

Change management – how to introduce new ideas in NICU teams

LISA Workshop
Medical University Vienna

Change in care in neonatology

- Less invasive surfactant administration LISA
- Avoid mechanical ventilation AMV
- Developmental care
- Bedside echocardiography
- Monitoring of brain function
- Simulation training – risk management



How do we introduce
new ideas in NICU
teams?

Quality control - benchmarking

Most important for efficient quality control

- Know your own data
- Analyze your data in comparison to international data
- Benchmarking: analyze your data in comparison to best practises from other institutions

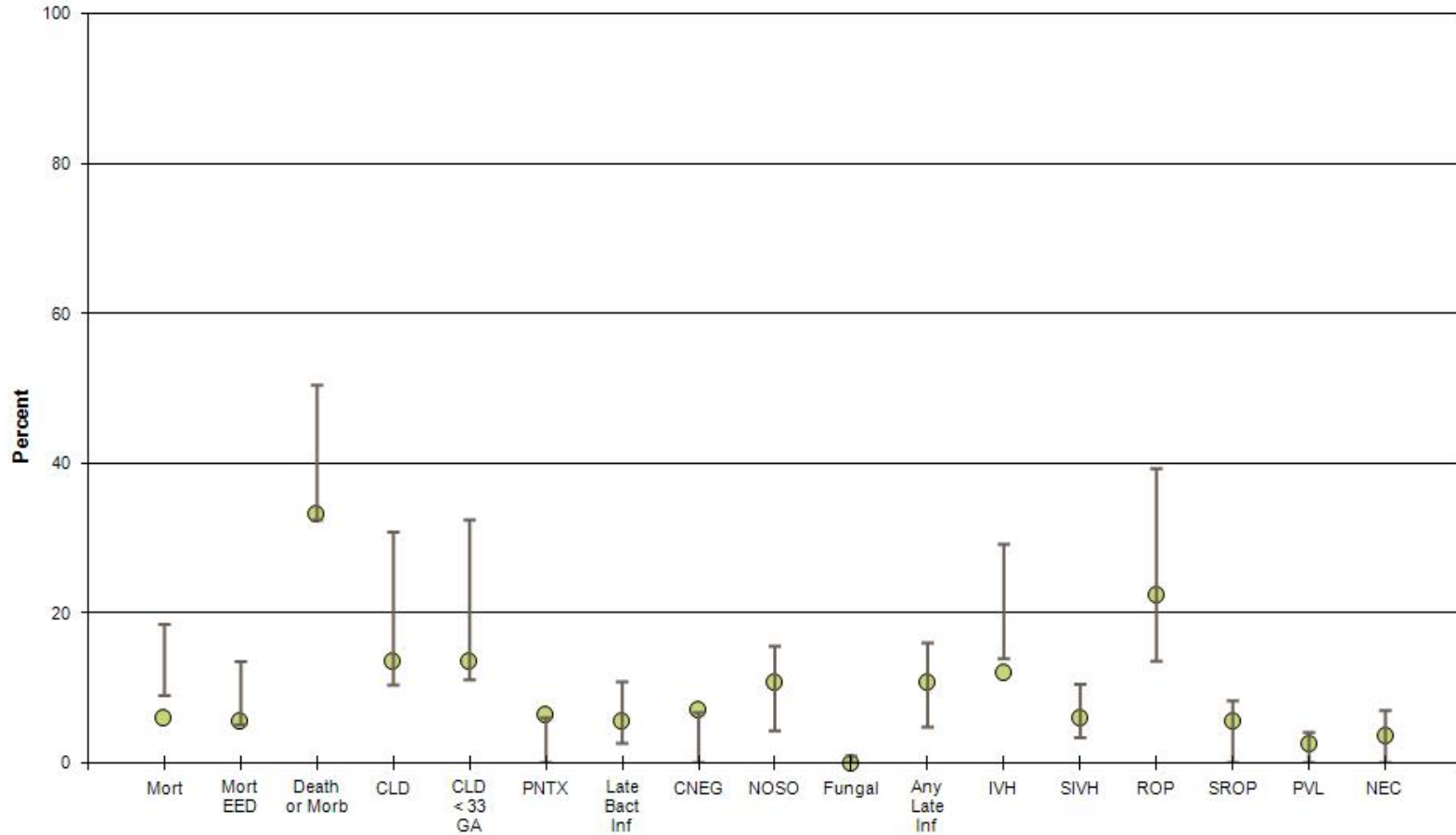
Quality control – Benchmarking - 2014

Mortality 2014 Vienna versus VONN

GA Week	Center (2014)			Network (2013)			
	Cases	N	%	N	%	Q1	Q3
< 22 Weeks	0	0		284	98.6%	100.0%	100.0%
22	0	0		1,111	92.3%	100.0%	100.0%
23	2	7	28.6%	2,483	62.0%	40.0%	100.0%
24	5	16	31.3%	4,135	37.8%	13.6%	60.0%
25	1	7	14.3%	4,425	23.2%	0.0%	36.4%
26	1	22	4.5%	5,308	16.0%	0.0%	25.0%
27	0	22	0.0%	6,267	10.9%	0.0%	16.7%
28	1	29	3.4%	7,357	7.1%	0.0%	10.0%
29	0	20	0.0%	8,345	5.3%	0.0%	7.1%
30	0	18	0.0%	6,934	3.9%	0.0%	0.0%
31	0	12	0.0%	5,251	3.6%	0.0%	0.0%
32	0	9	0.0%	3,892	4.5%	0.0%	0.0%
33	0	5	0.0%	2,151	4.0%	0.0%	0.0%
34	0	2	0.0%	1,432	4.0%	0.0%	0.0%
35	0	0		534	8.4%	0.0%	0.0%
36	0	0		264	11.4%	0.0%	0.0%
37	0	0		76	19.7%	0.0%	0.0%
> 37 Weeks	0	0		46	26.1%	0.0%	100.0%
All	10	169	5.9%	60,295	14.6%	9.1%	18.6%

Quality control – Benchmarking - VONN

Key performance measures Vienna vs VONN 2014



Quality control – Benchmarking - 2014

Key Performance Measures - All VLBW Infants

Measure	Center (2014)			Network (2013)			
	Cases	N	%	N	%	Q1	Q3
Mortality							
Mortality	10	169	5.9%	60,284	14.6%	9.0%	18.5%
Mortality Excluding Early Deaths	9	168	5.4%	57,269	10.1%	5.1%	13.5%
Death or Morbidity							
Death or Morbidity	56	169	33.1%	60,044	44.0%	32.4%	50.4%
Chronic Lung Disease							
Chronic Lung Disease	21	155	13.5%	51,208	24.4%	10.4%	30.8%
CLD: Infants < 33 Weeks	20	148	13.5%	46,981	26.0%	11.1%	32.4%
Pneumothorax							
Your Center	11	171	6.4%	58,556	4.0%	0.0%	5.7%
Any Location	11	171	6.4%	58,556	4.3%	0.0%	6.0%
Late Bacterial Infection							
Your Center	9	168	5.4%	56,025	7.9%	2.3%	10.3%
Any Location	9	168	5.4%	56,029	8.2%	2.6%	10.8%
Coagulase Negative Staph							
Your Center	12	168	7.1%	56,034	5.2%	0.0%	6.5%
Any Location	12	168	7.1%	56,035	5.3%	0.0%	6.7%
Nosocomial Infection							
Your Center	18	168	10.7%	56,027	11.5%	4.1%	14.8%
Any Location	18	168	10.7%	56,030	11.9%	4.3%	15.6%
Fungal Infection							
Your Center	0	168	0.0%	56,038	0.9%	0.0%	0.9%
Any Location	0	168	0.0%	56,039	1.0%	0.0%	0.9%
Any Late Infection							
Your Center	18	168	10.7%	56,027	12.0%	4.3%	15.3%

Quality control - Benchmarking – 2014

Key Performance Measures - All VLBW Infants

Measure	Center (2014)			Network (2013)			
	Cases	N	%	N	%	Q1	Q3
Any Location	18	168	10.7%	56,030	12.3%	4.8%	16.0%
Any IVH							
Your Center	20	168	11.9%	53,252	23.0%	12.7%	27.3%
Any Location	20	168	11.9%	53,312	24.4%	13.9%	29.2%
Severe IVH							
Any Location	10	168	6.0%	53,312	8.1%	3.4%	10.5%
ROP							
ROP	28	125	22.4%	42,970	31.4%	13.6%	39.3%
Severe ROP	7	125	5.6%	42,970	6.2%	0.0%	8.3%
Cystic PVL							
Cystic PVL	4	168	2.4%	54,011	2.9%	0.0%	4.1%
Necrotizing Enterocolitis							
Your Center	6	171	3.5%	58,557	4.6%	0.0%	6.5%
Any Location	6	171	3.5%	58,557	5.1%	0.0%	7.0%
Extreme LOS							
Extreme LOS (survivors only)	1	159	0.6%	50,949	4.9%	0.0%	6.8%

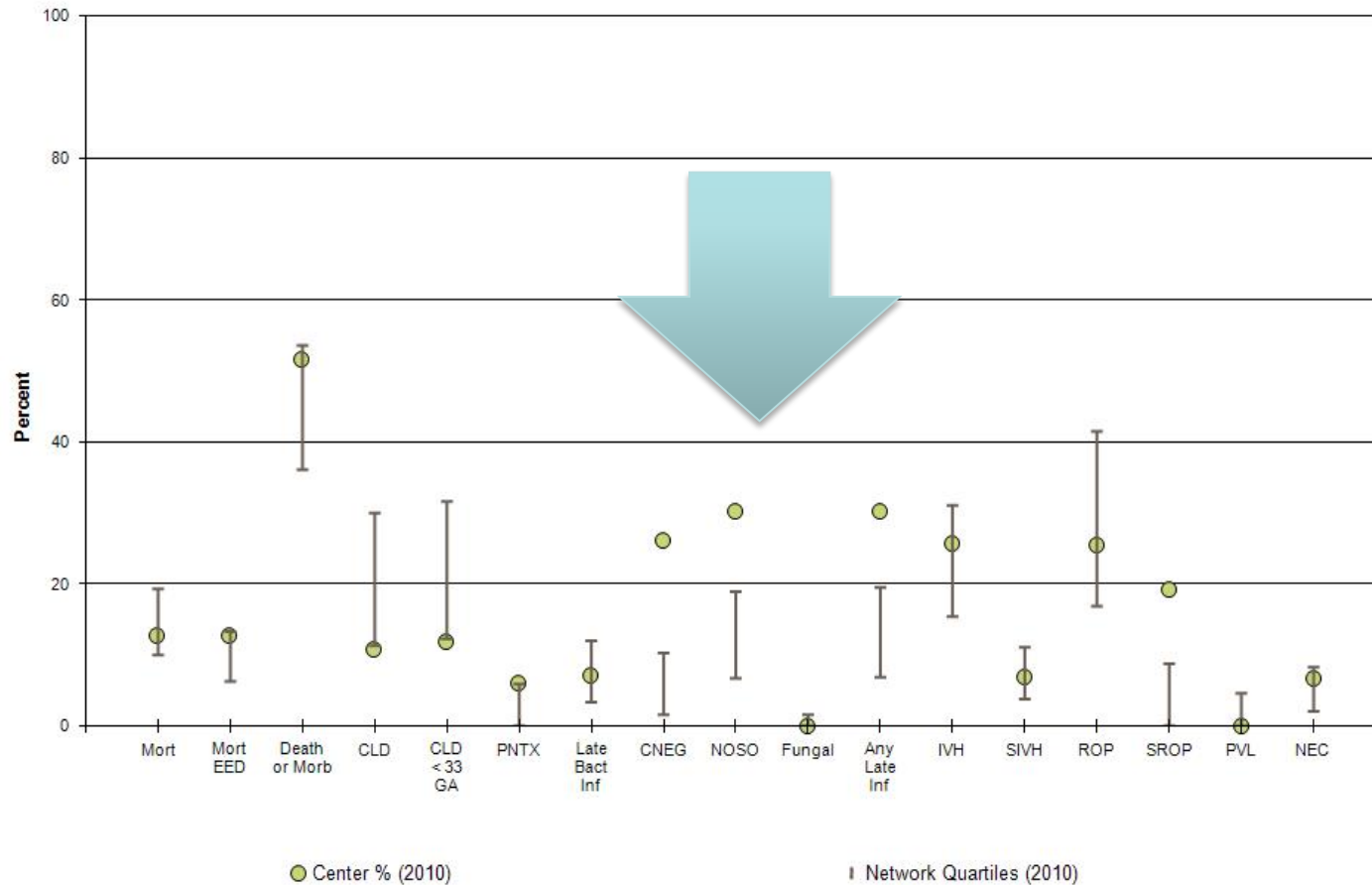
Quality control - Benchmarking – 2010

Key Performance Measures - All VLBW Infants

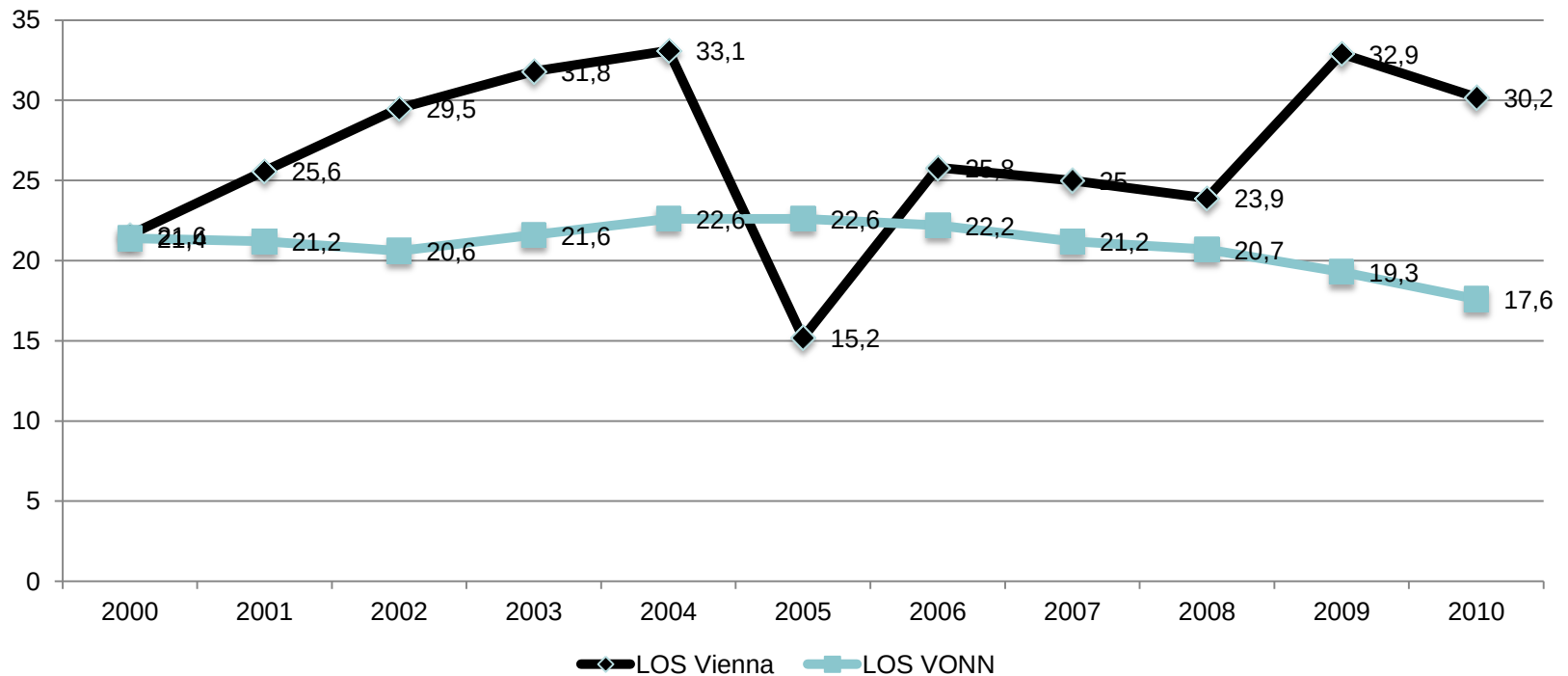
Measure	Center (2010)			Network (2010)			
	Cases	N	%	N	%	Q1	Q3
Mortality							
Mortality	23	182	12.6%	57,532	15.4%	10.0%	19.3%
Mortality Excluding Early Deaths	23	182	12.6%	54,399	10.5%	6.3%	13.3%
Death or Morbidity							
Death or Morbidity	94	182	51.6%	57,052	47.8%	36.1%	53.6%
Chronic Lung Disease							
Chronic Lung Disease	16	149	10.7%	48,304	24.9%	11.3%	30.0%
CLD: Infants < 33 Weeks	16	137	11.7%	44,483	26.5%	12.3%	31.6%
Pneumothorax							
Your Center	11	182	6.0%	55,410	4.1%	0.0%	5.6%
Any Location	11	182	6.0%	55,411	4.4%	0.0%	5.9%
Late Bacterial Infection							
Your Center	12	169	7.1%	52,993	8.7%	3.1%	11.5%
Any Location	12	169	7.1%	52,993	9.0%	3.4%	12.0%
Coagulase Negative Staph							
Your Center	44	169	26.0%	52,996	8.1%	1.3%	9.8%
Any Location	44	169	26.0%	52,996	8.3%	1.6%	10.3%
Nosocomial Infection							
Your Center	51	169	30.2%	52,994	14.6%	6.3%	18.3%
Any Location	51	169	30.2%	52,994	15.0%	6.7%	18.9%
Fungal Infection							
Your Center	0	169	0.0%	52,996	1.1%	0.0%	1.5%
Any Location	0	169	0.0%	52,996	1.2%	0.0%	1.6%
Any Late Infection							
Your Center	51	169	30.2%	52,994	15.1%	6.7%	18.9%

Quality control – Benchmarking - VONN

Key performance measures Vienna vs VONN 2010



Nosocomial sepsis rate Vienna vs VONN



„Reduction of nosocomial sepsis rate in the NICU“

- Multidisciplinary project including Hospital Hygiene Department, Microbiology Department, Hospital Pharmacy, nurses and doctors from Neonatology Department
- Statistically significant reduction of nosocomial sepsis rates at both NICUs and NIMCUs
- Statistically significant reduction of antibiotic use

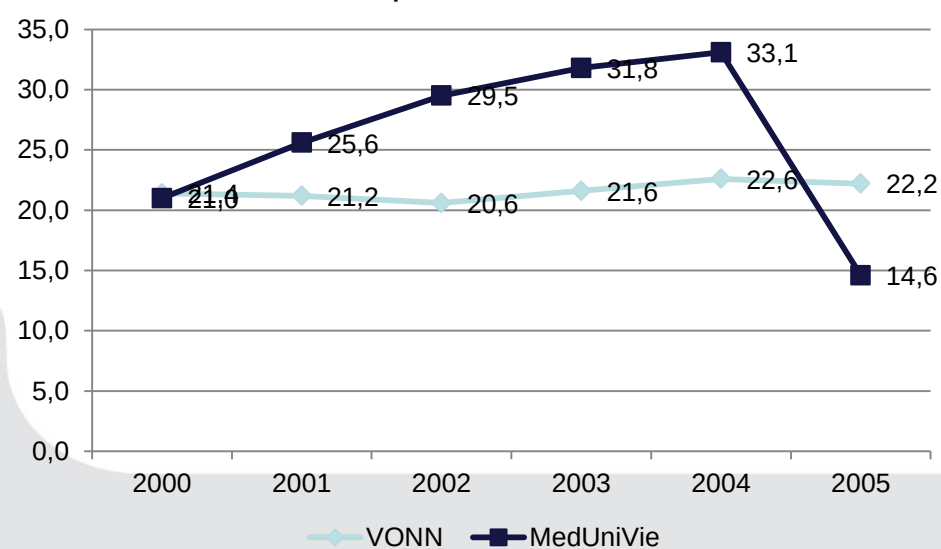
Course of the project

- Establishment of working groups: Elaboration of new SOPs/guidelines (nurses/doctors/representatives of hospital hygiene)
- Regular meetings: Presentation of new SOPs/guidelines, discussion, integration into clinical routine
- Compulsory theoretical and practical hand hygiene training by staff of Hospital Hygiene Department
- Introduction of „antibiotic rounds“
- Introduction of Surveillance system (NeoKISS)
- Revision of intensive care procedures (avoid any procedures and interventions as much as possible)

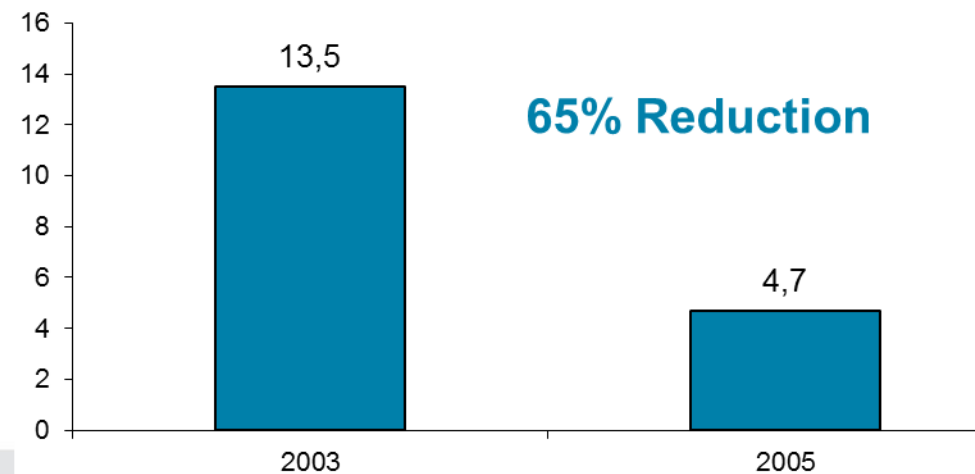
Results

- Time period Jan-Dec 2003 versus time period Jan–Dec 2005
- Culture-positive sepsis rates per 1000 patient days
- Comparison with Vermont-Oxford-Neonatal Network-Data

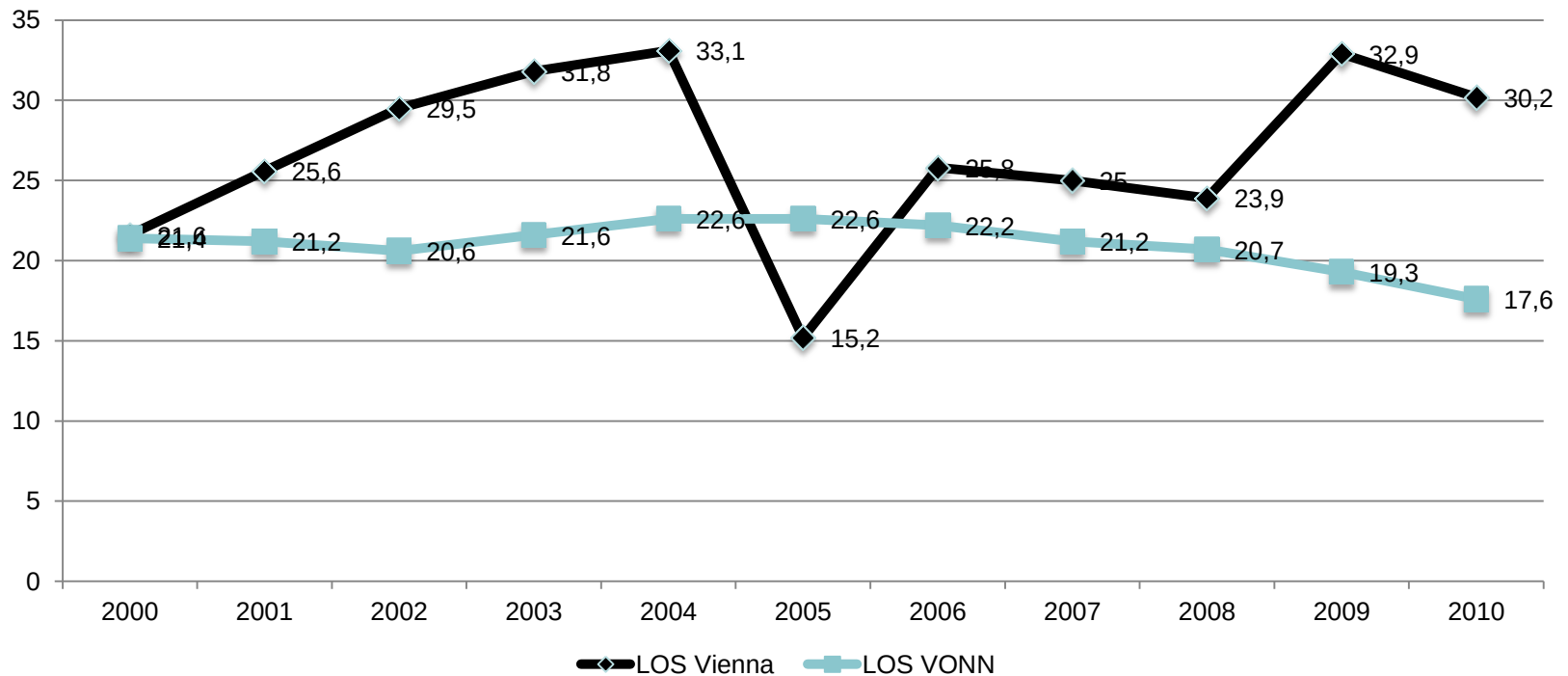
Nosocomial sepsis MedUniWien vs VONN



Episodes of sepsis per 1000 patient days



Nosocomial sepsis rate Vienna vs VONN



What was the problem?

Culture change

Most change efforts have a technical component (e.g. introducing new techniques/SOPs and learning the skills to execute them)

In order to have a sustained effect or benefit, often a major shift in mindsets and ways of working is important

If this is the case, the implementation of new SOPs/techniques must be accompanied by an adaptive change process (change of mindset).

Culture change

- *Technical change* – simple adjustment of operating procedures (learn new technical skills, introduce new SOPs)
- *Adaptive change* – shift of mindsets

Many change efforts fail because they directly target changes in operating procedures and behaviours, rather than addressing underlying mindsets

Successful, sustained changes in behaviour are only achieved by addressing the underlying drivers of behaviour

Reduction of nosocomial sepsis rate in the NICU

- Beginning September 2010
- Installation of Task-forces
 - Breastmilk
 - Observation of routine daily practices by hospital hygiene staff
 - Hand hygiene training
 - Handling of catheter hub
 - Technique of insertion of silastic catheter, SOP
 - *Mindsets*

Change of thinking.....

Immature immune system of preterm infants makes infections inevitable

Every single nosocomial infection is a iatrogenic complication!



Posters mounted in wards

**YOU CARRY THE LIVE
OF THOSE KIDS IN
YOUR HANDS**



Hand hygiene saves lives



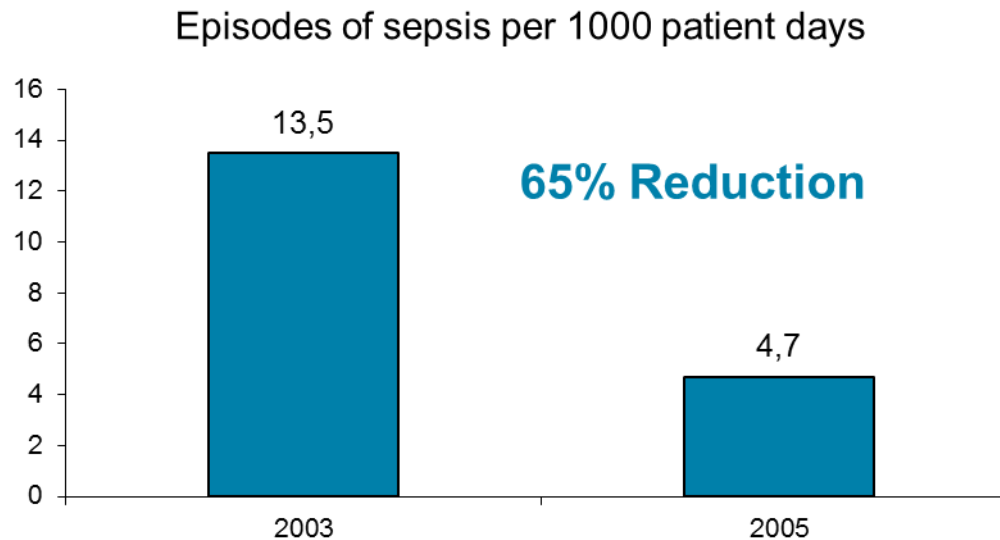
**clean hands
save lives**



Project 2010

Working with emotions: Kick-off

- What can be achieved by our team? Project 2004
- Yes, we can!



Project 2010

Reduction of nosocomial sepsis rate in the NICU

Projekt

Senkung der nosokomialen Infektionsrate an der Neonatologie

JEDE EINZELNE NOSOKOMIALE INFEKTION IST EINE SCHWERWIEGENDE KOMPLIKATION FÜR UNSERE PATIENTEN

EIN GROSSTEIL DER NOSOKOMIALEN INFEKTIONEN IST VERMEIDBAR

GEMEINSAM AN DER SENKUNG UNSERER NOSOKOMIALEN INFEKTIONSRATE ARBEITEN

Hier wollen wir ansetzen

Muttermilch

Katheter
legen

Katheter
pflegen

Händehygiene

HELFT UNS BEI DER UMSETZUNG! EURE MITARBEIT IST UNS EXTREM WICHTIG – VIELEN DANK!

A. Berger, J. Huber, F. Cardona, J. Schwindt, N. Haiden in Zusammenarbeit mit dem Team der Krankenhaushygiene

Project 2010

Reduction of nosocomial sepsis rate in the NICU



Wrapping of connecting area of infusion lines

Avoiding liquid film when connecting lines

30s disinfection of connecting area (scrub the hub)

New connectors for short infusions



Reduction of nosocomial sepsis rate in the NICU

New approach of catheter insertion

Simulation training!

Many Checklists!

Materialliste Schwemmkatheter

Haube
für ÄrztInnen und Pflege

Mundschutz
für ÄrztInnen und Pflege

Mantel

2 x sterile Handschuhe

steriler Einmalhandschuh

Abdecktuch (75 x 90)

Abdecktücher (50 x 50)
Inku: 2
offene Wärmeeinheit: 4

Handsackerl

Tupfer 5 x 5 cm

breite Leukostrips

Einmalschere

Peha Haft

gelbe Venflons

Octenisept

Scharpbehälter

Schwemmkatheter nach Ansage

Katheter legen

Schwemmkatheter Verlegung nach Neo-Standard

Diese Checkliste soll das standardisierte Verlegen eines Schwemmkatheters ermöglichen.
Sie soll die Vorbereitung und Durchführung erleichtern und ein steriles Arbeiten gewährleisten.
Danke für Eure Mithilfe!!!

Vorbereitung:

Materialcheck am Wagen

Ja

nein

Vor dem Verlegen:

Haube und Mundschutz

Hände direkt vor dem Anziehen von Mantel und Handschuhen desinfiziert

Steriler Mantel

Sterile Handschuhe

Alle im Bereich der Katheterverlegung tragen Haube und Mundschutz

Desinfektion:

Die sterilen Tücher bedecken den Inku komplett

3 x desinfiziert

Katheter Legen:

Vor dem Legen nochmals Desinfektion durchgeführt

Vor dem Legen 1. Handschuhpaar ausgezogen

Schwemmkatheter nach Standard fixiert

Name der Ärztin/des Arztes

Name der Schwester/des Pflegers

Datum

Patientenetikett

Project 2010

Reduction of nosocomial sepsis rate in the NICU

1. Schritt: Vorbereitung

Haube aufsetzen
Mundschutz anziehen

Arbeitsbereich optimiert?

Alle Kabel und Infusionsleitungen aus dem Weg? Unterlage flach? Abgemessen?
Mistkübel in Reichweite?

Händedesinfektion

Einwirkzeit
mindestens 30 Sekunden beachten !

Mantel und Handschuhe
von 2. Person kontaminationsfrei
öffnen lassen

Mantel anziehen
2 Paar sterile Handschuhe anziehen

Sterilen Tisch vorbereiten:

- großes Abdecktuch ausbreiten
- 2 kleine Abdecktücher (50x50)
 - 2 x Tupfer (5x5)
 - Einmalschere
- breite Leukostrips
- Handsackerl
- Schwemmkatheter
- gelbe Venflons

Material vorbereiten:

Loch in Tuch schneiden
Druckverbandtupfer zurechtschneiden
Steristrips zur Fixierung zurechtschneiden
Pflege: 3 Tufoer satt mit Octenisept tränken
(in der geöffneten Verpackung)

2. Schritt: Vorbereitung im Inkubator

Bei temperaturstabilen Kindern:
Inkuklappe öffnen

Hand/Fuß mit dem Sackerl greifen
Sackerl mit Leukostrips festkleben
Klare Grenze zwischen Sackerl und Haut!

3 x Desinfektion !!!
(mindestens 1 Minute Einwirkzeit)

2. Person übernimmt Hand/Fuß steril

1. Steriles Tuch über Extremität
2. Steriles Tuch bedeckt den Rest des Inku
Der gesamte Arbeitsbereich muss steril abgedeckt sein!

Nochmaliges Desinfizieren

(mindestens 1 Minute Einwirkzeit)
1. Handschuhpaar ausziehen

Material in den Inku legen:

gelber Venflon
vorbereiteter Druckverbandtupfer und Leukostrips
Tupfer und Leukostrips
Schere
Schwemmkatheter

Inkuklappe schließen

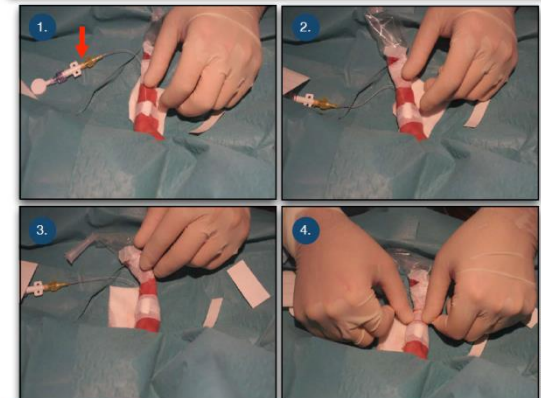
3. Schritt: Schwemmkatheter legen und fixieren

Katheter legen

Durchsichtige Halterung von Katheter entfernt ?
Nach jedem Stechversuch: neuer Venflon !
Keine Pinzette verwenden!

Katheter fixieren

1. Druckverbandtupfer fixieren
2. Obere und untere Kante fixieren (s. Photos)
3. Venflon und Katheter mit breitem Leukostrip
umkleben (s. roter Pfeil)



Spitze Gegenstände abwerfen !

Bitte Evaluationsbogen ausfüllen ! Danke !

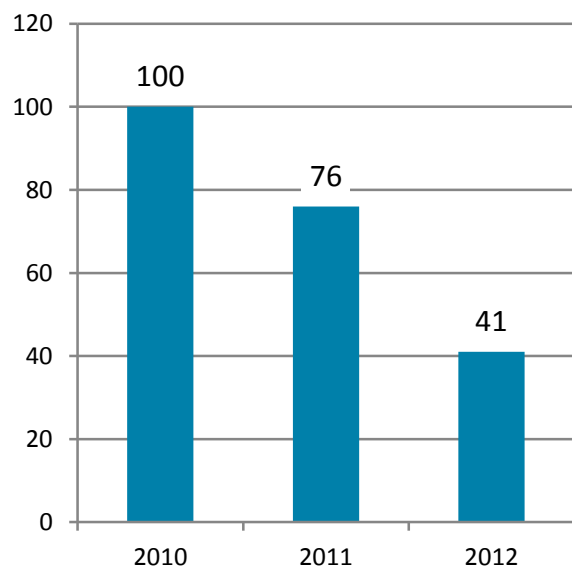




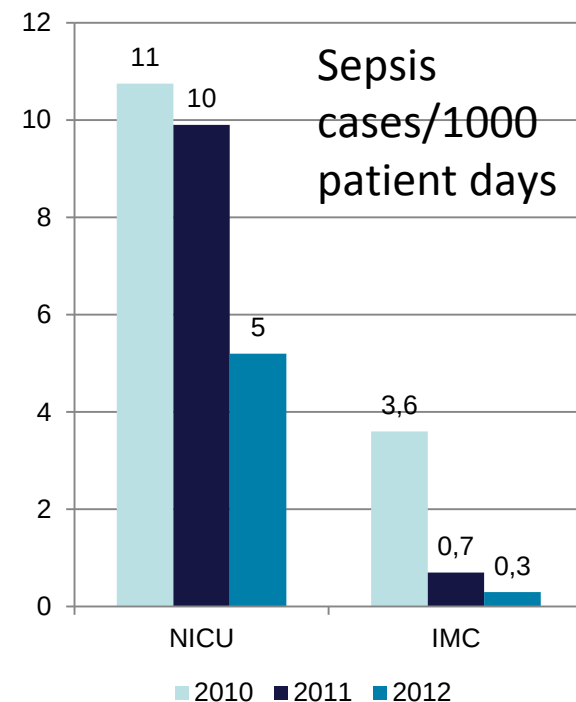
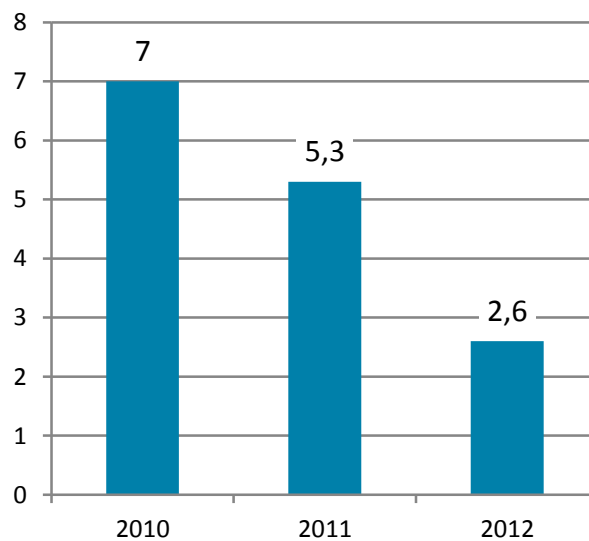
Project 2010

Reduction of nosocomial sepsis rate in the NICU

Absolute number of sepsis cases



Sepsis cases/1000 patient days



Project 2010

Reduction of nosocomial sepsis rate in the NICU

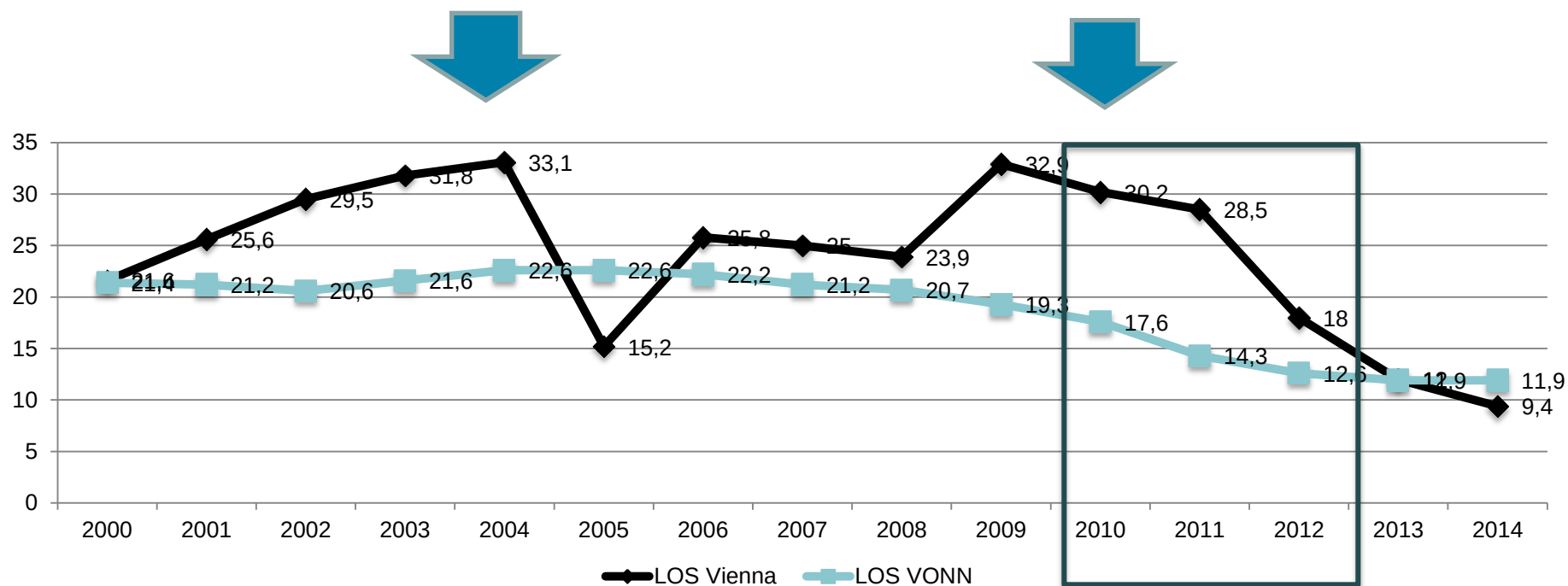
- Highly significant reduction in nosocomial sepsis rates in all NICUs and NIMCUs.
- Low rates of infections despite high number of central venous catheter days and increase in number of extremely premature infants
- Very successful project!
- Success of the whole team - celebration!

**Thank you for
your
commitment,
dedication and
support!**



Project 2010

Reduction of nosocomial sepsis rate in the NICU



Change management

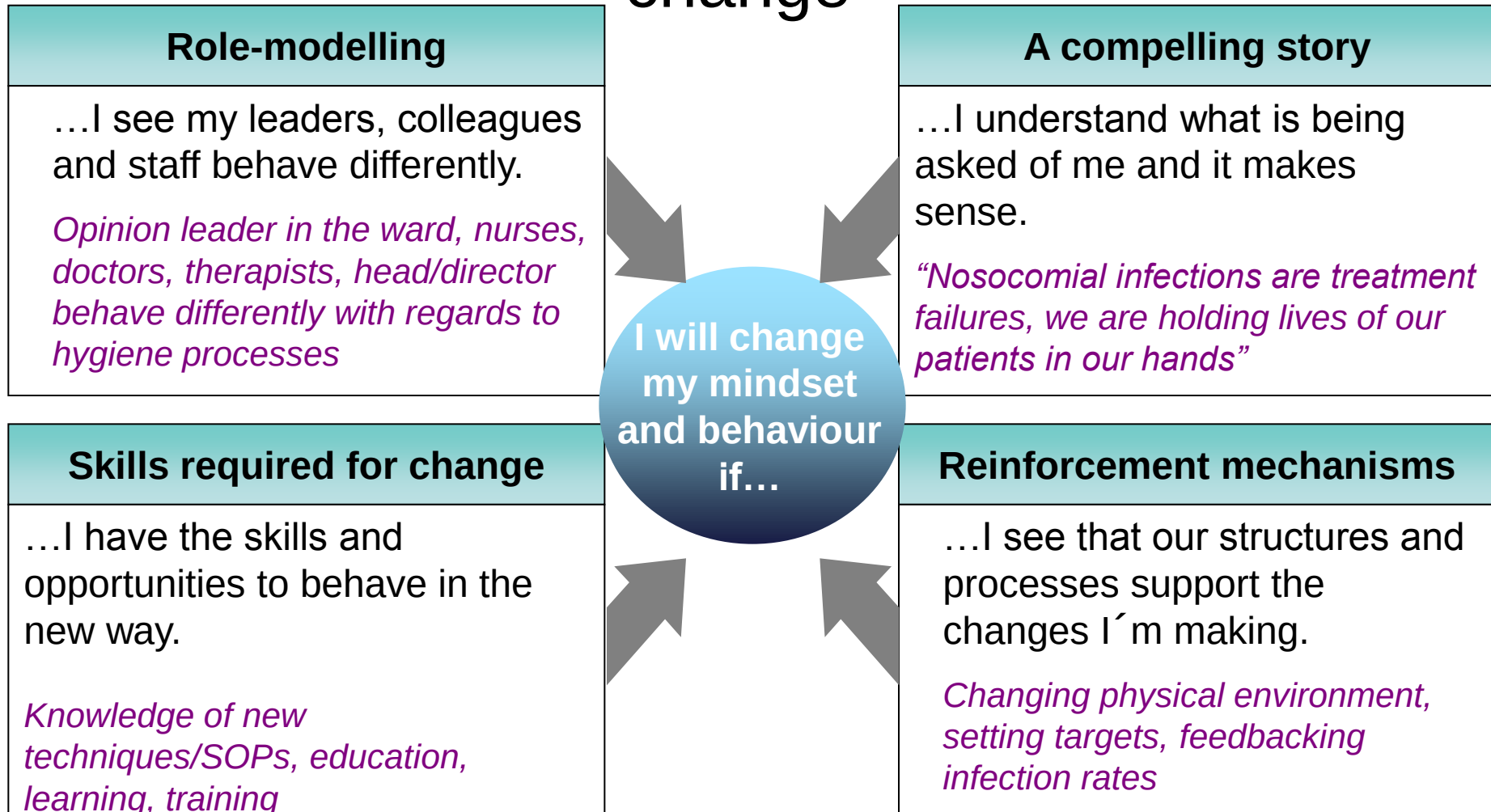
Culture change

- *Technical change* – simple adjustment of operating procedures
- *Adaptive change* – shift of mindsets

Mindset change in the NICU:

- Mechanical ventilation → spontaneous breathing whenever possible
- Sedation and i.v. analgesia → non-pharmacological analgesia and developmental care
- Nurses and doctors experts for child → shared decision making, acceptance of parents as equal partners

The Influence Model for supporting mindset change



Source: Beyond Performance, Scott Keller and Colin Price, 2011

Mindset shifts

- ***Isolation to collaboration.*** A shift from seeing my role as delivering my job description/for my area, to seeing myself as accountable for overall Department output and patient outcome
- ***Status quo to change.*** A shift from preferring to continue to do things as always done to recognizing that change is inevitable and creates opportunities
- ***Expert to life-long learner.*** A shift from seeing myself as a deep expert in my field, to seeing myself as having great strengths and still being on a continuous learning journey.

Adaptive change

- Change in mindset
- Can have significant emotional component
 - *fear about what the future might hold*
 - *sense of loss for how things have worked up to now*
 - *ressentiment about routines being shaken up*

Significant emotional component

It's easy just to think that people resist change out of sheer awkwardness and lack of vision. However you need to recognize that for some, change may affect them negatively in a very real way that you may not have foreseen.

For example, people who've developed expertise in (or have earned a position of respect from) the old way of doing things can see their positions severely undermined by change.

Adaptive change

- Change in mindset
- Can have significant emotional component
 - *fear about what the future might hold*
 - *sense of loss for how things have worked up to now*
 - *ressentiment about routines being shaken up*
 - ***excitement about new opportunities***

The change curve

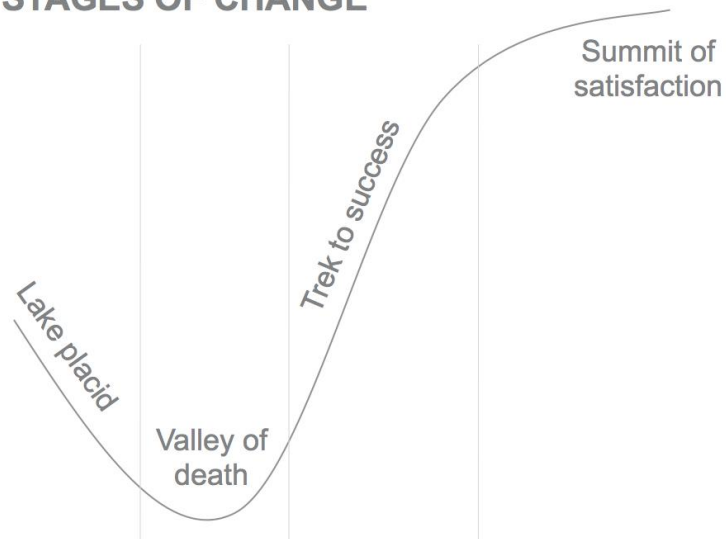
THE CHANGE CURVE



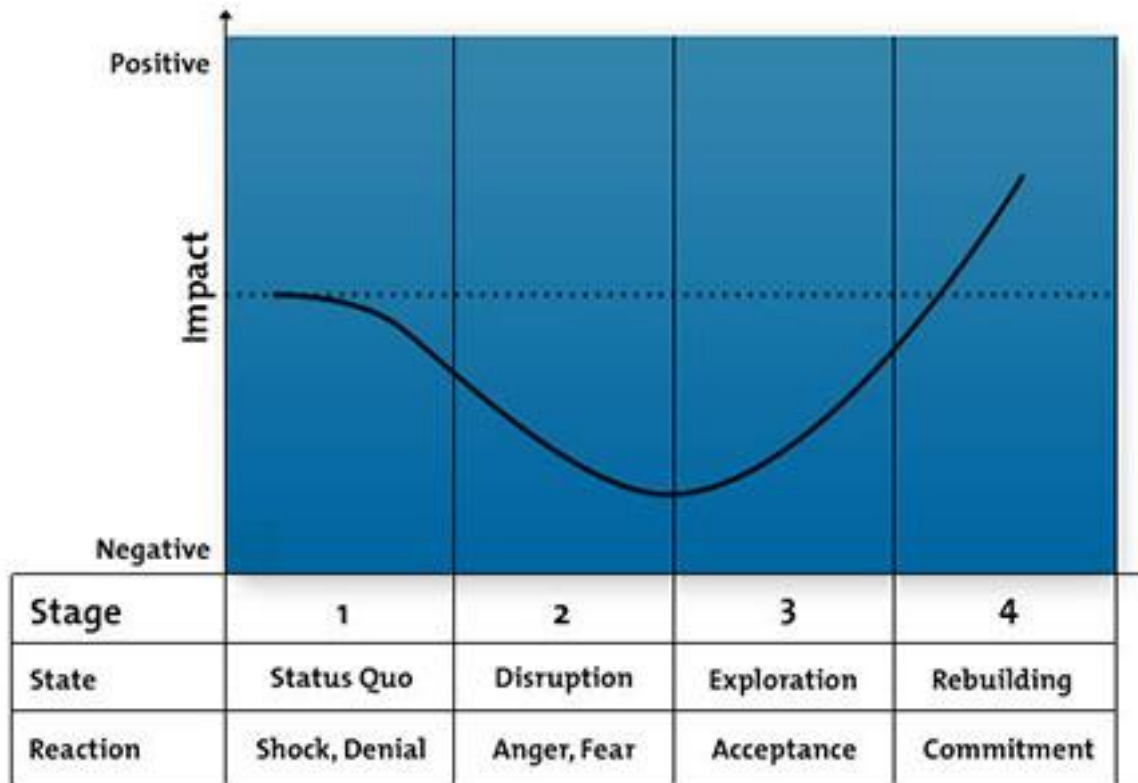
LEAD CHANGE

Understanding the **change curve** helps us navigate and persevere through change and lead others through it

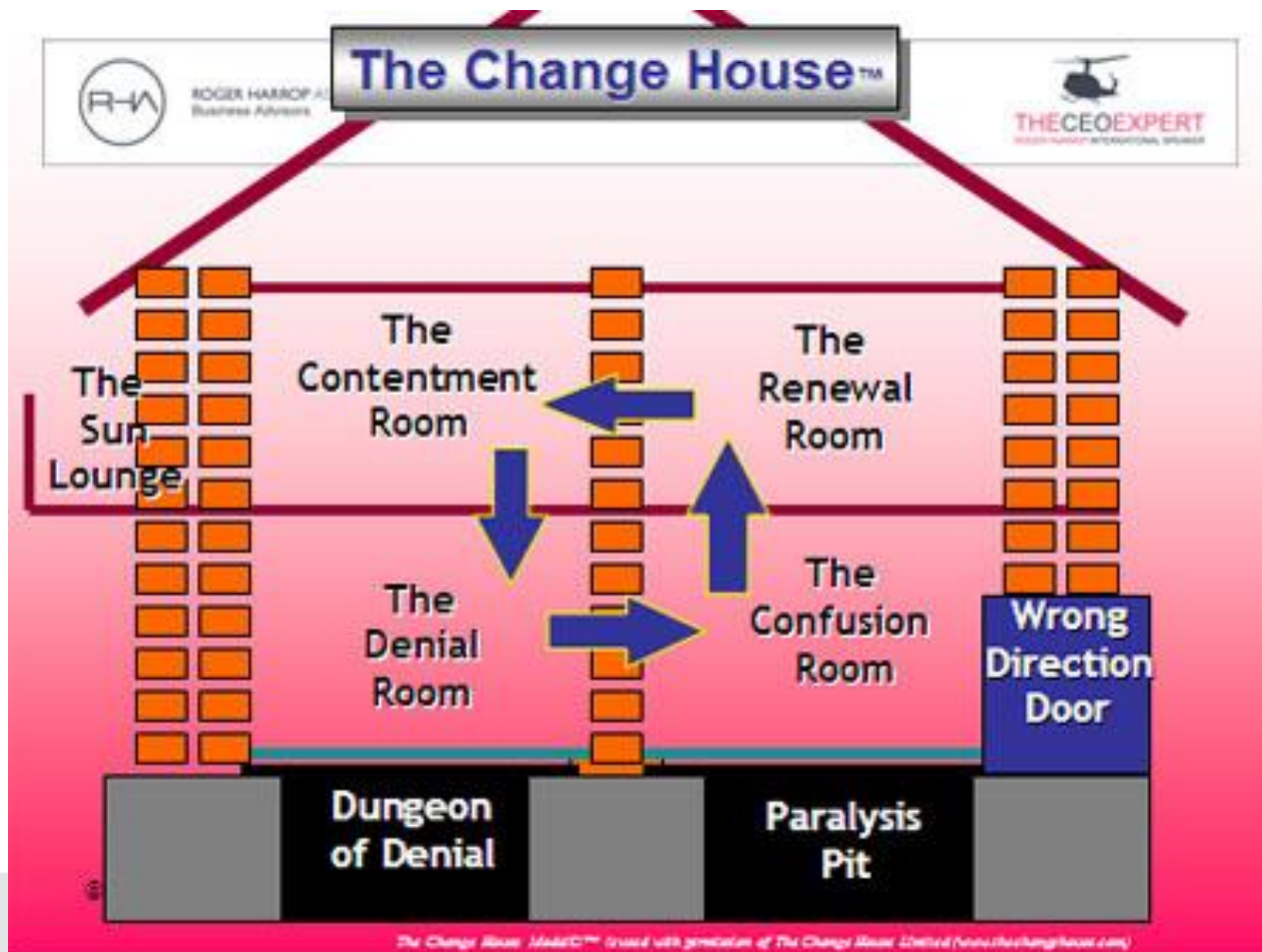
STAGES OF CHANGE



The change curve

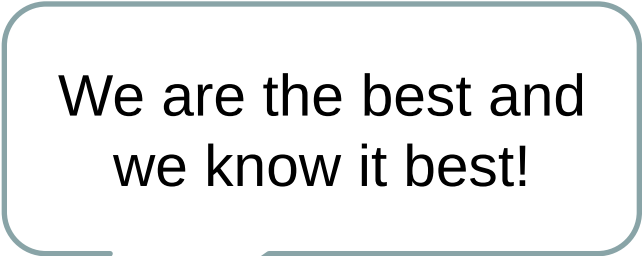


The change house

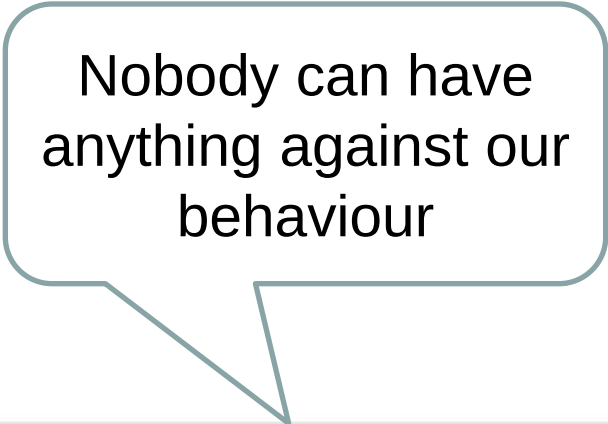


The contentment room

- We ignore what is going on around us
- We are arrogant
- We focus on every-day routine



We are the best and
we know it best!



Nobody can have
anything against our
behaviour

The denial room

- We glorify the past
- We are aggressive
- We don't listen to others

They simply do not understand us!

Others are to be blamed....

This will definitely not work.....

The confusion room

- We are frustrated
- We are depressive
- We loose orientation
- We back out – stop being involved

HELP!!

Why is everything
chaotic?

We need a new
boss!

Why does nobody
understand us?

The renewal room

- We accept our responsibility
- We communicate well
- We listen and learn
- We are flexible and have trust

Let us do it together!

Now we are stronger

It works better than expected

I do not really miss the old way

Introducing an open visiting policy in the NICU

Status quo 2008



- Individual visiting hours in 4 units
- Visiting hours same for parents and for other visitors
- „Exceptions“ for individual parents if requested
- In general, „parent-free“ nights for staff
- General conception of satisfactory situation by most part of staff

Developmental care

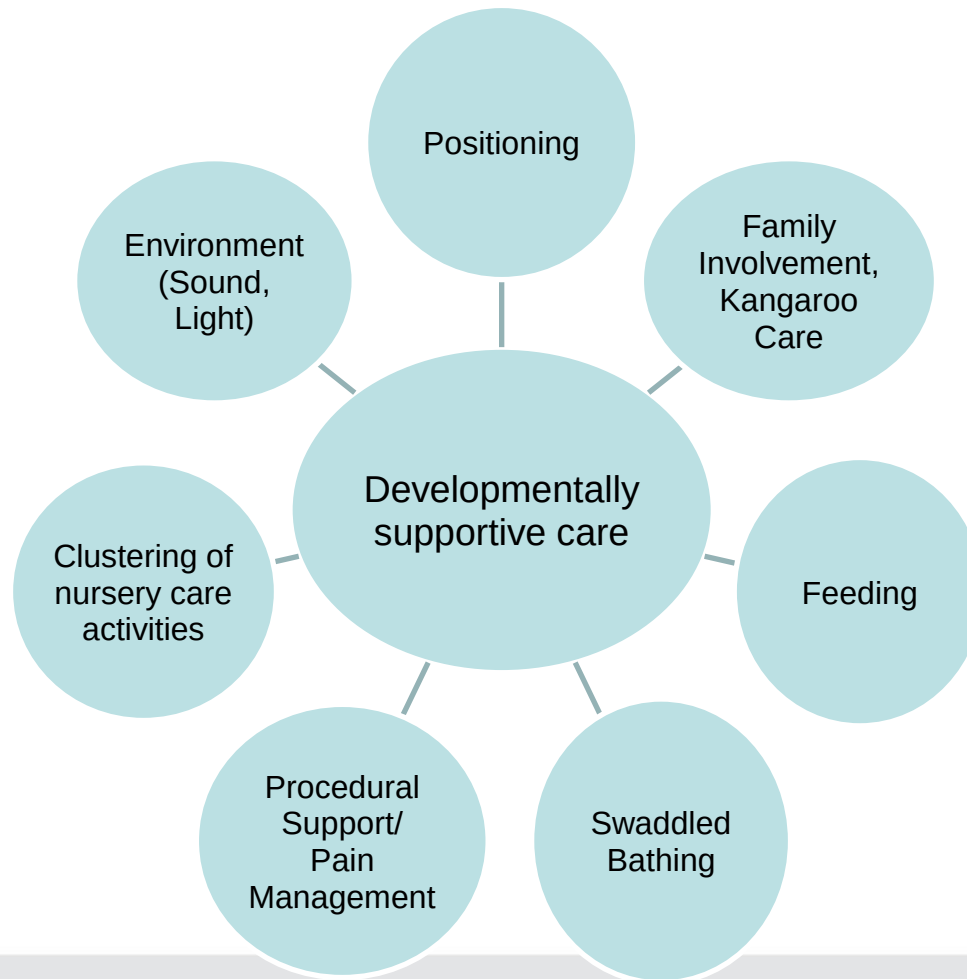
Developmentally supportive care is the implementation of a structured care environment which supports, encourages, and guides the developmental organization of the premature infant.



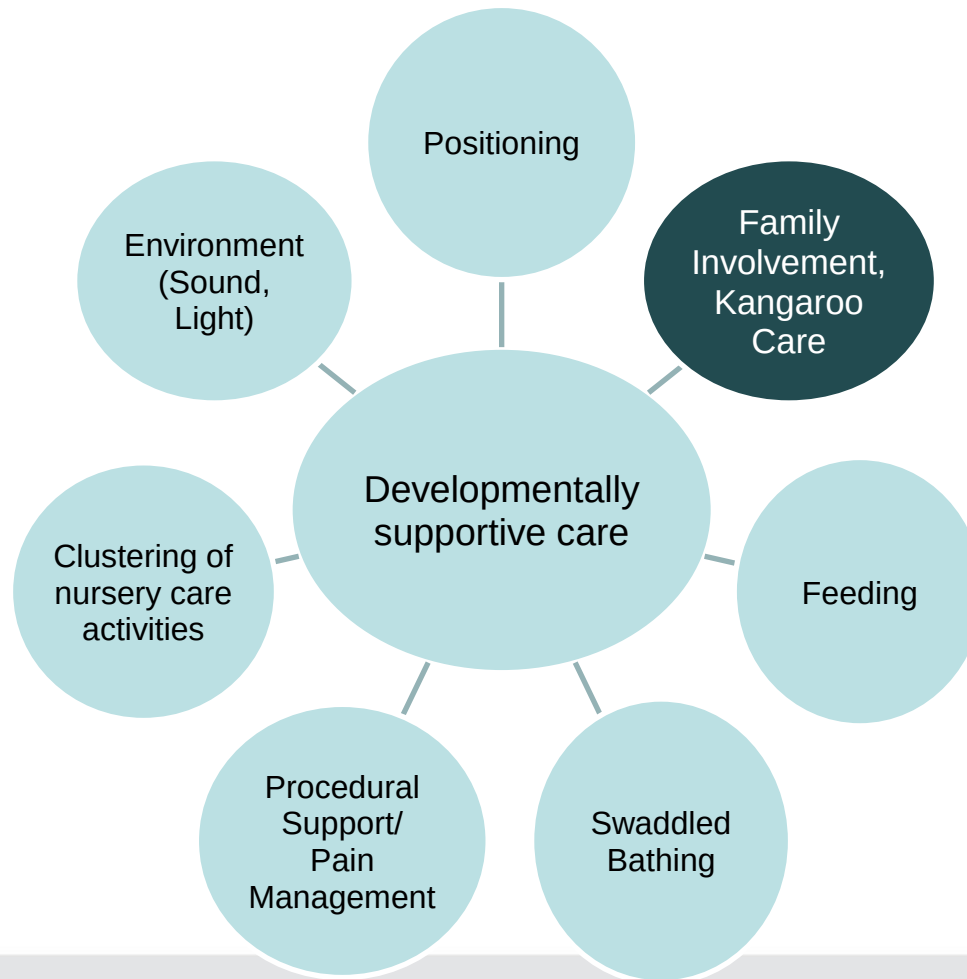
Minimize iatrogenic effects on disease states by modification of unfavourable environment.

All interventions designed to minimize stress of premature infant and family.

Developmental care



Developmental care



Family involvement



- 24h/day visiting hours for parents
- Starting on the first day to enable parents to take part in care
- Many conversations and much information needed
- Information material

Introducing an open visiting policy in the NICU

Extensive work in team

- Definition of „open visiting policy“
- EACH Charta: „Children in hospital shall have the right to have their parents or parent substitute with them at all times“
- Research on visiting policies of other NICUs nationally and internationally
- Installation of working group (nurses and doctors from all 4 units working together on fears, concerns and expectations)

Introducing an open visiting policy in the NICU

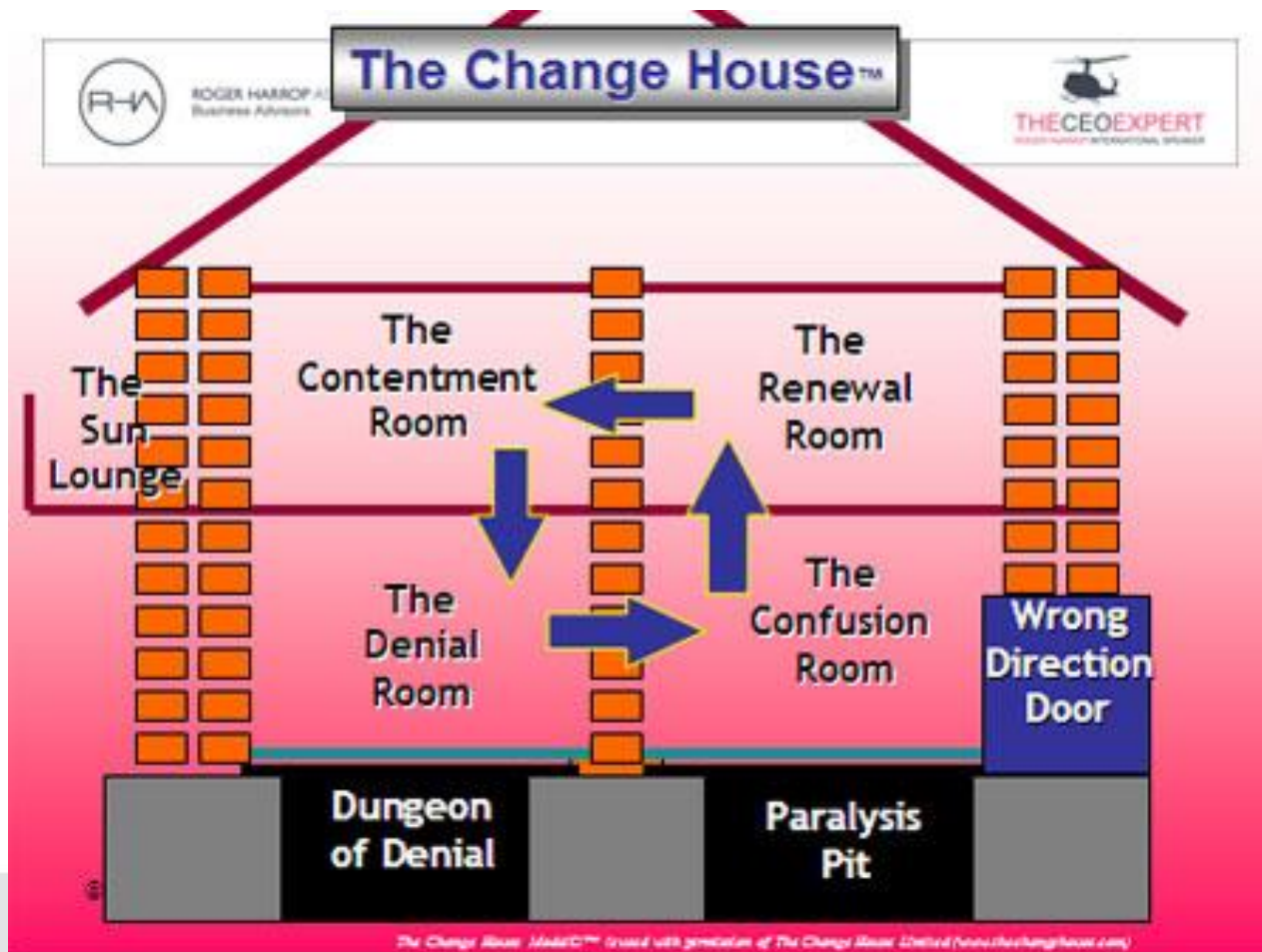
Extensive work in team

- Attitude towards parents
- Acceptance of parents as experts for their infants
- What we expect from parents?
- Definition of surrounding conditions
- Information leaflets for parents

Introducing an open visiting policy in the NICU

- Decision of date of start (1.5.2010)
- Basic understanding: „Parents are welcome in our units at any time during day and night“
- Most often expressed concerns and worries addressed
- Evaluation after 6 months

The change house



The contentment room

- We ignore what is going on around us
- We are arrogant
- We focus on every-day routine

Most intensive
care units have
„visiting hours“ for
parents

Nobody will object that
we are better experts
for these kids than the
parents

We have always
done it like that and
have best results

The denial room

- We glorify the past
- We are aggressive
- We don't listen to others

We will not be able
any longer to do our
work safely

Parents will overstrain
themselves, they will
feel forced to stay during
nights

This will definitely
not work, the kids
will have no resting
periods

Our bosses don't
understand because
they are not working
bedside

The confusion room

- We are frustrated
- We are depressive
- We loose orientation
- We back out – stop being involved

We cannot do rounds or talk about patient bedside because parents are around all the time

Parents are observing every movement – this is distressing

I feel uncomfortable if I cannot work as I was used to

HELP US!!

The renewal room

- We accept our responsibility
- We communicate well
- We listen and learn
- We are flexible and have trust

It's better to work on patient with another person, parents help doing rounds

Parents are a strong resource for their baby, we are saving time

It works better than expected, parents do not usually stay over night

I cannot imagine any longer that parents were previously sent home in the evening

Introducing an open visiting policy in the NICU



After very few months

- Nobody questioned the open visiting policy any more
- Some (very few) team members quit (some were „asked“ to do so)
- Parents were seen as ressource and support and experts for their babies
- Evaluation after 6 months revealed no major concerns or necessary changes

Change management - Conclusion

- Neonatology has changed a lot in recent years
- In order to achieve best outcomes, we must be open for change
- Prior to each change process we have to know our own data in comparison to benchmarks and know what we want to change
- In every change process, we have to make sure that both technical and adaptive change processes are addressed

Change management - Conclusion

- A change of mindset is essential for sustained and successful change in teams and organizations
- In order to change mindsets, we have to reach heart and mind of our team – tell a compelling story
- Seek to understand the mindsets that support current behaviours and outcomes - make people feel heard
- Be a strong team leader
 - address issues
 - set expectations
 - get the right team on board
 - focus on the right work
 - monitor progress
 - highlight and celebrate success

Change projects in the NICU

Who if not us can provide a better outcome for our patients?

Yes, we can!

