

SIEMENS

EHTEL
EUROPEAN HEALTH TELEMATICS ASSOCIATION

Information and Communication Technology in Healthcare:

What is needed to increase healthcare efficiency?

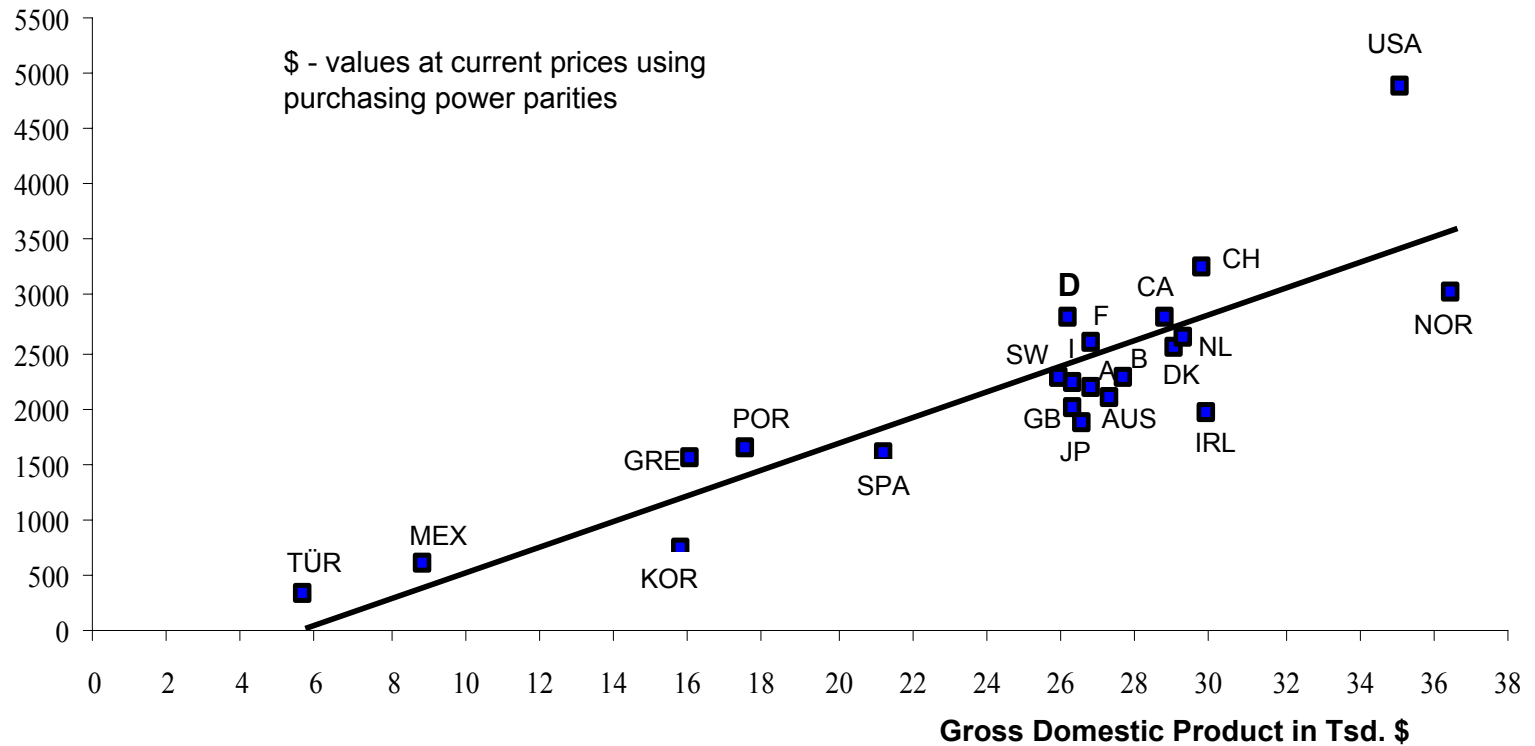
Dr. Karl-Jürgen Schmitt

**Vice-President of the European Health Telematic Association
and Siemens Medical Solutions**

13. December 2004

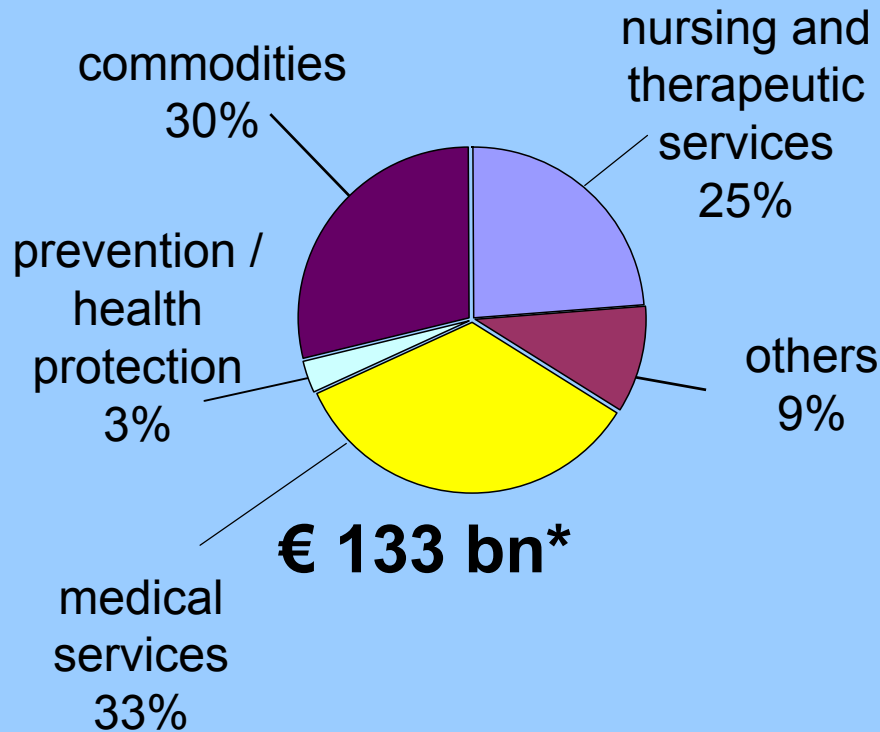
Health Expenditure vs. GDP for Various Countries, 2001

Health expenditure per capita
in US \$



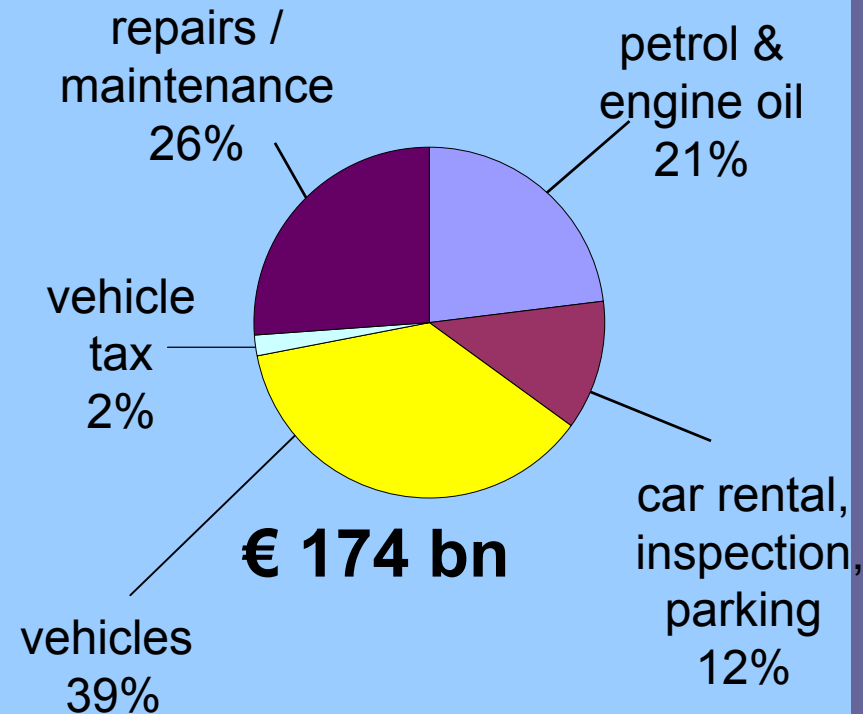
Expenditures: Healthcare vs. Cars (Germany)

Expenditures of Compulsory Health Insurance



* incl. employers' share: € 66,5 bn

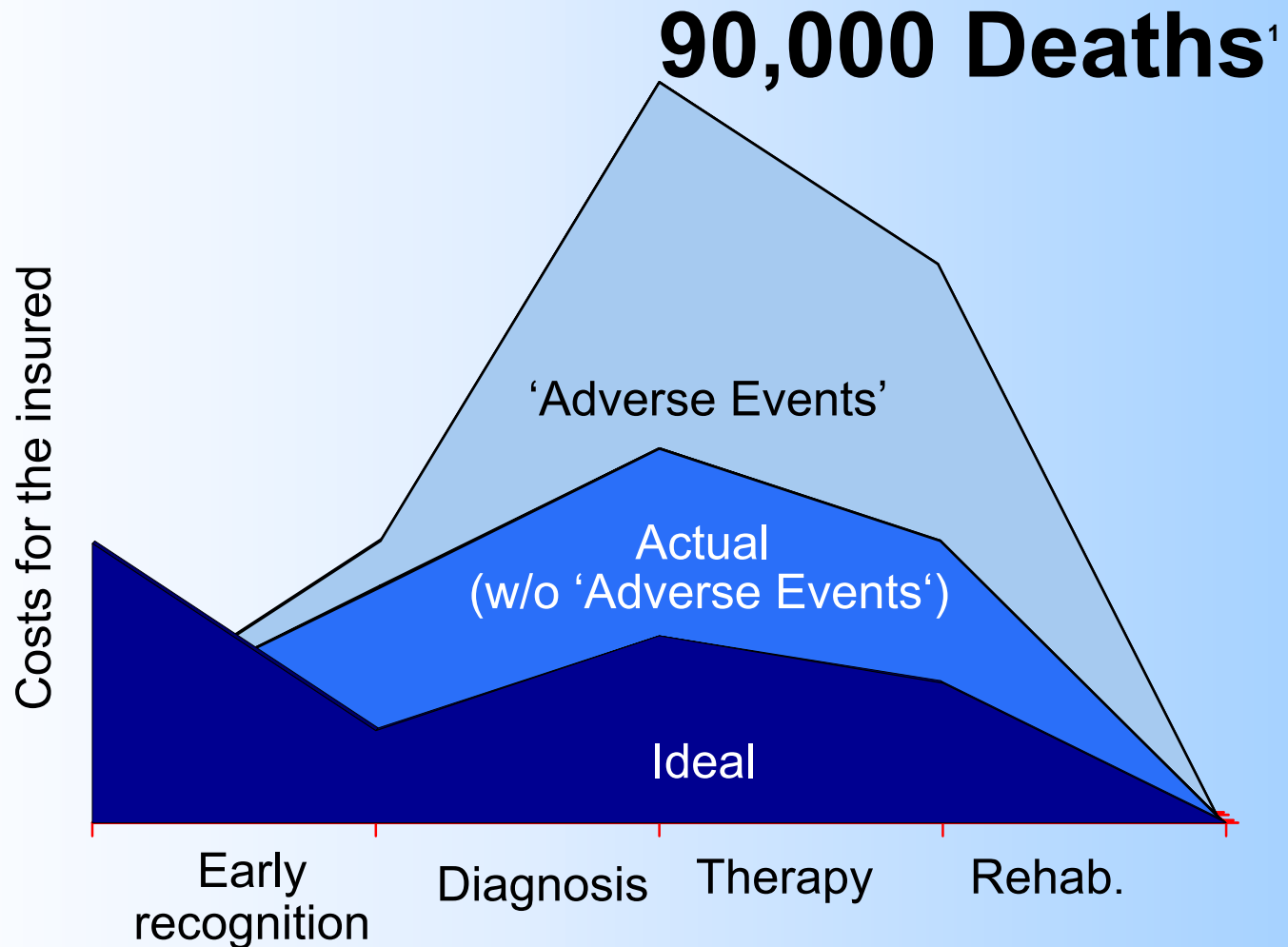
Expenditures for Cars



Main levers to improve quality of care

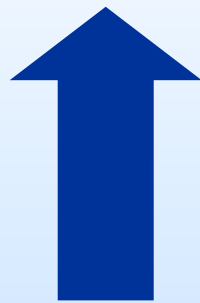
- **Reduce medical and medication errors**
- **Improve the care of chronic patients, integration and participation of patients into care processes**
- **Improve health education and promote prevention**
- **Give incentives to people for staying healthy**
- **Reward healthcare providers for sustainable health of their clients**

Significant potential to improve the quality of the healthcare system



¹Source: Institute of Medicine, To Err is Human, 1999, p.26. American Hospital Association. Hospital Statistics. Chicago. 1999

Efficiency improvement



**Quality
of Care**



Cost

- By:
- Innovation
 - Process optimisation



Improving workflow with the patient in focus

**Sick,
injured**

**Healed,
fit for work**



Examination



Rehabilitation

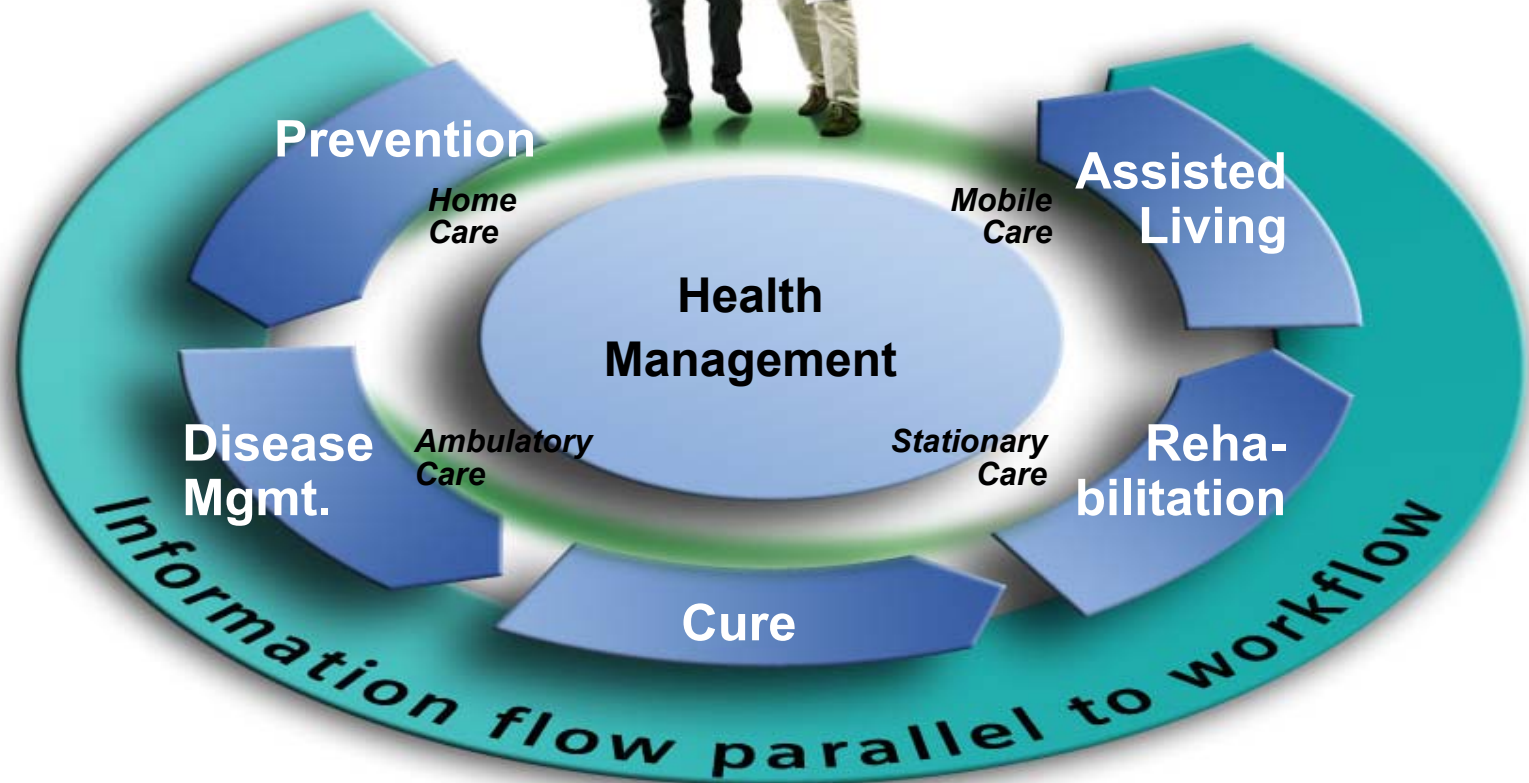
Therapy

Diagnosis

**Patient Information
Medical Knowledge**

Efficiency improvements require workflow optimization throughout the entire system

Healthcare system



IHE – Integrating the Healthcare Enterprise

The most advanced approach of using existing standards to achieve interoperability in close cooperation with the user

IHE is well supported by industry

- 76 Participating Vendors
- 293 System components have been tested

IHE is well established internationally

- ... by professional societies: RSNA, HIMSS, EAR, ECR, ESC, ACC, DRG, SFR, GMSIH, SIRM, BIR, ...
 - ... by industrial associations: NEMA, COCIR, JIRA, ZVEI, ...
- 10 national/regional affiliates founded**
5 more expected in 2006

Projekt t@lkingeyes

Vascular Health Management:

- **Goal:** Identification of Citizens at Vascular Risk and Enrolment to Health Management Programs
- **Method:** Quick and painless Photography of the Eye Fundus, quantitative and qualitative Analysis of the small Vessels of the „Eye Fundus as a Mirror of the Vascular System“
- **Process:** Examination by mobile Screening Units e.g. at large Employers, centralized Grading, Quality Management and Administration
- **Participants:**
 - 2002/02: ca. 8.000 in Erlangen, Sponsoring State of Bavaria
 - 2003/04: planned 25-30.000 in 5-6 Cities/Regions; SBK funded
- **IT: MedStage**
 - Patient-Portal incl. Registration, Appointment Booking and Retrieval of Results
 - Workflow Management (Worklists etc.)
 - Secure Data Transmission fro mobile Screening Units to centralized Grading
 - Quality-Management



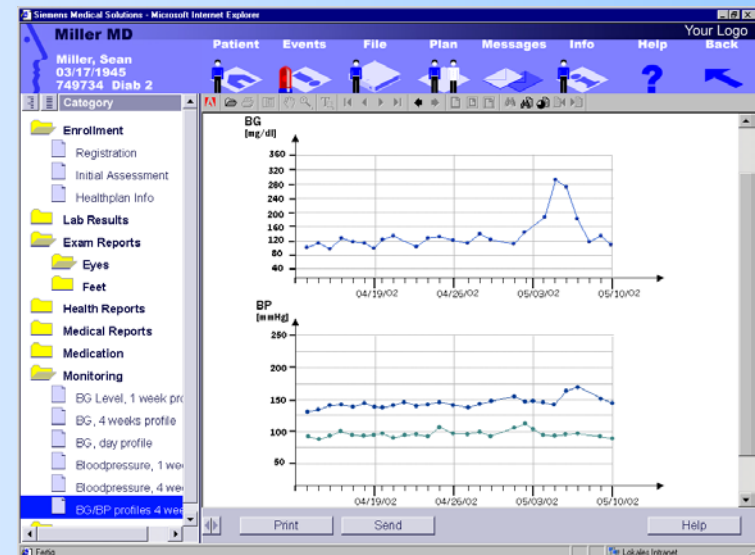
Project DIADEM

Diabetes Disease Management

EU sponsored international Business Development Project

Consortium: Siemens, AOK Bundesverband und AOK Rheinland, DCM Munich, DRU Cardiff, ...

- **Goal:** Management Diabetes Typ II
- **Method:** Integrated Quality-Management Network of Patients, GP'S and clinical Competence Centers, Guidelines, Call-Center, Patientmonitoring
- **Participants:** Pilots in Wales and Aachen with ca. 400 Patients
- **IT: MedStage**
 - Patient Health Record
 - Process Workflow Management
 - Standardized online `Documentation and Evaluation
 - Patient Monitoring (blood glucose, blood pressure, ..)



Homework for sustainable use of IT in healthcare

- Enable new business opportunities and define business models for healthcare professionals (**business**)
- Set incentives to ensure measurable quality and conformity with guidelines (**quality**)
- Reduce administrative work (documentation only once) (**administration**)
- Optimize the billing process (**billing**)
- Continue treatment at the point where the antecessor ended (**information**)
- Collect reliable data to improve care process continuously (**statistics**)

Reality

Politicians:

Know about the problem and potential solutions, however the transformation process is very slow

Health Insurance:

Focus on selecting the best risks rather than rewarding quality

Healthcare providers:

No incentives aligned to measurable quality and process oriented care

Citizens, Patients:

Lack of information, therefore unable to judge quality of care

Industry:

Technology driven

The President's Address to the Nation (04/26/2004)

“The 21st century health care system is using a 19th century paperwork system. Doctors use paper files to keep tracks of their patients. Pharmacists have to figure out the handwriting of a doctor. Vital medical information is scattered in many places. X-rays get misplaced. Problems with drug interaction are not systematically checked. See, these old methods of keeping records are real threats to patients and their safety and are incredibly costly. Modern technology hasn't caught up with a major aspect of health care and we've got to change that. We've got to change it ... Within ten years, every American must have a personal electronic medical record. That's a good goal for the country to achieve.”

EU Action Plan on eHealth

- **2005: Each Member State is to develop a roadmap for eHealth (deploying eHealth systems, interoperability, EHR, reimbursement)**
- **2006: Common approach to patient identifiers, identification of interoperability standards, boosting investments**
- **2007: Conformity testing and accreditation schemes**
- **2008: Teleconsulting, ePrescription, eTransferral, Telemonitoring and Telecare, broad band, wireless and mobile applications, Grid-Technology**
- **2009: Standardized quality of services**

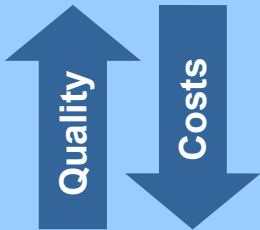


Do not lose momentum!

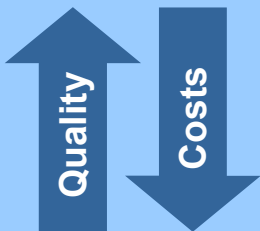
Actions

- **Embrace and commit to IT in healthcare**
- **Reduce regulations with the goal of an open and transparent competitive healthcare market**
- **Achieve a reasonable balance between data privacy regulations and efficient data exchange**
- **Create a legal environment for trans-European healthcare delivery**
- **Use proven international technical industry standards**
- **Establish European benchmarks / best practise sharing**
- **Link provider performance to payment:
no outcome, no income**
- **Include healthcare into European infrastructure funds**

Proven Outcomes: Healthcare IT



- Reduction of post-procedural report turnaround time from up to 48 hours to 15 minutes with Soarian



- Decrease in erroneous and unclear prescription by 73% via IT-supported medication process



Stockholm, Sweden



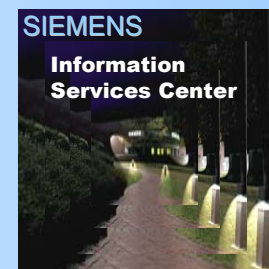
- Same number of patient exams in 2 ¼ hours less per day at the same quality with syngo




Wuppertal, Germany



- Substantial scale effects and significant reduction of investment in healthcare IT through ASP (Application Service Providing; central data center on a „pay per use“ basis)



A high-angle photograph of a sailboat heeling significantly to the left in rough, dark blue seas. The boat is white with a dark hull, and its mast and rigging are visible. The water is turbulent, with white foam from the boat's wake and spray from the waves. The sky is a pale, overcast blue. The overall mood is one of intense action and challenge.

***Healthcare, the most
important issue of an
economy ...***

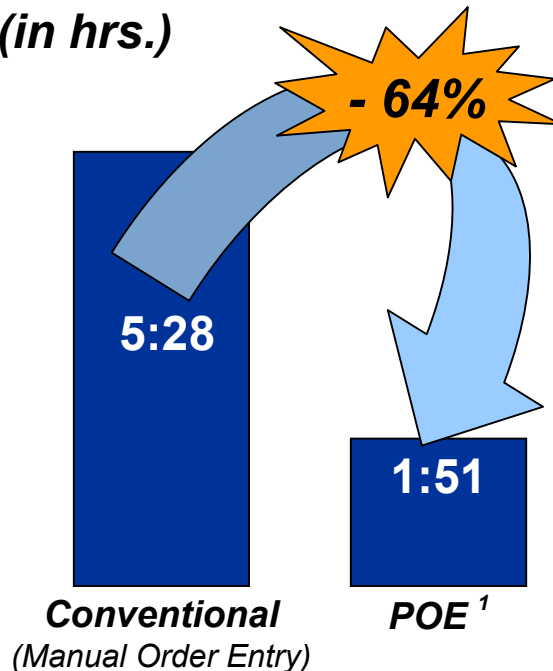
...a fascinating field!

Proven outcomes: eHealth yields medication process improvements and increases patient safety

**Ohio State University
Health System
USA**



**Medication Turnaround Time
(in hrs.)**

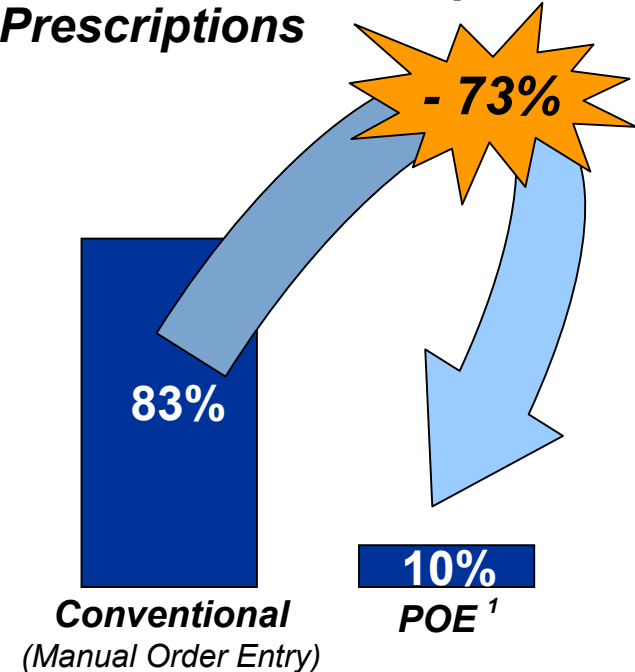


- **More timely patient care**
- **Enhanced efficiency**

**Soedersjukhuset
Sweden**



**Erroneous or Incomplete
Prescriptions**



- **Higher patient safety**
- **Increased nurse satisfaction**

¹ POE (Physician Order Entry): Automated medication processing and administration system