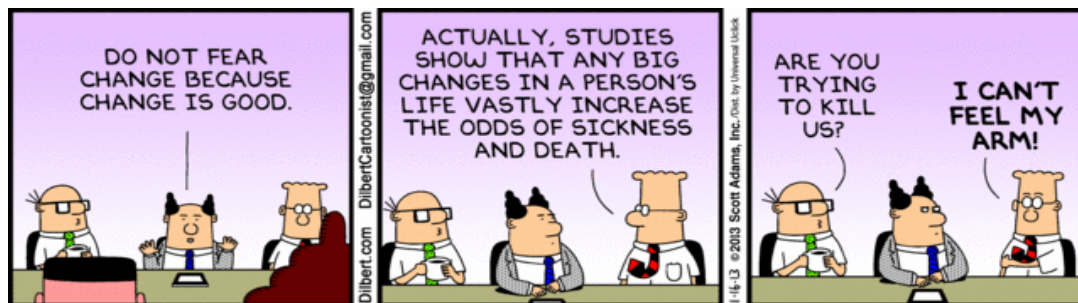


From a structural reform to new hospitals in Denmark

Jonas Hedegaard Knudsen
(Nyt OUH)



Jonas Knudsen

Former CIO of Odense University Hospital (OUH)

Former CIO of the Psychiatric hospitals in The Region of Southern Denmark

Program manager of our EMR implementation in Fyn County

Currently IT manager/CIO in our construction project of New OUH

“Gifted” with the responsibility to engage and be part of the structural reform in Denmark on a regional IT level. A 7 year war that has not ended yet.



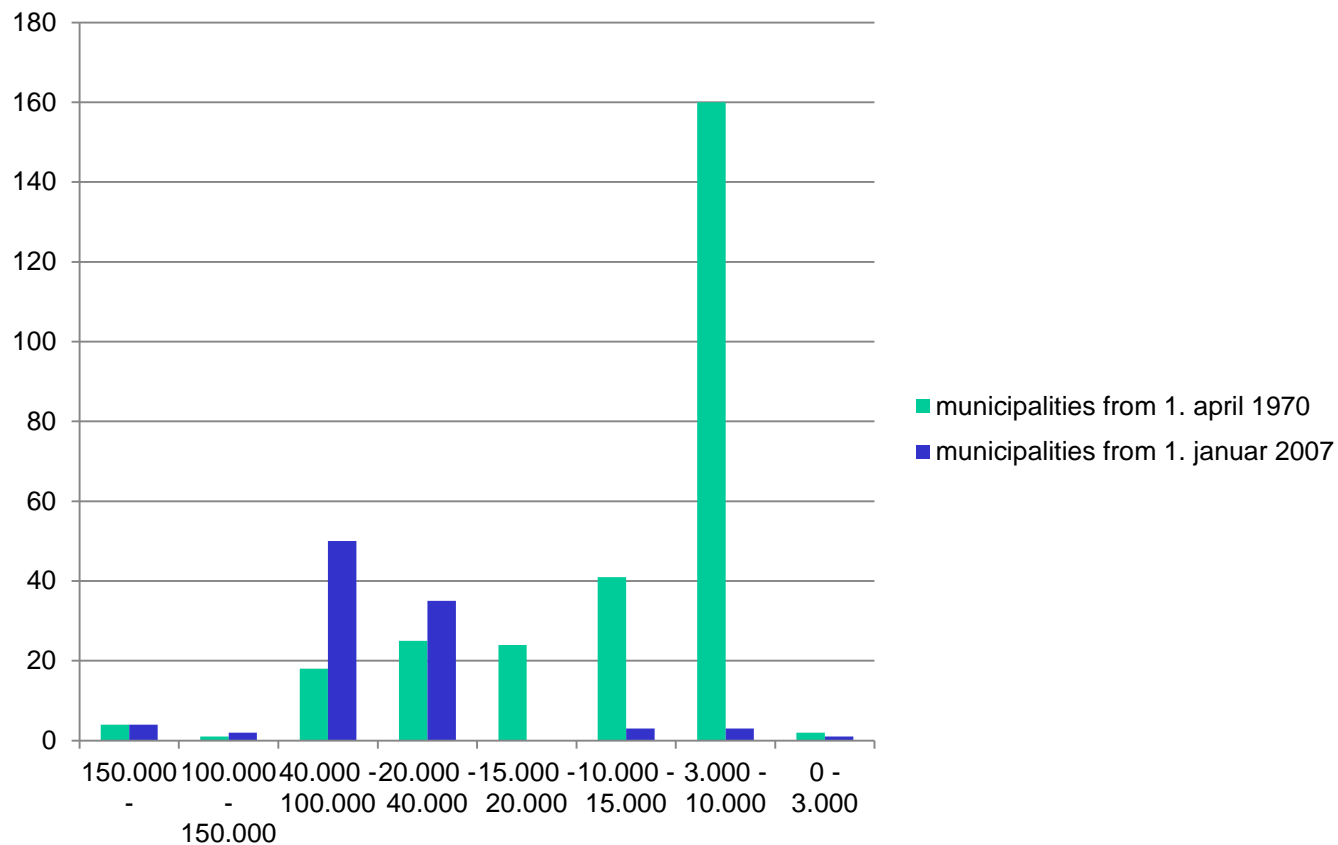
Europe & Denmark



2007 – a structural reform in Denmark

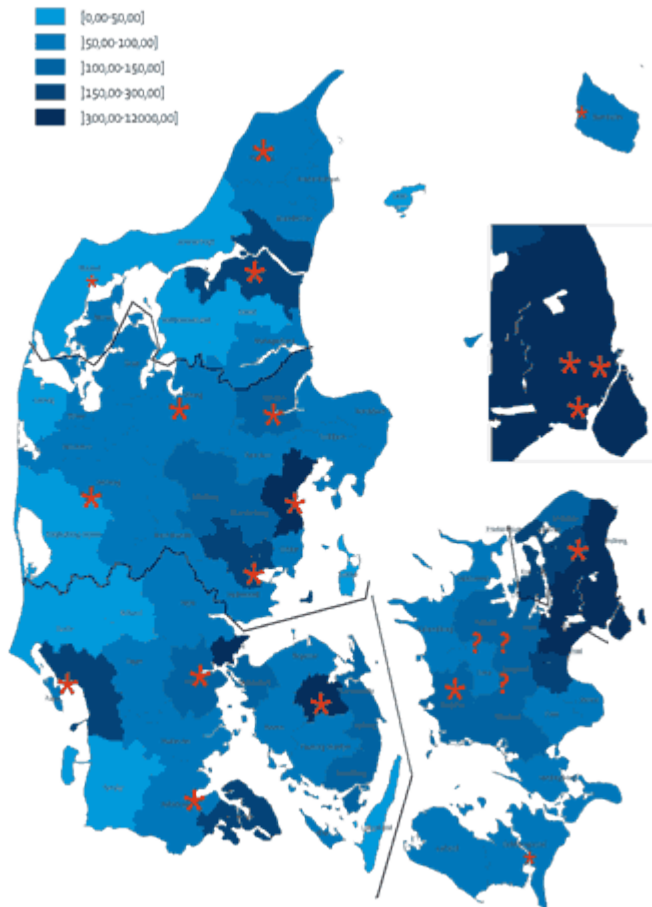
- 271 municipalities was reduced to 98
- 13 Counties was reduced to five regions
- The hospitals are owned and controlled by the regions but are financed by the state and the municipalities
- Regions does not collect taxes
- 80 pct of a region budget goes into healthcare
- Municipalities handles Prevention, homecare, elder service, rehab and they finances 20 of a patients stay in a hospital

From 1970 to 2007



at least 30.000 inhabitants in the municipality

Denmark – 5 regions – less acute hospitals



5,5 mio. Danes



39 hospitals



104.000 FTE

3.600 GP's

Note: Kortet viser placeringen af akutsygehuse. Farvetonerne angiver befolkningstætheden.

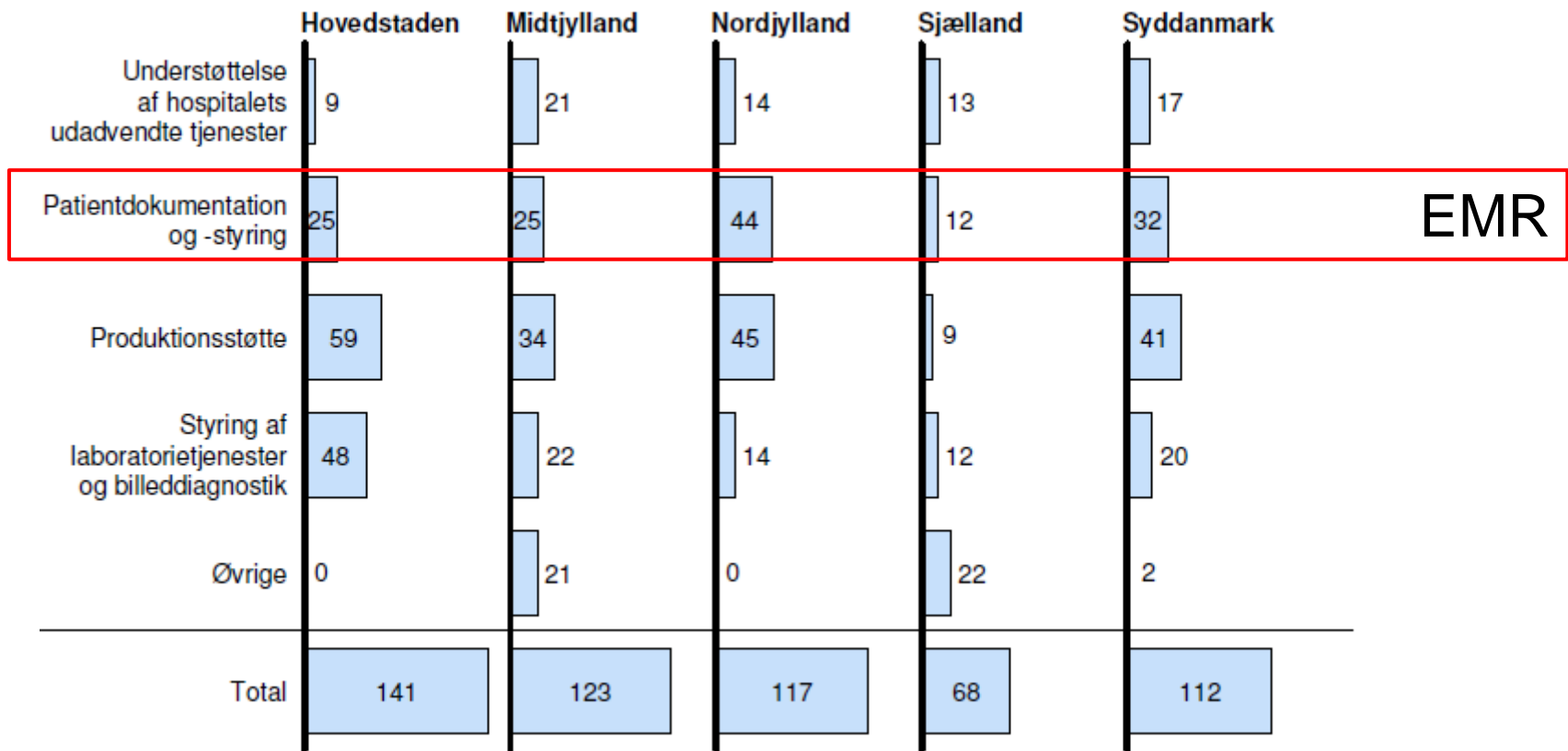
Kilde: Ministeriet for Sundhed og Forebyggelse.

Basic principles of Danish Healthcare

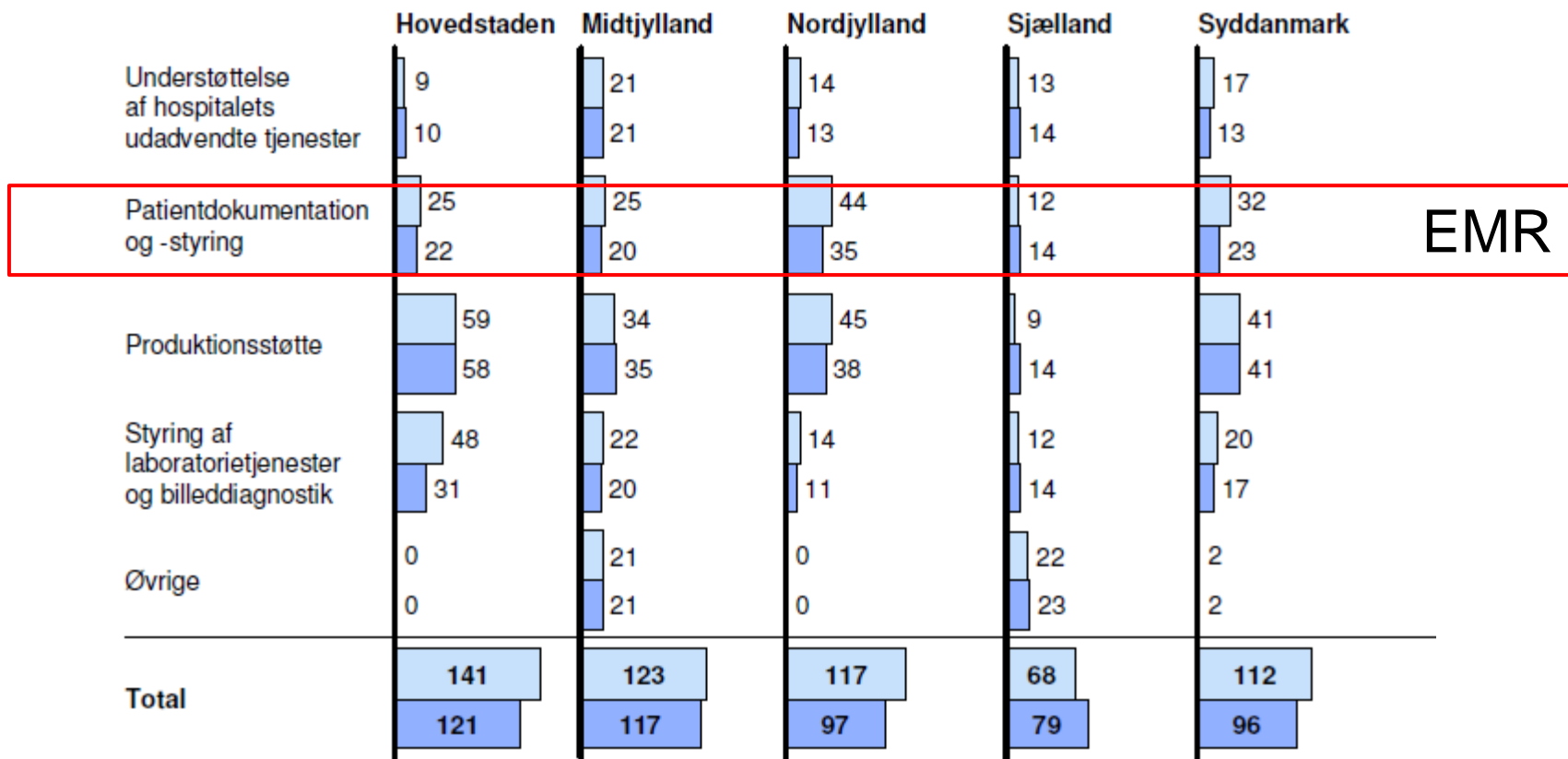
- A public health care system
- Free and equal access for all citizens
- Freedom of choice
- Mainly financed through general taxes
- Decentralized organization
- GP/family doctor as gatekeeper

Amount of Clinical applications in 2009!

- Regions



Planned amount of Clinical applications in 2012!



10

EMR systems – an overview

		EMR							
		Hovedstaden	Midtjylland		Nordjylland		Sjælland	Syddanmark	
		GS/Åben	Det grønne system	Skejby patient-administrative system	S-PAS	P-PAS	Opus Patientforløb	FPAS	GS Classic
Patientadministration		92.560.000 ³ 31.000 Outsourced	29.790.000 4.500 Outsourced	1.100.000 2.500 Århus Uni.hospital Skejby	6.500.000 8.250 Centralt	1.900.000 1.013 Centralt	17.926.250 15.568 Outsourced	4.000.000 7.600 Centralt	4.000.000 3.085 Outsourced
			PAS	Viborg PAS	ThyMors EPJ	IBM IPJ		Opus	
			1.300.000 3.100 Hospitalsenhed Vest	3.400.000 3.200 Regionshospitalet Viborg	5.500.000 500 Outsourced	3.500.000 1.166 Centralt		3.600.000 2.200 Outsourced	
			Opus Journal	Columna Århus EPJ				Cosmic	Medicare
Journalnotat			5.244.307 1.500 Regionshospitalet Horsens	16.100.000 8.300 Centralt				21.600.000 8.200 Outsourced	4.000.000 2.000 Centralt
			Viborg EPJ	Elektra				IPJ	Dicom
			7.500.000 3.300 Regionshospitalet Viborg	3.600.000 1.300 Hospitalsenhed Vest				8.700.000 4.500 Centralt	1.000.000 2.000 Sygehus Sønderjylland
			eJournal					EPJ Notat	Harmoni
			1.650.000 2.800 Outsourced					1.600.000 835 Centralt	1.900.000 2.292 Centralt

War broke out immediately

- 15 datacenters plus all the servers at the clinical departments
 - Reduce to two! Was placed based on the location of the employees!
- A huge amount of different applications with same functionality
- No overview on licenses
- The mix between Regional IT and Local IT
- From centralized Regional IT to decentralized Lead hospitals
- Business or IT driven development?
 - Hospital directors are still fighting
- University hospital (40 pct) is bullying the small
- Implementation or consolidation? Takes time



Strategy

- Inter regional Healthcare architecture
- National Innovation strategy
- LEAD hospitals instead of regional focus
- IT board – processing instead of strategy

- Regional IT strategy, focus on operational level
- LEAD hospitals instead of regional focus – more money!
- Common Regional IT goals – primarily fixed applications
 - Must have digital dictation by 2010
 - Must have one EMR by 2013
 - Must have digital ECG by 2011
 - It support of clinical logistics by 2014

Solution

- Common clinical systems (national)
- Local hospital solutions

- Regional license control
- Common national systems
FMK, Sundhed.dk, Borger.dk, NEMID, e-prescription server
- Consolidating processes (ITIL), architecture (TOGAF) and **application landscape**
- National standards for data exchange

Low impact

High impact

Finance and the 16 big hospital construction projects

- 41.7 billion Danish kroner = 5.5 billion euros
- 60 % from the government and 40 % from the regions
- 16 construction projects got an intermediary commitment on getting the grant
- 11 out of 16 construction projects now have the final commitment on getting the grant from the government
- 22 construction projects financed solely by the regions
- The total conversion of the Danish health care system = dynamic process lasting the next 10-15 years

The 16 hospital construction projects with grant from the danish government

October 2012

DNV-Gødstrup (New Regional Hospital West Jutland) (new build, green field)

Total investment: 3.15 billion DKK
Client consultancy: NIRAS A/S
Full service consultancy: Cura Vita
Gov. financial commitment: Final
Expected commencement: 2012

Regionshospitalet Viborg (extension)

Total investment: 1.15 billion DKK
Client consultancy: Arkitema and Moe & Brødsgaard
Full service consultancy: To be decided at the end of 2012
Gov. financial commitment: Final
Expected commencement: 2013

The New University Hospital in Aarhus (DNU) (new build)

Total investment: 6.35 billion DKK
Client consultancy: NIRAS A/S
Full service consultancy: Rådgivergruppen DNU I/S
Gov. financial commitment: Final
Expected commencement: 2012

Kolding Hospital (extension)

Total investment: 0.9 billion DKK
Client consultancy: Hospitalitet A/S
Full service consultancy: NIRAS, Creo, Schmidt Hammer and Lassen Architects, Balslev GBL
Gov. financial commitment: Final
Expected commencement: 2011

Aabenraa Sygehus (extension)

Total investment: 1.25 billion DKK
Client consultancy: C.F. Møller Architects
Full service consultancy (phase 1): Creo, Aarhus Arkitekter, Alectia, Søren Jensen Rådgivende Ingeniørfirma, Balslev and Oluf Jørgensen A/S
Gov. financial commitment: Final
Expected commencement: 2012

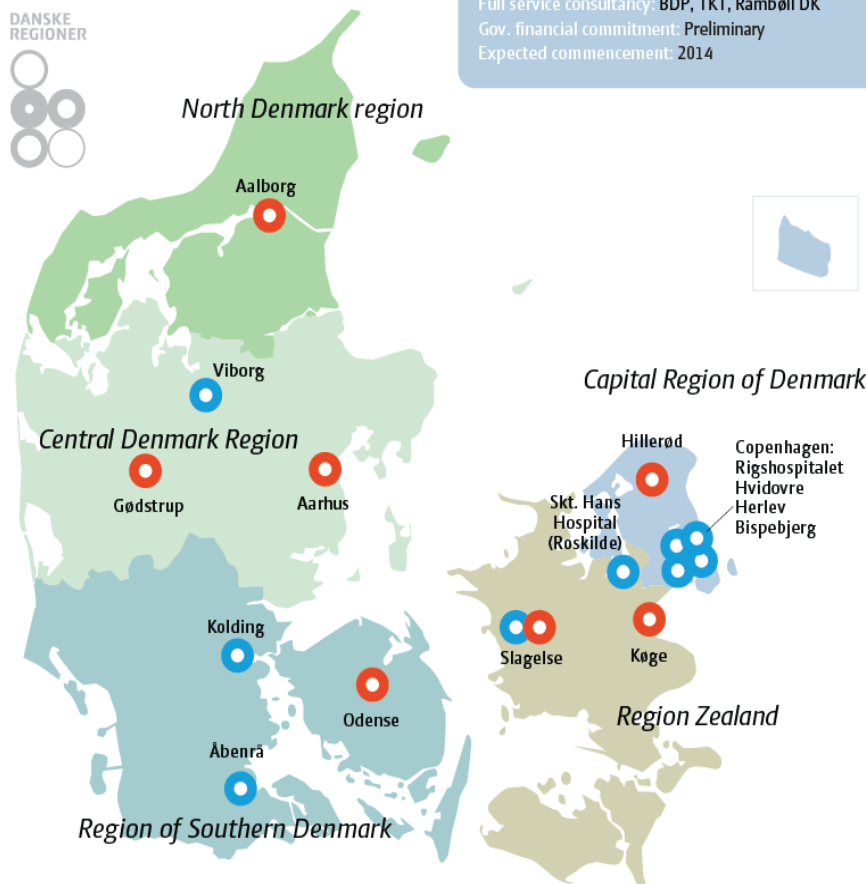
New Odense University Hospital (OUH) (new build, greenfield)

Total investment: 6.3 billion DKK
Client consultancy: C.F. Møller Architects, NIRAS
Full service consultancy: Medic OUH (consortium)
Gov. financial commitment: Final
Expected commencement: 2013

New University Hospital Aalborg (new build, green field)

Total investment: 4.1 billion DKK
Client consultancy: Numerous according to specific tasks (procurement consultancy: Harde Larsen Rådgivende Ingeniører A/S, A/S Hifab Bygherreombud, Poulsen og Partnere Architects A/S)
Full service consultancy: Indigo
Gov. financial commitment: Final
Expected commencement: 2013

DANSKE
REGIONER



Follow the construction projects at
WWW.GODTSYGEHUSBYGGERI.DK

Nyt Hospital Nordsjælland (new build, greenfield)

Total investment: 3.8 billion DKK
Client consultancy: COWI A/S
Full service consultancy: Not decided
Gov. financial commitment: Preliminary
Expected commencement: 2016

Bispebjerg Hospital (extension, modernization)

Total investment: 2.95 billion DKK
Client consultancy: Kuben Management A/S
Full service consultancy: BDP, TKT, Rambøll DK
Gov. financial commitment: Preliminary
Expected commencement: 2014

Copenhagen University Hospital (extension, modernization)

Total investment: 1.85 billion DKK
Client consultancy: NIRAS A/S (Mangor & Nagel, Sintef)
Full service consultancy: Aarhus Arkitekterne A/S
Gov. financial commitment: Final
Expected commencement: 2014

Herlev Hospital (extension, modernization)

Total investment: 2.25 billion DKK
Client consultancy: NIRAS A/S (Mangor & Nagel, Sintef)
Full service consultancy: Henning Larsen Architects, Friis & Moltke, Orbicon Leif Hansen, Norconsult, NNE Pharmaplan, Brunsgaard & Laursen and SLA
Gov. financial commitment: Final
Expected commencement: 2014

Hvidovre Hospital (extension, modernization)

Total investment: 1.45 billion DKK
Client consultancy: COWI
Full service consultancy: Not decided
Gov. financial commitment: Preliminary
Expected commencement: 2014

Sct. Hans Psychiatric Hospital (modernization and extension)

Total investment: 0.55 billion DKK
Client consultancy: NIRAS A/S
Full service consultancy: Not decided
Gov. financial commitment: Final
Expected commencement: 2014

Psychiatric Hospital Slagelse (new build, greenfield)

Total investment: 1.05 billion DKK
Client consultancy: Kuben Management A/S
Full service consultancy: Karlsson arkitekter, Vilhelm Lauritzen Arkitekter, Signal Arkitekter, Schønher Moe & Brødsgaard, NNE Pharmaplan, Cenergia Energy Consultants
Gov. financial commitment: Final
Expected commencement: 2012

Slagelse Hospital (new emergency ward)

Total investment: 0.3 billion DKK
Client consultancy: COWI A/S
Full service consultancy: Rambøll, Friis & Moltke, Henning Larsen Architects, Brunsgaard & Laursen, SLA Landskabsarkitekter and NNE Pharmaplan
Gov. financial commitment: Final
Expected commencement: 2011

Koge Hospital (new build)

Total investment: 4.0 billion DKK
Client consultancy: Bascon A/S
Full service consultancy: Not decided
Gov. financial commitment: Preliminary
Expected commencement: 2015

Locked total frames

The total frame for the building projects is locked

- Effective OP usage must be 7 hours/day 245 days/year
- 8 pct increase in affectivity
- 20-30 pct less beds

Have to build exactly the number of square meters that is assumed in the commitment from the government

- 20-25 % to IT, apparatus, equipment is tied to a specific definition – what does that mean?
 - 70 % of this frame has to be used on patient centred equipment and digital solutions

The Digital elements of New OUH must be omnipresent and secure so that New OUH can realise its vision and explore the knowledge network.

VISION

For all

To all

Between all and everything

Everywhere

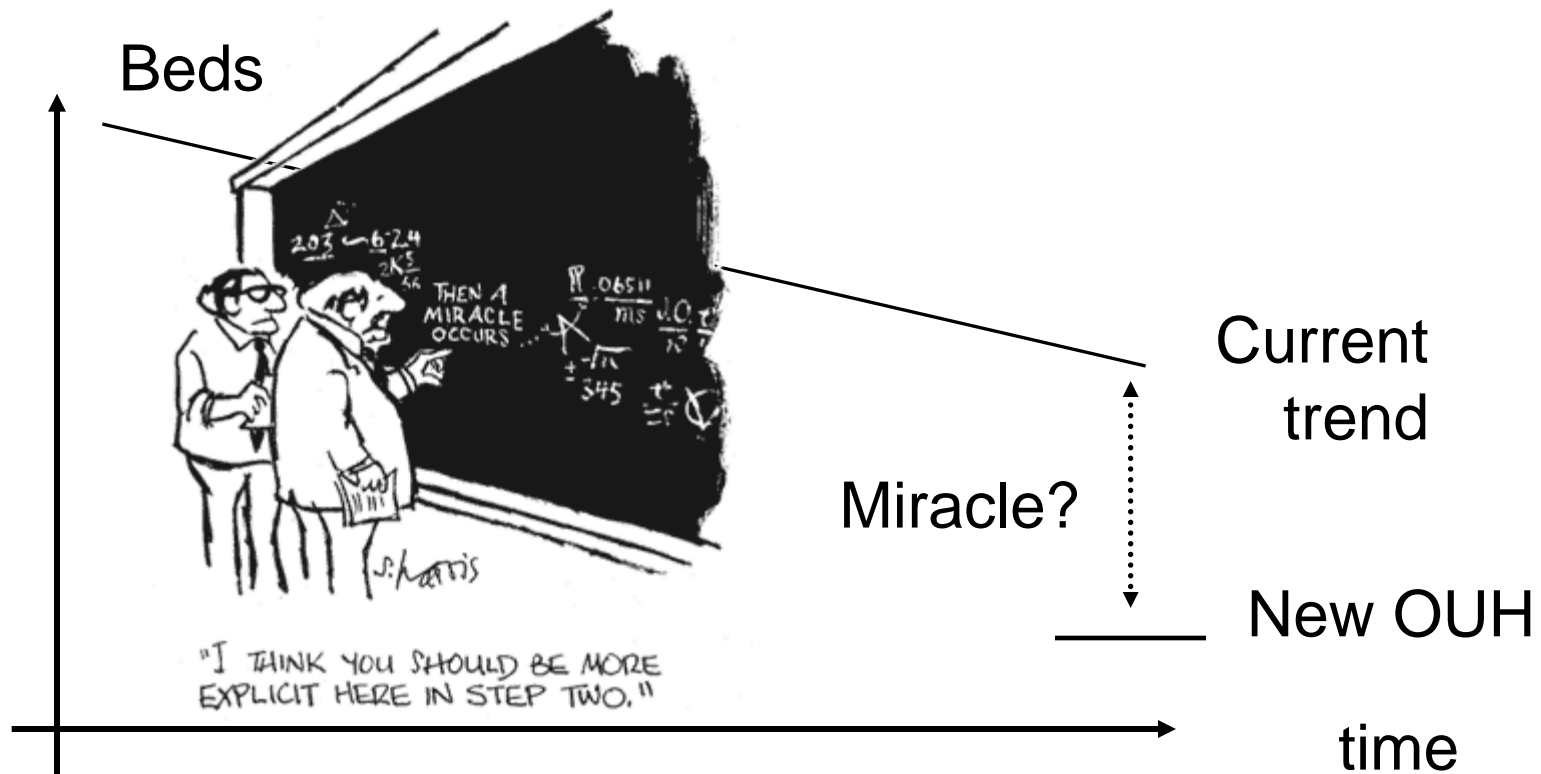
Always

17

We cannot make a huge change.

The IT we have at the time we move, is the IT that we will bring. IT towards the new hospital is developed as a natural part of the region at our normal speed.

The Challenge



We are looking for new technology and infrastructure – Strategic goals before technology?.

**Arthur Summerfield
(Postmaster general)**

(17 March 1899 – 26 April 1972)

Speed

Precision

Stability

***“Before man reaches the moon, your mail will be delivered within hours from New York to Australia by guided missiles. We stand on the threshold of rocket mail.”
(1959)***



Nyt OUH



Read about the Digital Hospital here:
kliniskit.blogspot.dk &
<http://www.danishhospitalconstruction.com/>