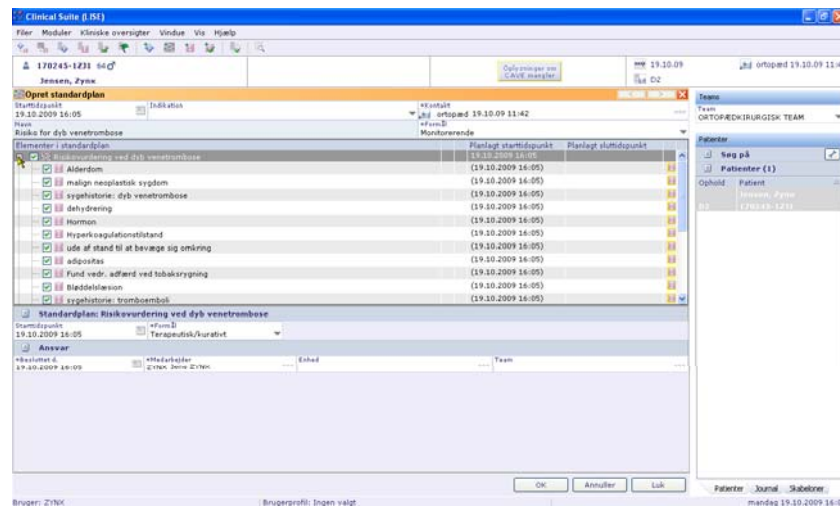
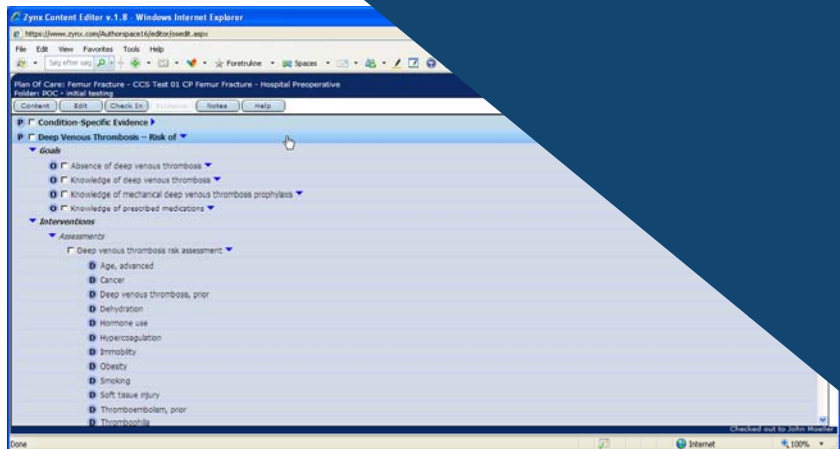




Brug af evidensbaserede standardplaner et Proof-of-Concept

E-Sundhedsobservatoriet
21. Oktober 2009

*John Møller-Jensen
Læge, Chefarkitekt*



Erfaringer fra en foranalyse

- **Fra et projekt mellem CSC Scandihealth og Zynx Health**
- **Mhp at vurderer anvendelse af standardplaner fra et andet system (Zynx Health) i et dansk sundheds-it-system (CSC Clinical Suite)**
 - Vurdering af indholdet
 - Tilpasning fra US til DK
 - Anvendt sundhedsterminologi
 - Sammenhæng til dataregistrering i klinikken
 - Upload, aktivering og vedligehold i et produktionssystem

Forberedelser inden klinikerne kan anvende systemet

Findes der en genvej til at få standardplaner ind i mit EPJ-system?

Ja, hvis man "tør" anvende **PFE** (**P**roudly **F**ound **E**lsewhere)
og ikke er "hæmmet" af **NIH** (**N**ot **I**nvented **H**ere)

Hvad bør jeg overveje hvis jeg ønsker at anvende ”fremmede standardplaner”?

- Hvad har vi brug for?
- Hvornår skal vi anvende standardplanerne?
- Hvem skal verificere/godkende standardplanerne?
- Er standardplanerne evidensbaserede?
- Har vi selv noget der er ligeså godt?
- Kan standardplanerne vedligeholdes på en rationel måde?
- Er der andre bonuseffekter?

Hvad behøver jeg ikke også gøre (hvad har andre gjort)?

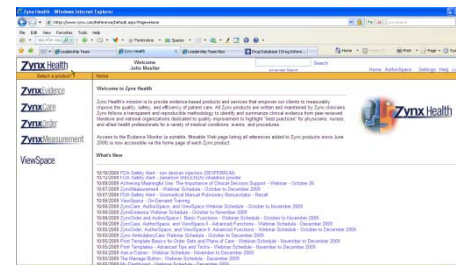
- At genopfinde hjulet
- At finde al terminologi
- Kontrollere evidens

Zynx Health?

- Zynx Health er et amerikansk firma erhvervet af Hearst Corporation marts 2004.
- Zynx Health er en del af the Hearst Business Media division som også omfatter Map of Medicine og First DataBank.

The screenshot shows the Zynx Health website homepage. At the top left is the Zynx Health logo. To its right, it says "Welcome John Moeller". Further right is a search bar with "Advanced Search" and "Search" buttons. On the far right are links for "Home", "AuthorSpace", "Settings", "Help", and "Log out". Below the header is a navigation bar with "Select a product" and "Home". The main content area is divided into a left sidebar and a main content area. The sidebar contains links for "ZynxEvidence", "ZynxCare", "ZynxOrder", "ZynxMeasurement", and "ViewSpace". The main content area has a "Welcome to Zynx Health" section with a mission statement, followed by a section titled "Access to the Evidence Monitor" and a "What's New" section listing various FDA safety alerts and webinar schedules from 2009. At the bottom, there is a copyright notice: "© 2009 Zynx Health Incorporated. All rights reserved." and a "Disclaimer" link.

Zynx Health



- > 1,700 hospitaler i USA anvender evidence-baseret beslutningsstøtte fra Zynx Health.
 - små uafhængige hospitaler - store sundhedsorganisationer,
 - akademiske som non-akademiske organisationer
 - hospitaler med eller uden sundheds-it.
- Zynx's kunder tager sig hvert år af mere end 50% af alle indlagte patienter i USA
- Zynx protefølje (klinisk beslutningsstøtte) omfatter standardplaner (physician order sets, nursing and interdisciplinary plans of care), advarsler, struktureret dokumentation og reference indhold.

<http://www.zynxhealth.com/MainNav/AboutZynx/tabid/62/Default.aspx>

Content Modules

- ZynxEvidence indeholder mere end 145 områder der dækker en stor del af tilstande og procedurer på indlagte patienter.
- Evidensen overvåges og opdateres løbende af et ekspert panel
- Der er først og fremmest fokuseret på det mest almindelige

- Order Sets og Care Plans kan lokalt tilpasses
- Zynx Health er også et Content Management System, der tillader kontrollerede review processer af foreslåede standardplaner inden de godkendes til anvendelse i organisationen

CSC Clinical Suite

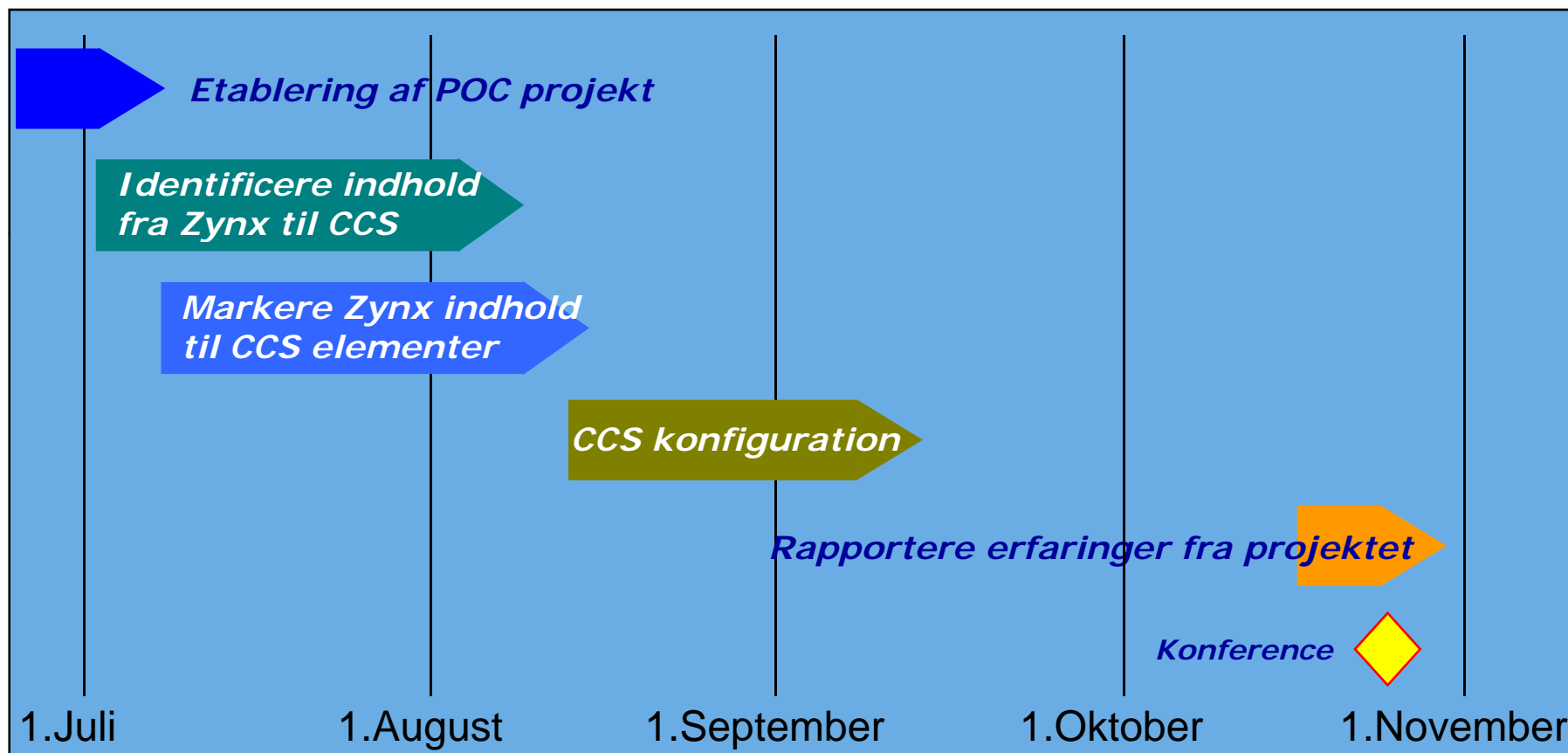
The screenshot shows the CSC Clinical Suite (LISE) interface. The main window displays patient information for Jensen, Zynx (ID: 170245-12J1, 64 years old, male). The interface includes a menu bar (Filer, Moduler, Kliniske oversigter, Vindue, Vis, Hjælp), a toolbar, and a status bar. A dialog box titled "Opret standardplan" is open, displaying a list of standard plans. The list has columns for "Ophold" and "Patient". The patient information is repeated in the list.

Ophold	Patient
D2	Jensen, Zynx 170245-12J1

At the bottom of the dialog box, there are buttons for "OK", "Annuller", and "Luk". The status bar at the bottom of the application shows "Bruger: ZYNX", "Brugerprofil: Ingen valgt", and the date "mandag 19.10.2009 16:05".

- Proces understøttende sundhed-it-system
- Indhold kan konfigureres bl.a.:
 - Resultat- og notatskabeloner
 - Interventionskabeloner (interventionssæt)
 - Standardplan skabeloner

Aktiviteter under projektet



Hvad viste vi inden

- Zynx havde et struktureret kodet indhold der er blevet brugt (> version 1!)
- Opdeling mellem læge ordinationer (Order sets) og sygeplejeaktiviteter (Care Plans) [Men de kan mixes]
- Indholdet i Zynx har et niveau der svarer til Interventioner/interventionssæt/standardplaner i CCS

Hvad erfarede vi

- De enkelte Odrer Sets/ Care Plans var omfangsrige og detaljerede
 - Fx Care plan ” Femur Fracture - Hospital Preoperative” har 745 linier
- Der var ikke meget ”typisk amerikansk” over indholdet
- Zynx Health’s standardplaner supplerer Map of Medicine forløbsbeskrivelser
- SCT er anvendt i Zynx Health, men kan kun findes til ~30% af indholdet, så der er forsat en del ”lokale” koder

Identificere Zynx indhold for import til CCS

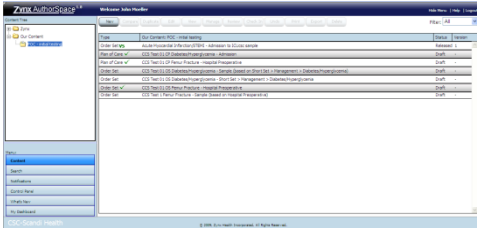
- To terapeutiske områder
 - Femur frakturer (1. prioritet)
 - Diabetes Mellitus (2. prioritet)
- For område finde:
 - En Zynx Order Set og
 - En Zynx Care Plan
- Markere indhold i Zynx filer som er kandidater for brug i CCS inklusiv notation af på hvilket niveau indholdet foreslås anvendt i CCS ((I) Intervention, (IS) Intervention Set, (IP) Intervention Plan)
- Markeringen skete i et Excel regneark efter eksport af indhold fra Zynx

Hvad valgte vi at gøre

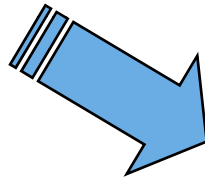
- Efter devicen "Keep it simple"
 - Undlod foreslået lægemiddelbehandling
 - Undlod at anvende regler, mål og advarsler (reminders)
 - Undlod at overføre evidens markeringen
- Fokuserede på aktiviteter
- Tog kun et udsnit fra "CP Femur Fracture - Hospital Preoperative"
 - Nok til et Proof-of-Concept (52 af 775 linier)
- Besluttede hvorvidt aktiviteten skulle udtrykkes som hhv.
 - Intervention
 - Interventionssæt
 - Delstandardplan
- Anvende DK oversættelsen af SCT der hvor der fandtes en SCT kode i Zynx (17 af 52) for resten blev der brugt egne lokale koder (35 af 52)

Overførsel – fra Zynx til CCS - Principskitse

Zynx (AuthorSpace)



Content Management



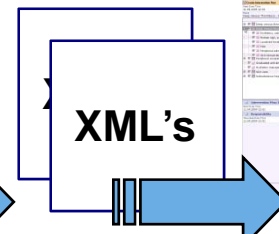
Inden telefonkonference
14. september 2009

CSC Excel

Medical Category		Problem	Addressed	Problem Date	CCS Element	By the CCS	Notes
		Emergency assessment finding					Emergency assessment finding
		Emergency assessment finding					Emergency assessment finding
		Emergency assessment finding					Emergency assessment finding
		Emergency assessment finding					Emergency assessment finding
		Emergency assessment finding					Emergency assessment finding
		Emergency assessment finding					Emergency assessment finding
		Emergency assessment finding					Emergency assessment finding
		Emergency assessment finding					Emergency assessment finding
		Emergency assessment finding					Emergency assessment finding

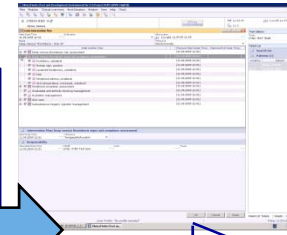
Emergency assessment finding	Emergency assessment finding	Emergency assessment finding	Emergency assessment finding
Emergency assessment finding	Emergency assessment finding	Emergency assessment finding	Emergency assessment finding
Emergency assessment finding	Emergency assessment finding	Emergency assessment finding	Emergency assessment finding
Emergency assessment finding	Emergency assessment finding	Emergency assessment finding	Emergency assessment finding
Emergency assessment finding	Emergency assessment finding	Emergency assessment finding	Emergency assessment finding
Emergency assessment finding	Emergency assessment finding	Emergency assessment finding	Emergency assessment finding
Emergency assessment finding	Emergency assessment finding	Emergency assessment finding	Emergency assessment finding
Emergency assessment finding	Emergency assessment finding	Emergency assessment finding	Emergency assessment finding
Emergency assessment finding	Emergency assessment finding	Emergency assessment finding	Emergency assessment finding
Emergency assessment finding	Emergency assessment finding	Emergency assessment finding	Emergency assessment finding

Markere CCS Element

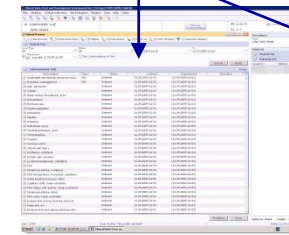


Konfiguration

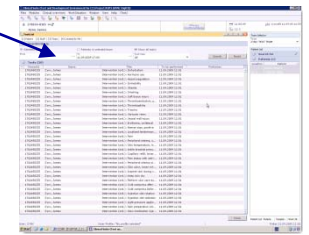
CSC Clinical Suite



Standardplan



Interventionsliste



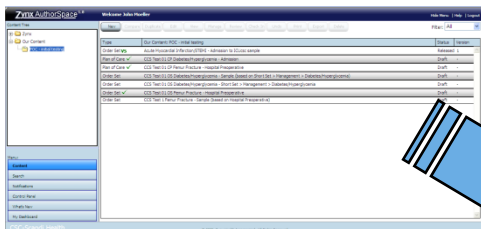
Opgaveliste

Hvad brugeren kan se

Etc.

Overførsel – fra Zynx til CCS - Principskitse

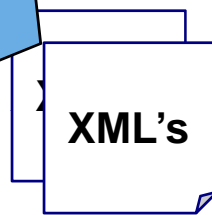
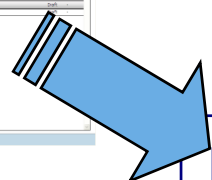
Zynx (AuthorSpace)



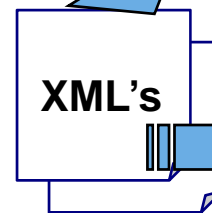
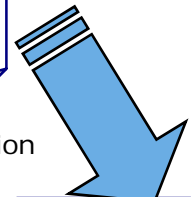
Content Management

Markere CCS Elementer

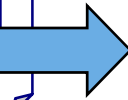
Efter den 14. September 2009
Håbede vi!



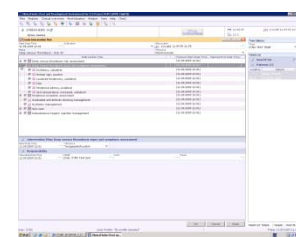
1. Konfiguration



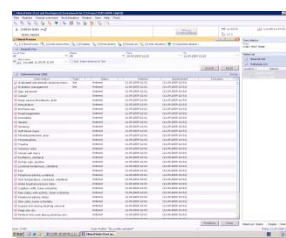
2. Konfiguration
Fx. Lokal tilpasning
af Standardplaner



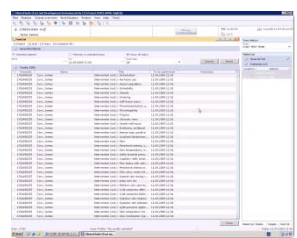
CSC Clinical Suite



Standardplan



Interventionsliste



Opgaveliste

Hvad brugeren kan se

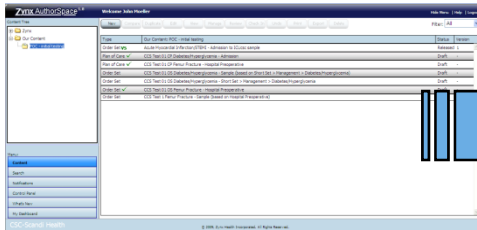
Etc.



Overførsel – fra Zynx til CCS og tilbage - Principskitse

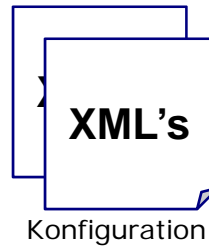
Zynx (AuthorSpace)

CSC Excel



Content Management

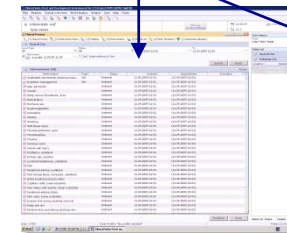
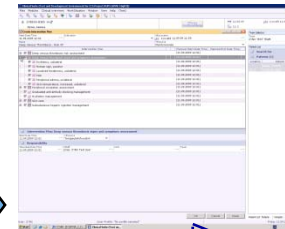
Markere CCS Element



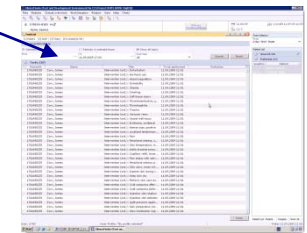
Efter telefonkonference
14. september 2009

CSC Clinical Suite

Standardplan



Interventionsliste



Opgaveliste

Hvad brugeren kan se

Etc.

Zynx Content Editor

Plan Of Care: Femur Fracture - CCS Test 01 CP Femur Fracture - Hospital Preoperative
Folder: POC - initial testing

Content Edit Check In Evidence Notes Help

Condition-Specific Evidence

Deep Venous Thrombosis - Risk of

Goals

- Absence of deep venous thrombosis
- Knowledge of deep venous thrombosis
- Knowledge of mechanical deep venous thrombosis prophylaxis
- Knowledge of prescribed medications

Interventions

Assessments

- Deep venous thrombosis risk assessment
 - Age, advanced
 - Cancer
 - Deep venous thrombosis, prior
 - Dehydration
 - Hormone use
 - Hypercoagulation
 - Immobility
 - Obesity
 - Smoking
 - Soft tissue injury
 - Thromboembolism, prior
 - Thrombophilia

Herfra kan der eksporteres

Checked out to John Moeller

Done

CCS Regnearket

Her kan struktur i CCS besluttes

1 CCS - Zynx Integration						
2 <CCS Test 01 CP Femur Fracture - Hospital Preoperative>						
3						
4	Revision	7				
5						HPCT's
						CCS Element To be used
6	Clinical Category	Clinical Subcategory	Orders	External Description	External ID	
22			Deep venous thrombosis risk assessment			IP
			Age, advanced (assessment finding)	Old-age	49808004	I
23			Cancer (assessment finding)	Malignant neoplastic disease	363346000	I
24			Deep venous thrombosis, prior (assessment finding)	H/O: Deep Vein Thrombosis	161508001	I
25			Dehydration (assessment finding)	Dehydration	34095006	I
26			Hormone use (assessment finding)	Hormone	87568004	I
27			Hypercoagulation (assessment finding)	Hypercoagulability state	76612001	I
28			Immobility (assessment finding)	Unable to mobilize	302043000	I
29			Obesity (assessment finding)	Obesity	414916001	I
30			Smoking (assessment finding)	Tobacco smoking behavior - finding	365981007	I
31			Soft tissue injury (assessment finding)	Soft tissue injury	282026002	I
32			Thromboembolism, prior (assessment finding)	H/O: thromboembolism	266996004	I

Standardplanen i CCS

The screenshot displays the 'Clinical Suite (LISE)' application window. At the top, the patient information is shown: ID 170245-1231, age 64, male, name Jensen, Zynx. The date is 19.10.09 and the time is 11:42. The main area is titled 'Opret standardplan' (Create standard plan) and shows a form for 'Risiko for dyb venetrombose' (Risk of deep vein thrombosis). The form includes fields for start time (19.10.2009 16:05), contact (ortopæd 19.10.09 11:42), and purpose (Monitorende). A table lists various risk factors with checkboxes and planned start times:

Elementer i standardplan	Planlagt starttidspunkt	Planlagt sluttidspunkt
<input checked="" type="checkbox"/> Risikovurdering ved dyb venetrombose	19.10.2009 16:05	
<input checked="" type="checkbox"/> Alderdom	(19.10.2009 16:05)	
<input checked="" type="checkbox"/> malign neoplastisk sygdom	(19.10.2009 16:05)	
<input checked="" type="checkbox"/> sygehistorie: dyb venetrombose	(19.10.2009 16:05)	
<input checked="" type="checkbox"/> dehydrering	(19.10.2009 16:05)	
<input checked="" type="checkbox"/> Hormon	(19.10.2009 16:05)	
<input checked="" type="checkbox"/> Hyperkoagulationstilstand	(19.10.2009 16:05)	
<input checked="" type="checkbox"/> ude af stand til at bevæge sig omkring	(19.10.2009 16:05)	
<input checked="" type="checkbox"/> adipositas	(19.10.2009 16:05)	
<input checked="" type="checkbox"/> Fund vedr. adfærd ved tobaksrygning	(19.10.2009 16:05)	
<input checked="" type="checkbox"/> Bløddelslæsion	(19.10.2009 16:05)	
<input checked="" type="checkbox"/> sygehistorie: tromboemboli	(19.10.2009 16:05)	

Below the table, the 'Standardplan: Risikovurdering ved dyb venetrombose' section shows the start time (19.10.2009 16:05) and purpose (Terapeutisk/kurativt). The 'Ansvar' (Responsibility) section shows the decision date (19.10.2009 16:05) and the responsible person (ZYNX Jens ZYNX). A yellow banner at the bottom of the window reads: 'Denne standardplan kan klinikeren anvende' (This standard plan can be used by the clinician). The interface also includes a 'Patienter' panel on the right showing the patient's name and ID, and a status bar at the bottom indicating the user is ZYNX and the date is Monday, 19.10.2009 16:05.

Transformationen

Det er ikke indviklet!

▼ Interventions
▼ Assessments
▢ Deep venous thrombosis risk assessment ▼
D Age, advanced
D Cancer
D Deep venous thrombosis, prior
D Dehydration
D Hormone use
D Hypercoagulation
D Immobility
D Obesity
D Smoking
D Soft tissue injury
D Thromboembolism, prior
D Thrombophilia

Zynx Care Plan

Deep venous thrombosis risk assessment
Age, advanced (assessment finding)
Cancer (assessment finding)
Deep venous thrombosis, prior (assessment finding)
Dehydration (assessment finding)
Hormone use (assessment finding)
Hypercoagulation (assessment finding)
Immobility (assessment finding)
Obesity (assessment finding)
Smoking (assessment finding)
Soft tissue injury (assessment finding)
Thromboembolism, prior (assessment finding)

Mellemregning

Navn
Risiko for dyb venetrombose
Elementer i standardplan
☑ Risikovurdering ved dyb venetrombose
☑ Alderdom
☑ malign neoplastisk sygdom
☑ sygehistorie: dyb venetrombose
☑ dehydrering
☑ Hormon
☑ Hyperkoagulationstilstand
☑ ude af stand til at bevæge sig omkring
☑ adipositas
☑ Fund vedr. adfærd ved tobaksrygning
☑ Bløddelslæsion
☑ sygehistorie: tromboemboli

CCS Standardplan

I have a dream ...

Zynx Order Set

Zynx Care Plan

Zynx – CCS
fortolker

CCS Intervention Plan Template

Så vil det kunne gå hurtigere

Perspektivering

- Zynx Order Set og Care Plans burde kunne bruges i DK
 - Fremskyde fremtagelse af indhold i standardplaner
 - Anvendelse af SCT vil være en fordel (vil medvirke til kvalificering af indholdet i SCT)
- Har potentialet for evidens baseret og reproducerbar vedligehold
- Har allerede fokus på de områder der dækker hovedparten af aktiviteterne på indlagte patienter
- Kan tilpasses lokalt og kan implementeres på flere måder

- **Findes der en genvej til at få standardplaner ind i mit EPJ-system?**

- Ja, hvis man ”tør” anvende Proudly Found Elsewhere

PFE

- **Hvad bør jeg overveje hvis jeg ønsker at anvende ”fremmede standardplaner”?**

- Hvad har vi brug for?

- Hvornår skal vi anvende standardplanerne?

- Hvem skal verificere/godkende standardplanerne?

Organisering
Kompetence

- **Hvad behøver jeg ikke også gøre (hvad har andre gjort)?**

- At genopfinde hjulet

- At finde al terminologi

- Kontrollere evidens

PFE

Hvis du ønsker at vide eller se mere så kig ud til CSC's stand

- Vi har besøg fra Zynx Health i dag (og i aften)



Kimberley Denney
International Sales



Gregory Dorn, MD
Chief Operating Officer