
Bedside scanning in Tilburg

GS1 Global Healthcare Conference

Amsterdam, October 4, 2011

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- **Previous initiatives**
- **Background ZAMB**
- **Barcode scanning in Tilburg**
- **Figures**
- **Bottlenecks**
- **Next steps**



○ “Logistieke kenniskring” March 2010

- Knowledge exchange
- Cooperation
- Focus groups



○ Next steps

- Focus: barcode unit dose
- Cooperate with NVZA



Previous initiatives

- **EAG symposium october 2010**
 - **Knowledge exchange**
 - **Common understanding**
 - **Action plan**
- **Next steps**
 - **Various short term actions**



Background ZAMB (Ziekenhuis Apotheek Midden-Brabant)

- **120 FTE / 5 departments**

- **Pharmaceutical Information Supply (pharmacy assistants)**
- **Logistics**
- **Compounding unit**
- **Laboratory**
- **Information Technology**

- **Clients**

- **2 Hospitals in Tilburg, 1 in Waalwijk**
- **Residential nursing homes**
- **Others (e.g. ambulance organisation, external pharmacies)**



○ The logistics department (18 FTE)

- Purchasing
- Inbound & outbound activities
- Relabeling (3 FTE)
- Internal & external transport
- Ward activities (stock scanning, storage, UBD)



Terminology



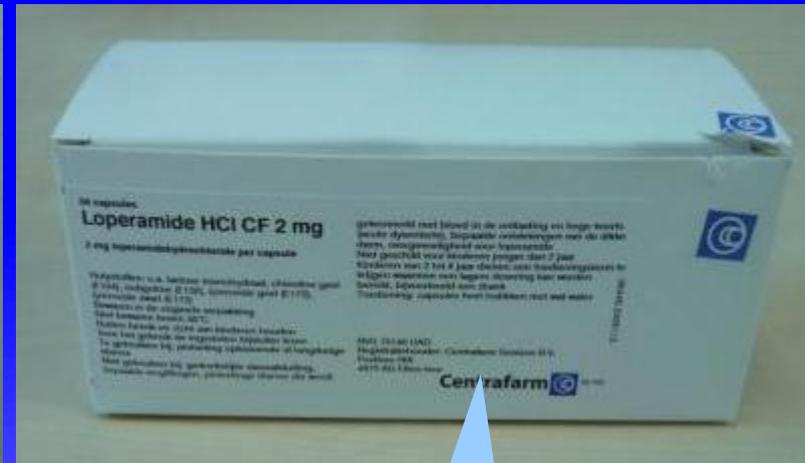
Unit Dose

1 Unit Dose in 1 blister (EAV)



Strip

5 Unit Doses in 1 strip



Secondary Package

50 Unit Doses in 1 secondary package



Barcode scanning in Tilburg

- Barcode verification of patient & medicine
- First hospital in NL (since 2004)



Medicatieopdrachten				Toedieningen				Medicatieoverzicht				Patiëntwaarden				Medicatie bij ontslag				Diagnose				Patiëntinformatie				Allergieën				Opname informatie			
Actuele medicatie		08-09-2010				09-09-2010				10-09-2010																									
PANTOZOL 20 MG TABLET MSR		DD: 20 MG				DD: 20 MG				DD: 20 MG																									
STND (CHLORTALIDON 25 MG TABLET)																																			
ALENDRONINEZUUR PCH 70MG TA																																			
ACETYLS CARDIO CF 80MG DISP		DD: 80 MG				DD: 80 MG				DD: 80 MG																									
CALCI CHEW D3 500MG/400IE TABLET		DD: 2 ST				DD: 2 ST				DD: 0																									
SLOW K 600 MG TABLET MGA		DD: 1800 MG				DD: 1800 MG				DD: 600 MG																									
PARACETAMOL CF 500MG TABLET		DD: 3500 MG				DD: 4000 MG				DD: 1000 MG																									
TEMAZEPAM CF 10MG CAPS		DD: 0				DD: 10 MG				DD: 0																									
CELEBREX 100MG CAPSULE		DD: 100 MG				DD: 200 MG																													
Gestaakte medicatie		08-09-2010				09-09-2010																													
LORMETAZEPAM CF 2 MG TABLET		DD: 2 MG				DD: 0																													

Details toedieningen

Tijd: 09-09-2010 17:30

Gepland tijdstip: 17:00

Status: Toegediend

Resultaat: Geen bijzonderheden

Geneesmiddel: CELEBREX 100MG CAPSULE

Toedieningsweg: ORAAL

Dosis: 100 MG

Snelheid:

Toegediend door: Lo [REDACTED]

Opmerking:

Opmerking bij MO: 18

■ Te laat
■ Geneesmiddel toegediend
■ Geneesmiddel niet toegediend

■ Geannuleerd
■ Actief



Barcode scanning in Tilburg

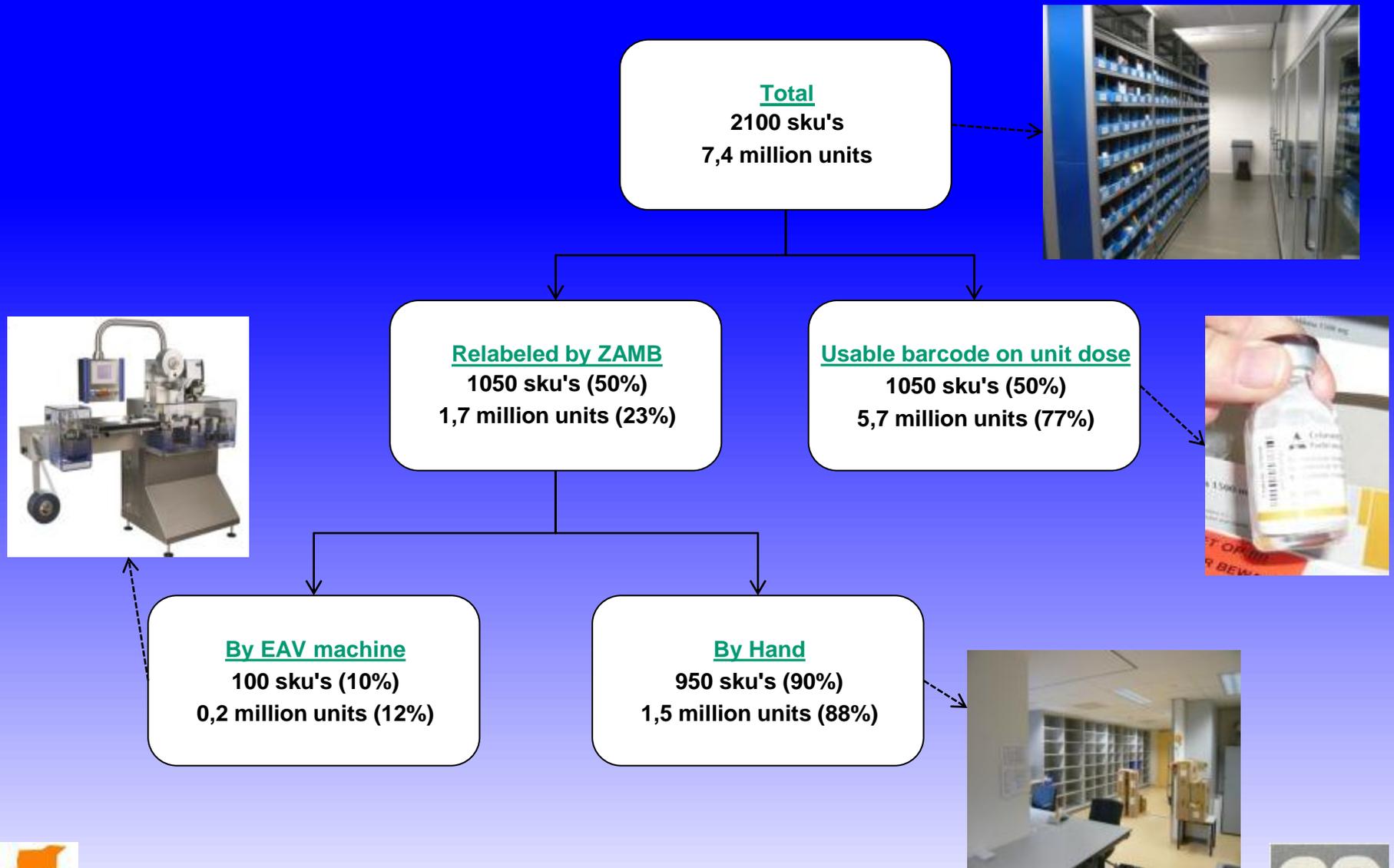
- Check on the “5 patient rights”
- Increase medication safety
- Efficiency (electronic data)



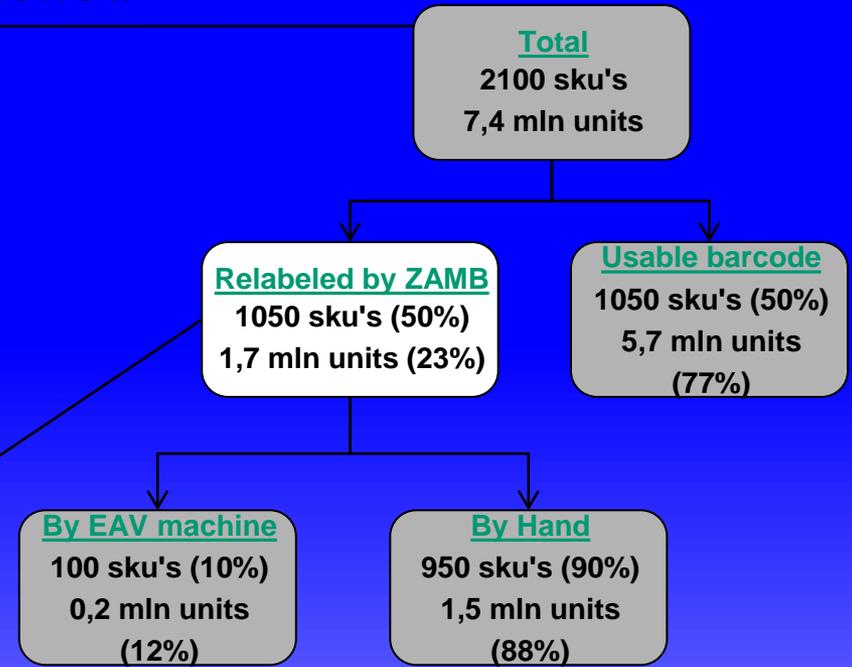
Duragesic 50

Periode	Naam geneesm.	11.00 - 12.00	12.00 - 13.00	13.00 - 14.00	14.00 - 15.00	15.00 - 16.00	16.00 - 17.00	17.00 - 18.00	medicatieplaatje
Van 13/11	Atrovent (zelf)	4 dcl							7 - 8 uur
T/m		sublinguaal	oraal	rectaal	s.c.	stop	i.m.		
Van 14/11	Asasantin 25/200 mgr	2 x 1 caps							
T/m		sublinguaal	oraal	rectaal	s.c.		i.m.		
Van 14/11	Combivent	4 dcl							zakfel 13/11
T/m		sublinguaal	oraal	rectaal	s.c.		i.m.	i.v.	uiterlijk overig
Van 11/11	Diclofenac	3 x 50 mgr							
T/m		sublinguaal	oraal	rectaal	s.c.		i.m.	i.v.	uiterlijk overig
Van 10/11	Duragesic 50 mgr/mgr	1x per 3 dagen							
T/m		sublinguaal	oraal	rectaal	s.c.		i.m.	i.v.	uiterlijk overig
Van 11/11	ferrofumeant	2 x 200 mgr							
T/m		sublinguaal	oraal	rectaal	s.c.		i.m.	i.v.	uiterlijk overig
Van 11/11	Fluonacelline	4 x 1 gr							
T/m		sublinguaal	oraal	rectaal	s.c.		i.m.	i.v.	uiterlijk overig

Figures - Breakdown of barcoded medicines



Figures – Top 10 that needs to be repacked



Omschrijving	# Eenh	%
IPRAMOL 0,5/2,5MG/2,5ML FL	107.955	6%
FRAGMIN 2500IE/0,2ML WWSP	79.037	5%
PARACETAMOL PCH 1000MG ZETP	60.606	4%
FRAGMIN 5000/0,2ML WWSP	44.740	3%
DEXAMETHASON CF 5MG/AMP 1ML	42.294	2%
AMOX/CL SDZ 1G/200MG INJ FL	32.658	2%
LACTULOSE STR PCH 15ML SACH	31.747	2%
AUGMENTIN 500/125MG TABLET	30.310	2%
SUFENTA 0,005MG/ML AMP 2ML	29.152	2%
INJPDR PENICIL.G NA 1MIJL E	26.062	2%



Top 10 – Ipramol (sensitive to light / storage in original package)

Omschrijving	# Eenh	%
IPRAMOL 0,5/2,5MG/2,5ML FL	107.955	6%
FRAGMIN 2500IE/0,2ML WWSP	79.037	5%
PARACETAMOL PCH 1000MG ZETP	60.606	4%
FRAGMIN 5000/0,2ML WWSP	44.740	3%
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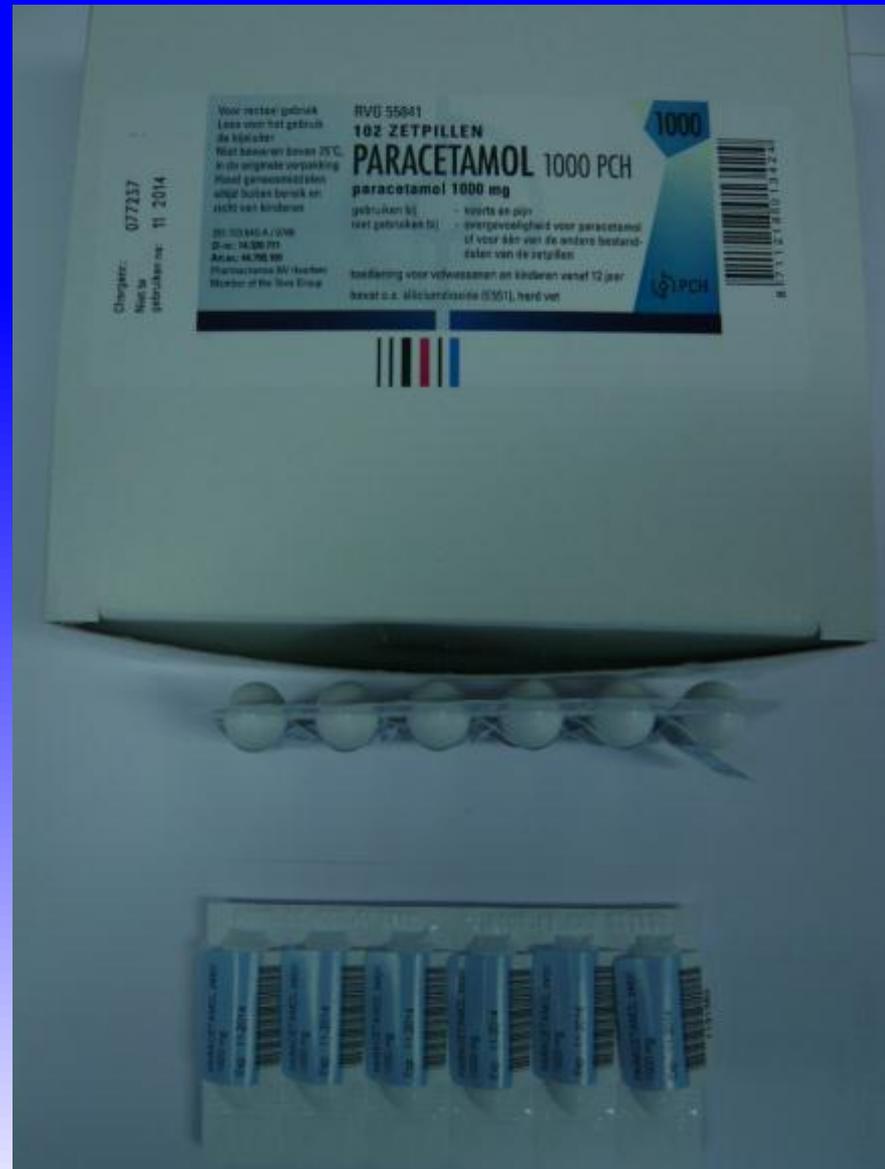
Top 10 - Fragmin

Omschrijving	# Eenh	%
IPRAMOL 0,5/2,5MG/2,5ML FL	107.955	6%
FRAGMIN 2500IE/0,2ML WWSP	79.037	5%
PARACETAMOL PCH 1000MG ZETP	60.606	4%
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AUGMENTIN 500/125MG TABLET	30.310	2%
SUFENTA 0,005MG/ML AMP 2ML	29.152	2%
INJPDR PENICILG NA 1MILJ E	26.062	2%



Top 10 – Paracetamol suppository (difficult to relabel)

Omschrijving	# Eenh	%
IPRAMOL 0,5/2,5MG/2,5ML FL	107.955	6%
FRAGMIN 2500IE/0,2ML WWSP	79.037	5%
PARACETAMOL PCH 1000MG ZETP	60.606	4%
FRAGMIN 5000/0,2ML WWSP	44.740	3%
DEXAMETHASON CF 5MG/AMP 1ML	42.294	2%
AMOX/CL SDZ 1G/200MG INJ FL	32.658	2%
LACTULOSE STR PCH 15ML SACH	31.747	2%
AUGMENTIN 500/125MG TABLET	30.310	2%
SUFENTA 0,005MG/ML AMP 2ML	29.152	2%
INJPDR PENICILG NA 1MILJ E	26.062	2%



Top 10 – Dexamethason ampoule (difficult to relabel)

Omschrijving	# Eenh	%
IPRAMOL 0,5/2,5MG/2,5ML FL	107.955	6%
FRAGMIN 2500IE/0,2ML WWSP	79.037	5%
PARACETAMOL PCH 1000MG ZETP	60.606	4%
FRAGMIN 5000/0,2ML WWSP	44.740	3%
DEXAMETHASON CF 5MG/AMP 1ML	42.294	2%
AMOX/CL SDZ 1G/200MG INJ FL	32.658	2%
LACTULOSE STR PCH 15ML SACH	31.747	2%
AUGMENTIN 500/125MG TABLET	30.310	2%
SUFENTA 0,005MG/ML AMP 2ML	29.152	2%
INJPDR PENICIL G NA 1MILJ E	26.062	2%



Top 10 – Amoxicilline / Clavulaanzuur (non usable barcode)

Omschrijving	# Eenh	%
IPRAMOL 0,5/2,5MG/2,5ML FL	107.955	6%
FRAGMIN 2500IE/0,2ML WWSP	79.037	5%
PARACETAMOL PCH 1000MG ZETP	60.606	4%
FRAGMIN 5000/0,2ML WWSP	44.740	3%
DEXAMETHASON CF 5MG/AMP 1ML	42.294	2%
AMOX/CL SDZ 1G/200MG INJ FL	32.658	2%
LACTULOSE STR PCH 15ML SACH	31.747	2%
AUGMENTIN 500/125MG TABLET	30.310	2%
SUFENTA 0,005MG/ML AMP 2ML	29.152	2%
INJPDR PENICIL G NA 1MIJL E	26.062	2%



Top 10 – Augmentin (aluminum / scattering background)

Omschrijving	# Eenh	%
IPRAMOL 0,5/2,5MG/2,5ML FL	107.955	6%
FRAGMIN 2500IE/0,2ML WWSP	79.037	5%
PARACETAMOL PCH 1000MG ZETP	60.606	4%
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AUGMENTIN 500/125MG TABLET	30.310	2%
SUFENTA 0,005MG/ML AMP 2ML	29.152	2%
INJPDR PENICIL G NA 1MILJ E	26.062	2%



Top 10 – Sufenta (narcotics / storage requirements)

Omschrijving	# Eenh	%
IPRAMOL 0,5/2,5MG/2,5ML FL	107.955	6%
FRAGMIN 2500IE/0,2ML WWSP	79.037	5%
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FRAGMIN 5000/0,2ML WWSP	44.740	3%
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SUFENTA 0,005MG/ML AMP 2ML	29.152	2%
INJPRD PENICIL G NA 1MILJ E	26.062	2%

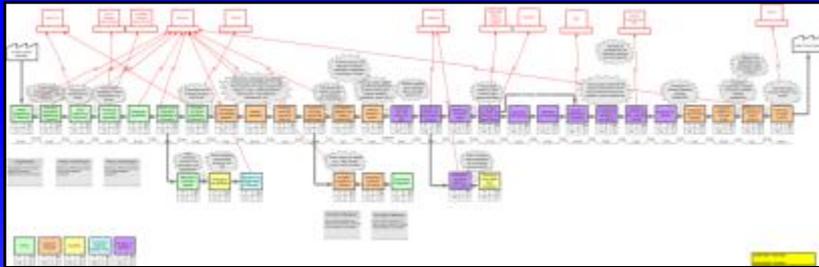


Xeloda – exposure risk (cytostatics)



Relabeling process – leadtime & quality impact

Inbound without BUD



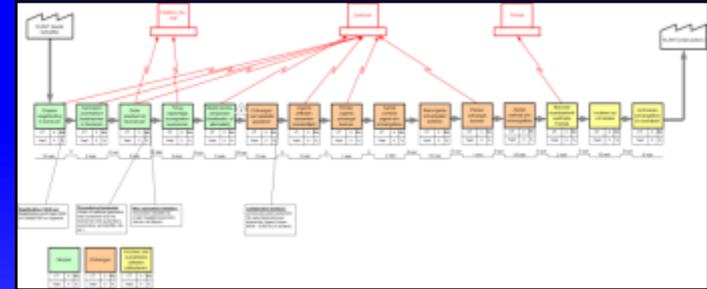
27 process steps

**Process time
P50 = 48 hours**

**First time right
= 76% (*)**



Inbound with BUD



15 process steps

**Process time
P50 = 30 min**

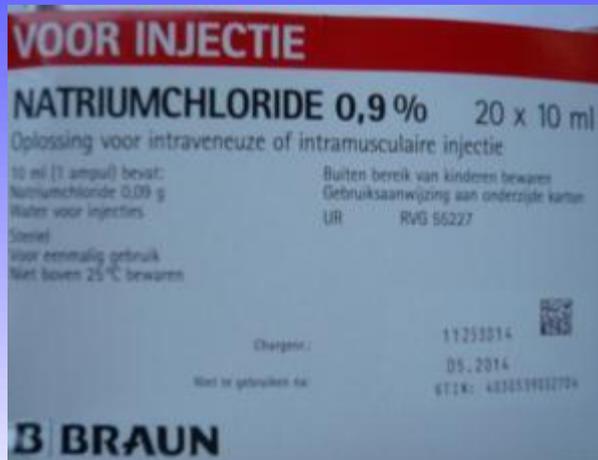
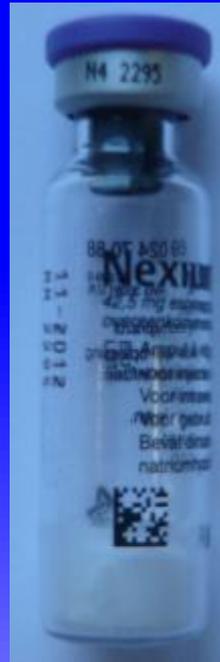
**First time right
= 86% (*)**



(*) assumption that 1% of each step goes wrong => $99\%^{27} = 76\%$ process goes (first time) right



Some examples of recent changes to BUD



- **Recent initiatives**
 - **Barcode symposium 2010, publications, presentation opportunities**
- **Prerequisite at purchasing process**
- **Updated Dutch Guideline - Barcode on Unit Dose (NVZA)**
- **Transformation from linear to datamatrix**
- **Several pilot ideas**



Thanks for your attention!



Questions

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Appendix

Drs. R.T. Pauw
Ziekenhuisapotheker



Twee Steden
ziekenhuis

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