



ICT as a Supporter for Patient Safety

INTERREG 4 A Project: Strengthening Patient Safety between Denmark and Germany





Presentation Outline

1. Presentation of the INTERREG 4 A project “Strengthening patient safety between Denmark and Germany”
2. Critical Incident Reporting System (CIRS)
3. IHI Global Trigger Tool
4. Knowledge Base
5. Conclusion



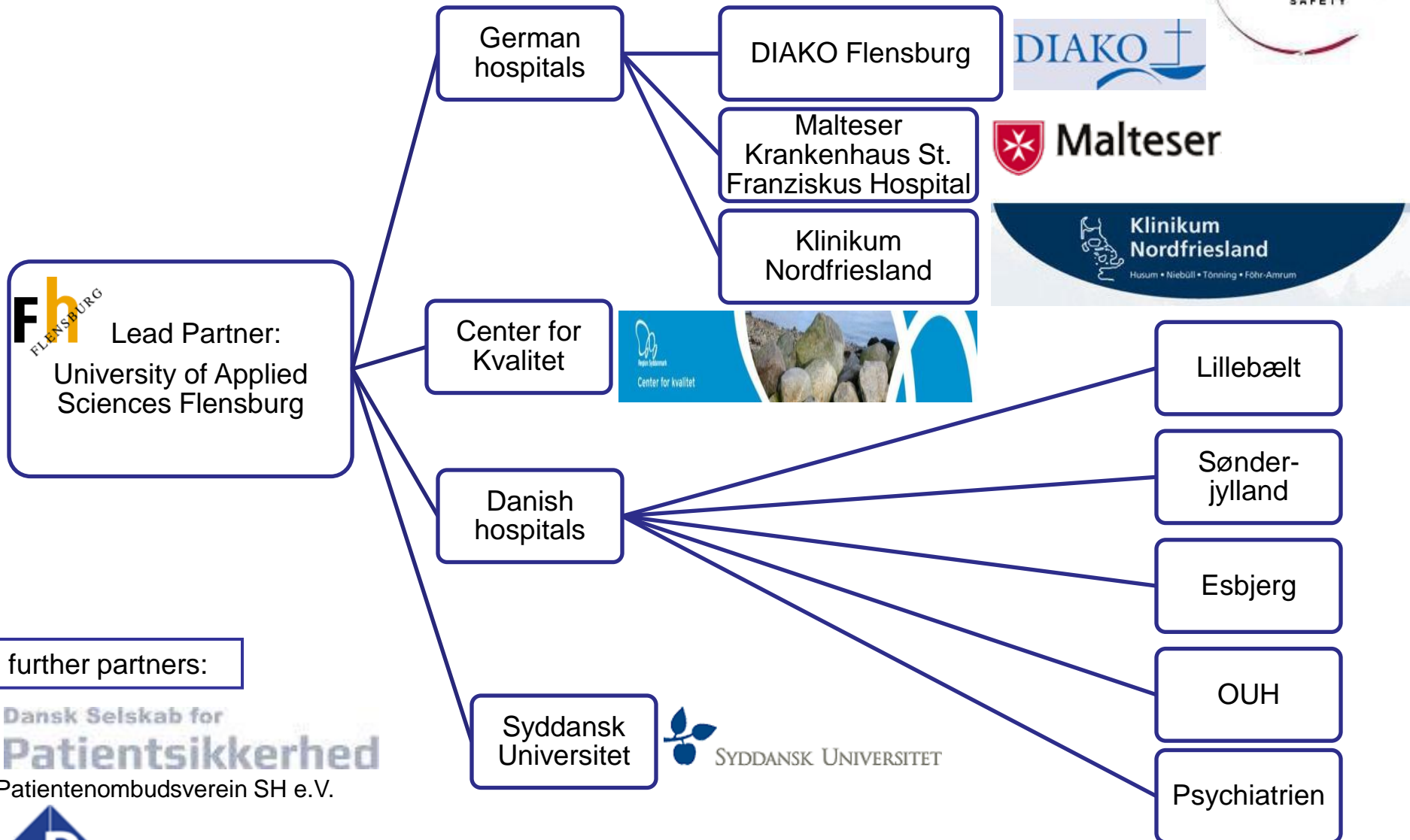


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Project Organization Interreg 4 A-Project



Fh FLENSBURG
Lead Partner:
 University of Applied Sciences Flensburg

further partners:

Dansk Selskab for
Patientsikkerhed
 Patientenombudsverein SH e.V.



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Status quo in Germany: no data consolidation



AOK
Institut
for
Medical
Errors

Patientenombudsverein

no central or stringent
database

mediation
body of the
medical
association

private
organizations

Aktionsbündnis
Patientensicherheit

special
law firms



Status quo in Germany: Deficits

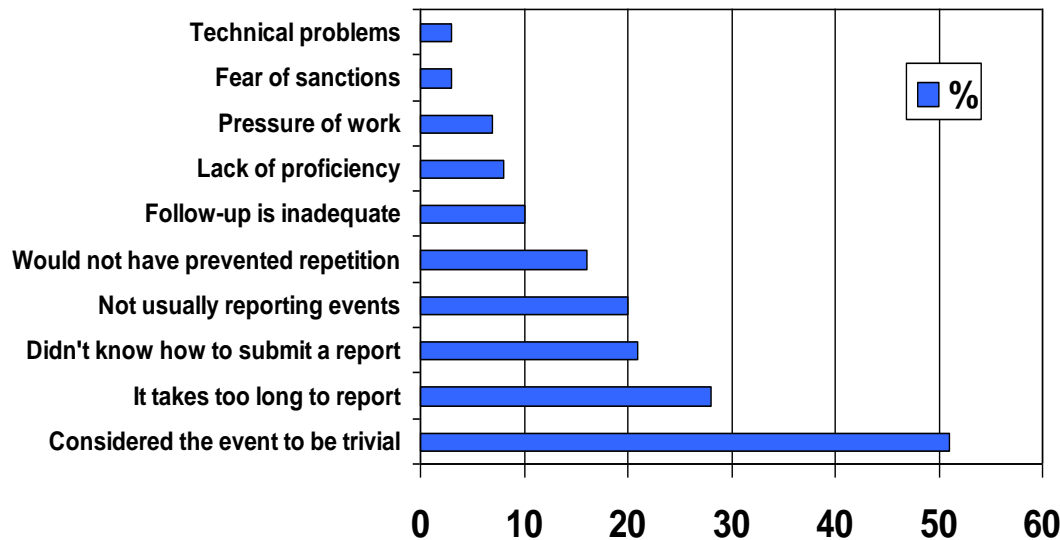
- no single point of contact for injured patients
- no single, centralized counseling for both parties
- no data consolidation
- Patients generally do not contact networks of health professions.
- commercial, state-funded institutions, and a vast number of private networks



Status quo in Denmark: national data base



- central national reporting system for patients and in the health sector employed people
- collection of adverse events and near misses
- statutory obligation to report for physicians and nurses
- optimize processes in terms of quality

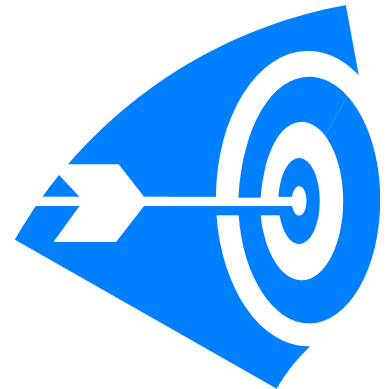


reasons for non-reported adverse events



Objectives of the Project

- comparison between Denmark and Germany in terms of patient safety
- benchmarking of relevant parameters between the hospitals
- development of new strategies to improve patient safety
- measuring sustainable development and control facilities to ensure patient safety
- reduction of preventable adverse events (and costs!)
- increase the attractiveness of health facilities
- strengthening of bilateral exchanges on patient safety (communication platform)
- mutual understanding about the other system



Current Activities

- establishing a Critical Incident Reporting System (based on the Danish System) in the German project-hospitals
- transnational exchanges of experiences on the prevention of falls in hospitals
- introduction of Global Trigger Tool as an active measurement tool in patient safety in Germany and Denmark
- Cross border security audits in the hospitals to learn from each other
- create a common knowledge base for the mutual exchange of views on improving patient safety





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Critical Incident Reporting System (CIRS)



What is a critical incident?

- a near miss/potential event
- unexpected risk for the patient
- critical situation: „We barely made it!“

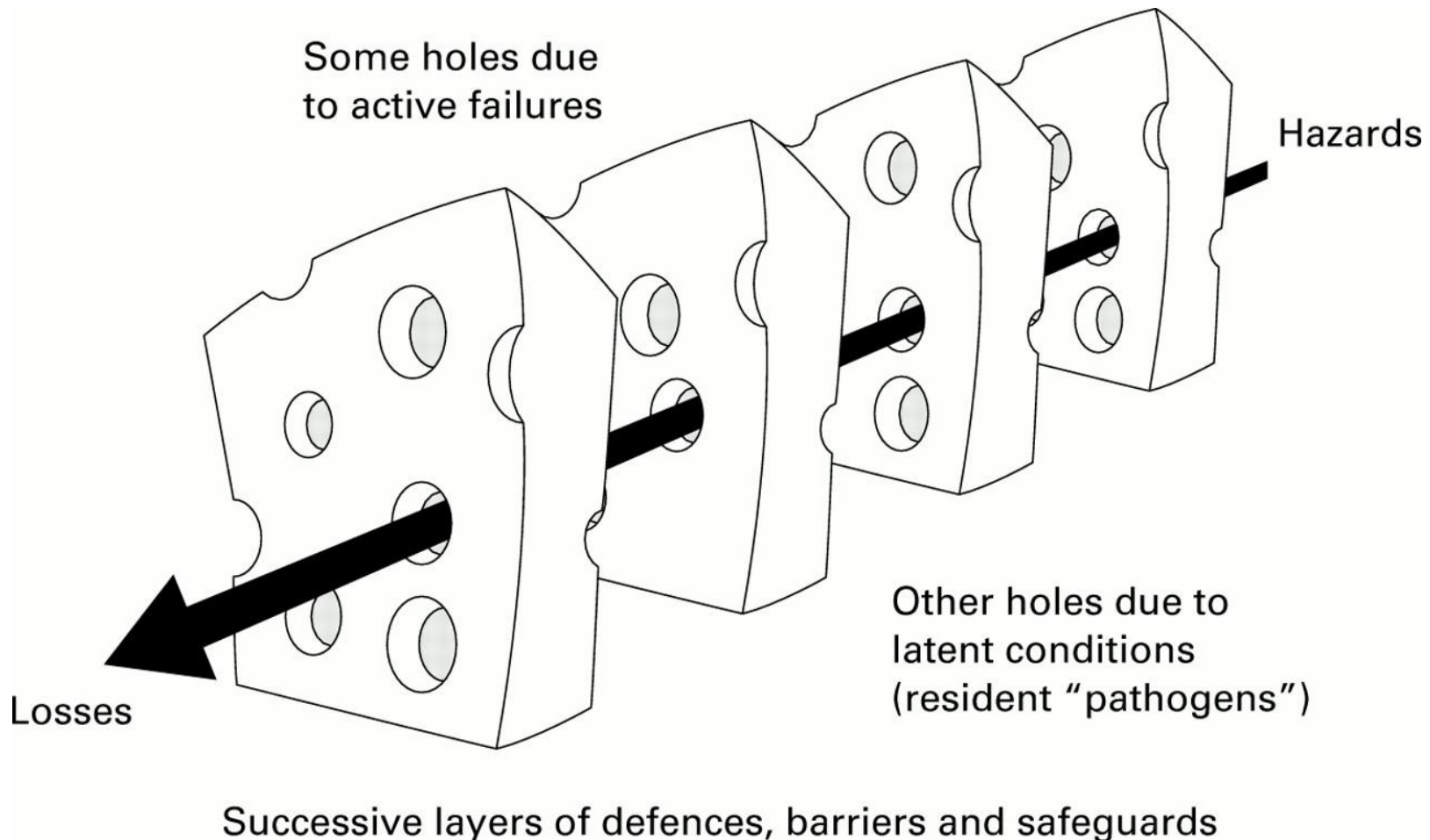


What is not a critical incident?

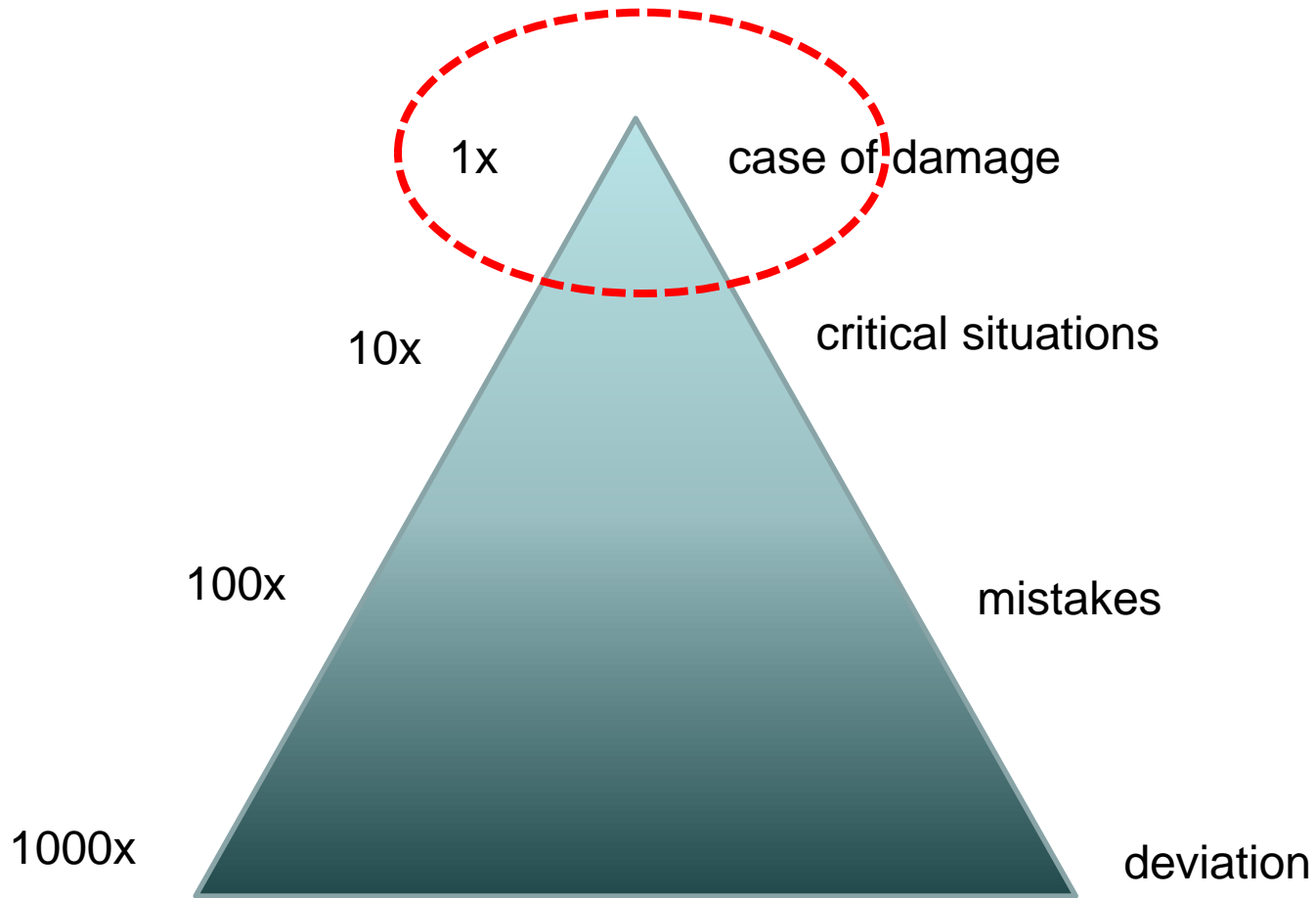
- liability case
- willful act
- denunciation
- situations, which lead to a financial disadvantage, but is not a risk for the patient
 - e.g. waste/mistakes in DRG-coding



The “Swiss cheese” model of accident causation by James Reason



Tip of the Iceberg



What is a CIRS?

- collection of incidents concerning near miss/potential events
- collection of incidents will help you find the weak points in your system
 - take appropriate action
 - eliminate the weak points
- There is a difference to malfunction message-systems!



General Principles of a CIRIS

- learning device for continuous use
- voluntariness
- no penalties, no blaming-culture
- data confidentiality, confidentiality of information
- anonymity
- autonomy
- simple reports
- clear definition of the contents of the reports
- analysis by experts
- feedback



How do incident-reporting systems succeed?



➤ Objective:

- make the knowledge of the employees of errors and possible improvements in the processes of the hospital available
- prevention of future near-misses and losses in the future

➤ Requirements:

- Feedback to the staff!
- CIRS as part of the risk / quality management
- Management Support
- Dealing with errors: Actions!
- Benefits must be clear: the importance of communication and simple input of information
- sufficient resources





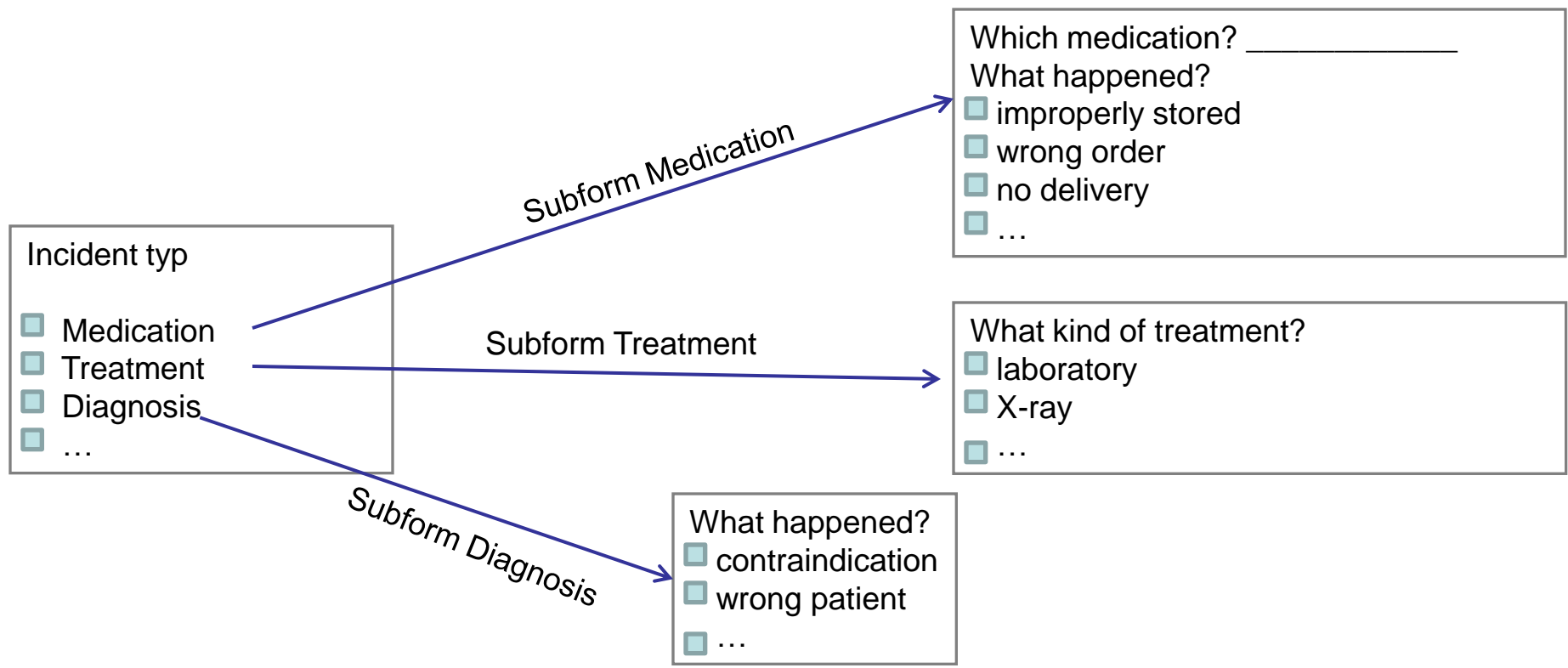
CIRS in our project

- implementation of a Critical Incident Reporting Systems by The Patient Safety Company / medilox in the participating German hospitals
- direct feedback to the reporter is possible
- data entry through branching
- causes and process analysis
 - Prevention Recovery Information System for Monitoring and Analysis (PRISMA): retrospective analysis
 - Systematic Incident Reconstruction and Evaluation (SIRE): retrospective analysis
 - Healthcare Failure Mode Effect Analysis (HFMEA): prospective analysis

- action management



Data Entry through Branching



Incident Management System



User: GreCom Application Development

 Search Incident

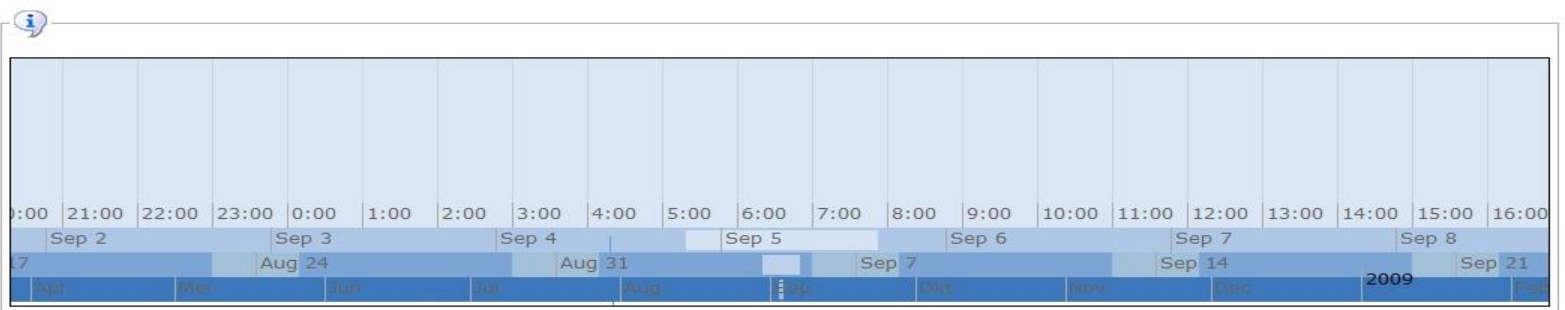
dinsdag 14 oktober 2008

File New Action Help

Note Incident

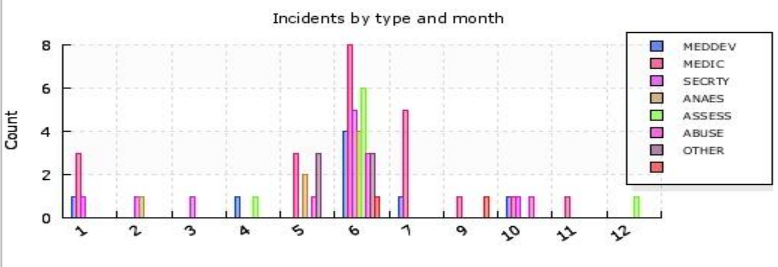
- Desktop
- Adverse Events & M
- List
- New
- Outstanding
- Archive
- Hidden
- Search
- Agenda
- Complaints
- OH&S
- Claims

Adverse Events & Near Misses



Filter: Benadrucken: Wissen

Reports



New incident

Date	Time	Person	Stage of care
20-06-2008	17:50	Y	Clinical assessment (investigations, images and lab tests)
23-06-2008	12:50	Y	Other - please specify in description
17-06-2008	12:40	Y	Abusive, violent, disruptive or self-harming behaviour
27-06-2008	12:10	Y	Abusive, violent, disruptive or self-harming behaviour
26-06-2008	12:00	Y	Clinical assessment (investigations, images and lab tests)
25-06-2008	11:00	N	Anaesthesia
26-06-2008	14:00	N	Clinical assessment (investigations, images and lab tests)
30-06-2008	11:10	Y	Anaesthesia
30-06-2008	11:20	N	Medical device/equipment
30-06-2008	11:20	Y	Clinical assessment (investigations, images and lab tests)

- Desktop
- Reports
- Analyses
- Improvement follow up
- Settings

Quality Improvement Module



File New Action Help User: GreCom Application Development

Note Incident

Improvement follow up

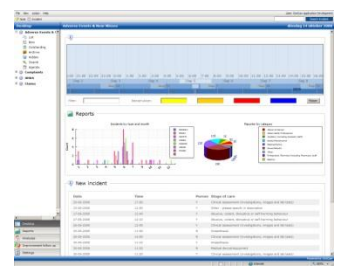
- Desktop
- Overview Indicators
- Parts**
 - Policy
 - Projects
 - Actions
 - Activities

Improvement layer	Start date	Measurements	Progress	Person responsible
Policy			Progress	
<ul style="list-style-type: none"> Reducing Risks at Our Most Vulnerable Time of the Day <ul style="list-style-type: none"> Indicator: Percent of patients using aspirin daily 	05/11/2007		0	Application Development
<ul style="list-style-type: none"> Reduce Hospital-Acquired Pressure Ulcers <ul style="list-style-type: none"> Decreasing frequency hospital visits Improving Hand Hygiene Practice with Six Sigm Improving patient informing Reducing Pressure Ulcer Rates in Nursing Homes 	05/11/2007		0	Application Development
<ul style="list-style-type: none"> Reducing Risks at Most Vulnerable Time of the Day <ul style="list-style-type: none"> Reduction in Ventilator-Associated Pneumonia Rate Reducing Positioning and Shielding Errors in Radiation Therap 	02/10/2007			Application Development
<ul style="list-style-type: none"> Hospital-wide Hand Hygiene Compliance Reduces Infection 	01/03/2007		47	
<ul style="list-style-type: none"> Reducing Skin Ulcers and Delays for Radiology Exams 	05/11/2007		0	Application Development

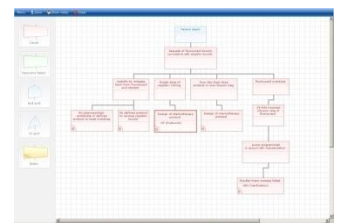
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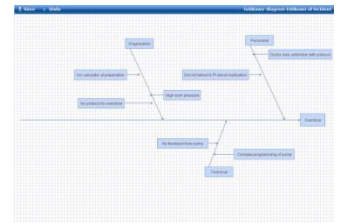
CIRS Beschwerden Umfragen



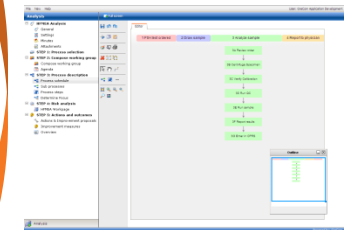
Incident Management System



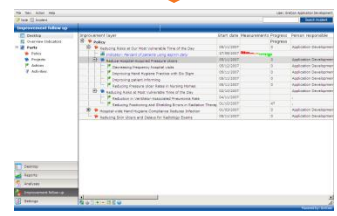
PRISMA



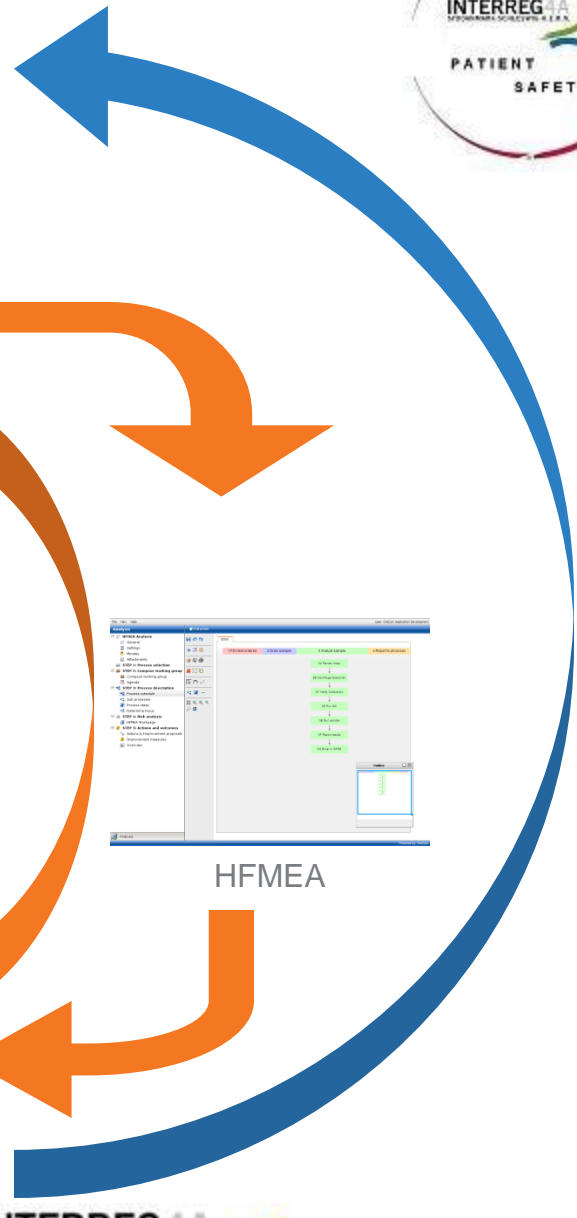
SIRE



HFMEA



Maßnahmenmanagement





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The IHI Global Trigger Tool

- tool for measuring the rate of adverse events over time
 - retrospective review of a random sample of patient records using triggers (or clues) to identify possible adverse events

- <http://www.ihl.org/IHI/Topics/PatientSafety/SafetyGeneral/Tools/TranslatedVersionsIHIGlobalTriggerTool.htm>

- six Modules:
 1. General Care (G1 bis G15)
 2. Medication (M1 bis M12)
 3. Surgery (K1 bis K16)
 4. Intensive Care (I1 bis I4)
 5. Perinatal (P1 bis P6)
 6. Emergency Unit (A1 bis A2)



Data collection sheet: hospital

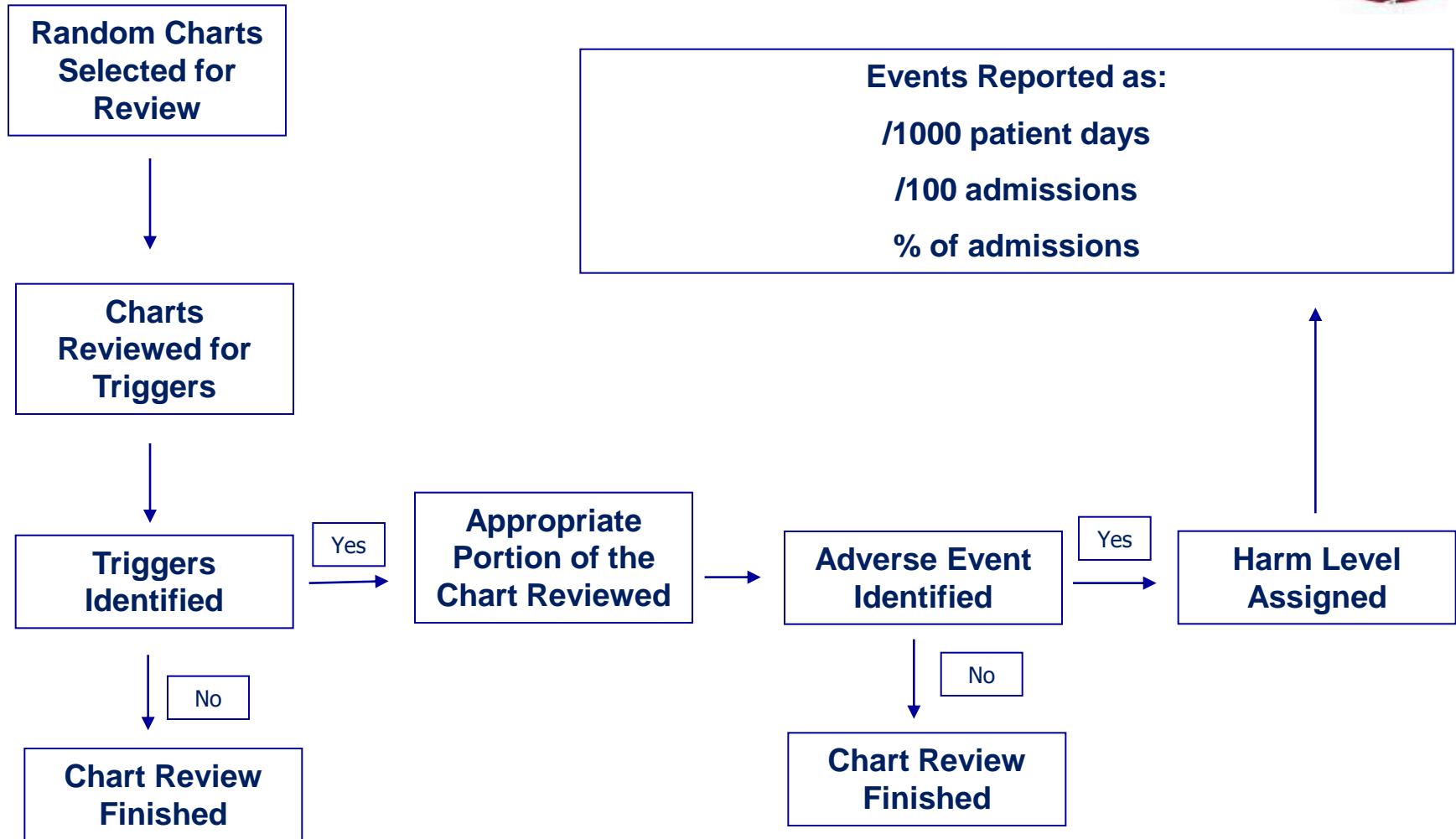
Arbeitsbogen, Global Trigger Tool

Modul	+	Beschreibung des Vorfalles und Klassifizierung des Schadens (E-I)	Modul	+	Beschreibung des Vorfalles und Klassifizierung des Schadens (E-I)
Trigger - Generelle Behandlung			Trigger - Chirurgie		
G1		Bluttransfusion oder Transfusion von Blutprodukten	K1		Erneute Operation
G2		Ruf des Herzalarm-Teams oder Herz- und Atemstillstand und starke Verschlechterung des Patienten	K2		Änderung des Eingriffes
G3		Akute Dialyse	K3		Verlegung auf die Intensivstation nach der Operation
G4		Positive Blutkulturen	K4		Intubation/Reintubation/BiPap/CPAP im Aufwachraum
G5		Röntgen- oder Ultraschalluntersuchungen bzgl. Embolie oder Phlebothrombose	K5		Röntgenuntersuchung während der Operation oder im Aufwachraum
G6		Plötzliches Fallen des Hb oder Hkt \geq 25%	K6		Tod während oder direkt nach der Operation
G7		Sturz des Patienten	K7		Postoperative Beatmung > 24 Stunden
G8		Dekubitus	K8		Intra-operative Gabe von Epinephrin, Norepinephrin, Naloxon oder Lanexat
G9		Wiederaufnahme innerhalb von 30 Tagen	K9		Post-operativer Anstieg des P-Troponin T-Niveaus > 0,1 mikrogramm/l
G10		Fixierung des Patienten	K10		Änderung der Form der Anästhesie während der Operation
G11		Im Krankenhaus erworbene Infektionen	K11		Überwachung durch einen anderen Spezialisten im Aufwachraum
G12		Schlaganfall im Krankenhaus	K12		"Falsch-pathologische" Befunde, die nicht in Verbindung mit der prä-operativen Diagnose stehen
G13		Verlegung auf ein anderes Pflege- oder Behandlungsniveau	K13		Anlegen eines Arterienkatheters oder eines ZVK während der Operation
G14		Komplikationen	K14		Operationszeit > 6 Stunden
G15		Sonstiges	K15		Entfernung, Schaden oder Reparatur von Schäden an Organen während der Operation
Trigger - Medikamente			K16		Post-operative Komplikationen
M1		Clostridium difficile in der Stuhlprobe	Trigger - Intensivbehandlung		
M2		APTT > 100 Sekunden	I1		Pneumonie
M3		INR > 6	I2		Wiederaufnahme auf der Intensivstation
M4		Glukose < 3,0 mmol/l	I3		Behandlung/Eingriff auf der Intensivstation
M5		Anstieg des Harnstoff/Creatinin, 2fach über Normalwert	I4		Intubation/Re-Intubation
M6		Vitamin K	Trigger - Perinatal		
M7		Antihistaminika	P1 a		Apgarscore < 7,0 nach 5 Minuten
M8		Flumazenil (Anexate)	P1 b		Nabelschnur pH < 7,05 und/oder BE > 10
M9		Naloxon	P2		Transport oder Verlegung von Mutter oder Kind
M10		Antiemetika	P3		Magnesiumsulfat oder Bricanyl
M11		Hypotonie/Übersiedlerung	P4		Verletzungen 3. oder 4. Grades
M12		Plötzlicher Stopp der Medikation	P5		Einleitung der Geburt
Patienten ID: _____ Anzahl Trigger: _____ Anzahl Patientenschäden: _____ Anzahl Behandlungstage: _____ Zeitraum: _____			P6		B-Glukose < 2,2mmol/l beim Kind
			Trigger - Notaufnahme		
			A1		Wiederaufnahme in der Notaufnahme innerhalb von 48 Stunden
			A2		Aufenthalt in der Notaufnahme > 6 Stunden

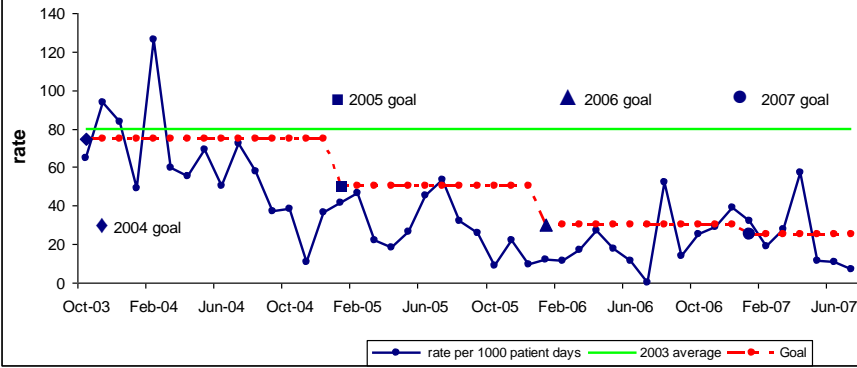
Um die Patientenschäden genauer zu beschreiben, benutzen Sie bitte die Rückseite!



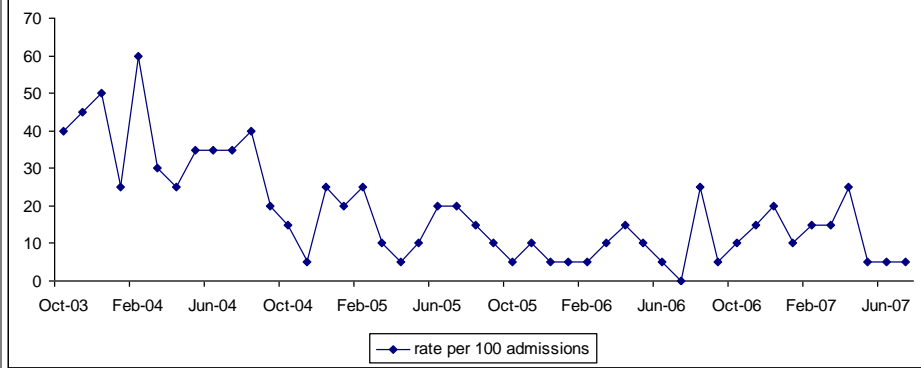
Flow Chart for IHI GTT Methodology



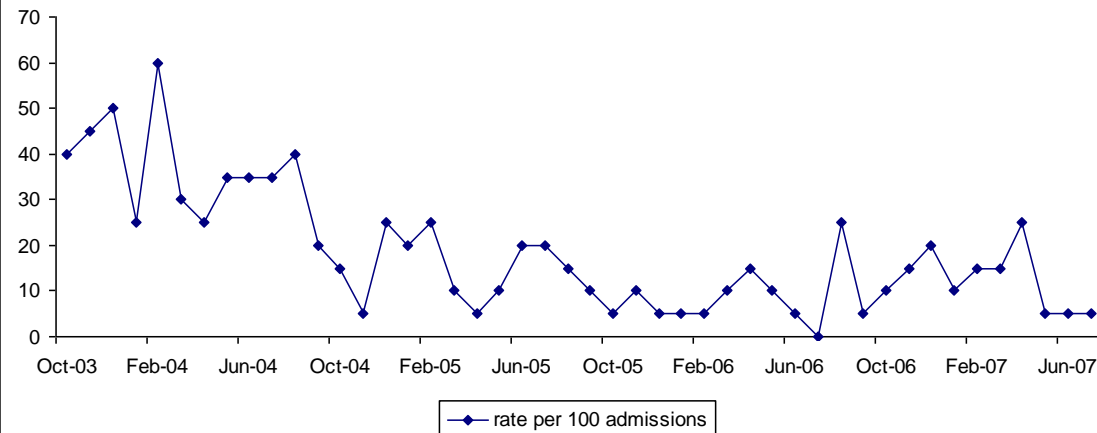
Adverse Event rate per 1000 patient days



Adverse Event Rate Per 100 Admissions



Adverse Event Rate Per 100 Admissions



AE rate per 1000 pt days = **7.2** (1 AEs per 139 pt days); 3 mth rolling = **9.3** ; 2007 YTD Avg = 21.6; 2007 Goal = 25; ALOS = 6.95 days; 20 charts reviewed
ICU stay = 6

Surgery = 8

OB = 2

ER = 8

Death = 0

1 AE identified in 1 patient – 20 patients reviewed (5%)

AEs per 100 admissions = 5

Summary of AEs: patient was exubated x 24 hrs - required reintubation secondary to collapsed lung

Why use a trigger-tool?

- Traditional reporting of errors, incidents, or events does not reliably occur in the best of organizations.
- Probably only 10-20% of all adverse events, near misses and risks are reported.
- In 90-95% errors does not lead to harm.
- Voluntary methods underestimate events and concentrate on what is interpreted as being preventable.
- Trigger tool identifies adverse events without using complex technology.
- The results can be used for systematic measurement of safety.





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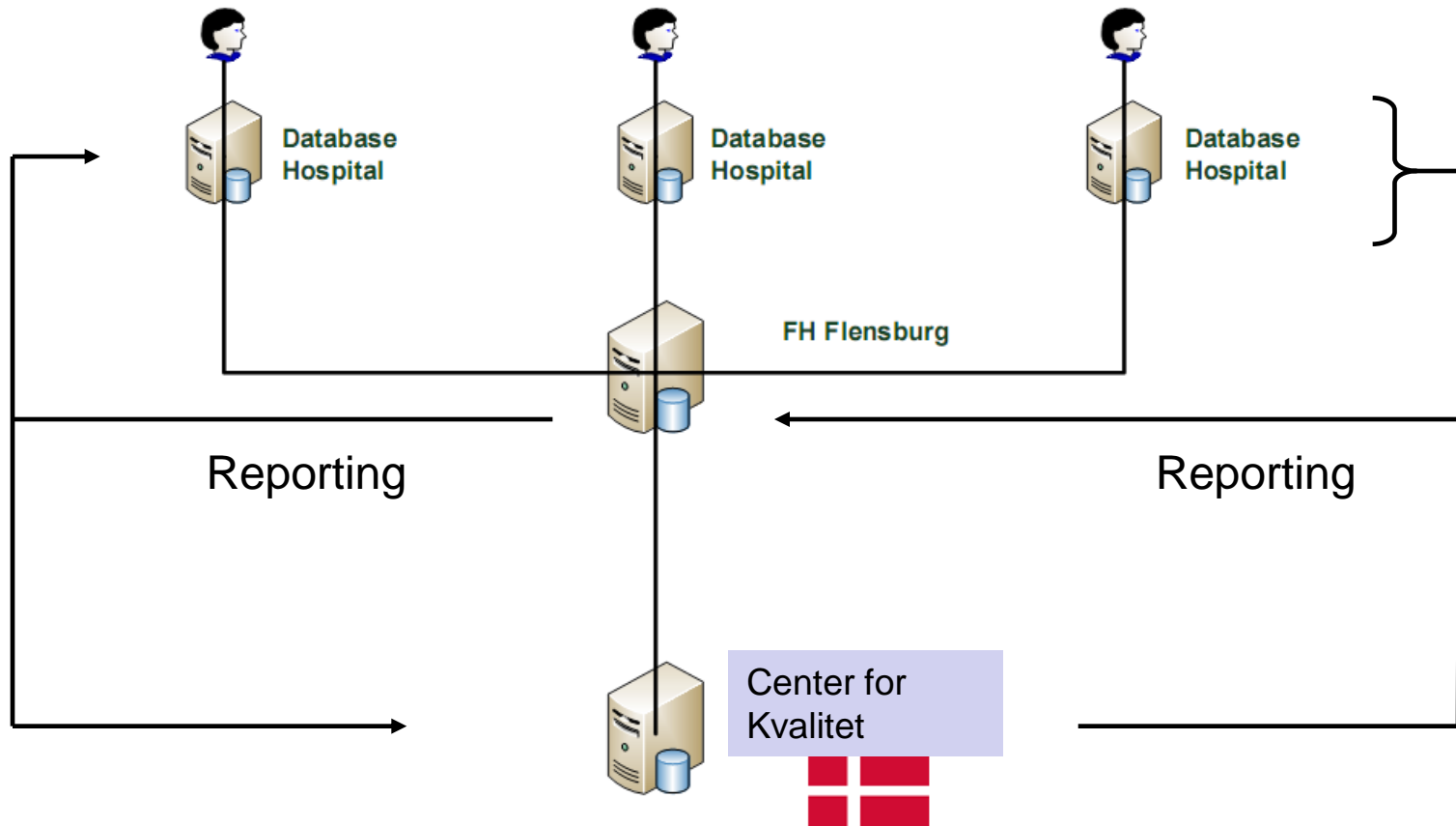


Knowledge Base

- Building a common knowledge base at the Flensburg University of Applied Sciences
 - common learning platform
 - reporting and analysis of the reports from CIRS, IHI Global Trigger Tool, and falls
 - regular reports to the project partners
 - exchange on successful actions
 - quick alerts



Data base and reporting



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The Safety Journey: a long-term strategy



dialogue



Strengthening Patient Safety between Denmark and Germany



www.patientsafety-interreg.com

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