff is critical
- If it’s regarded as an IT project it will fail
- If it’s regarded as an administrative project it will fail
- An EDR system can more than pay for itself
- An EDR system and an electronic research system results in higher-quality dental education
The End