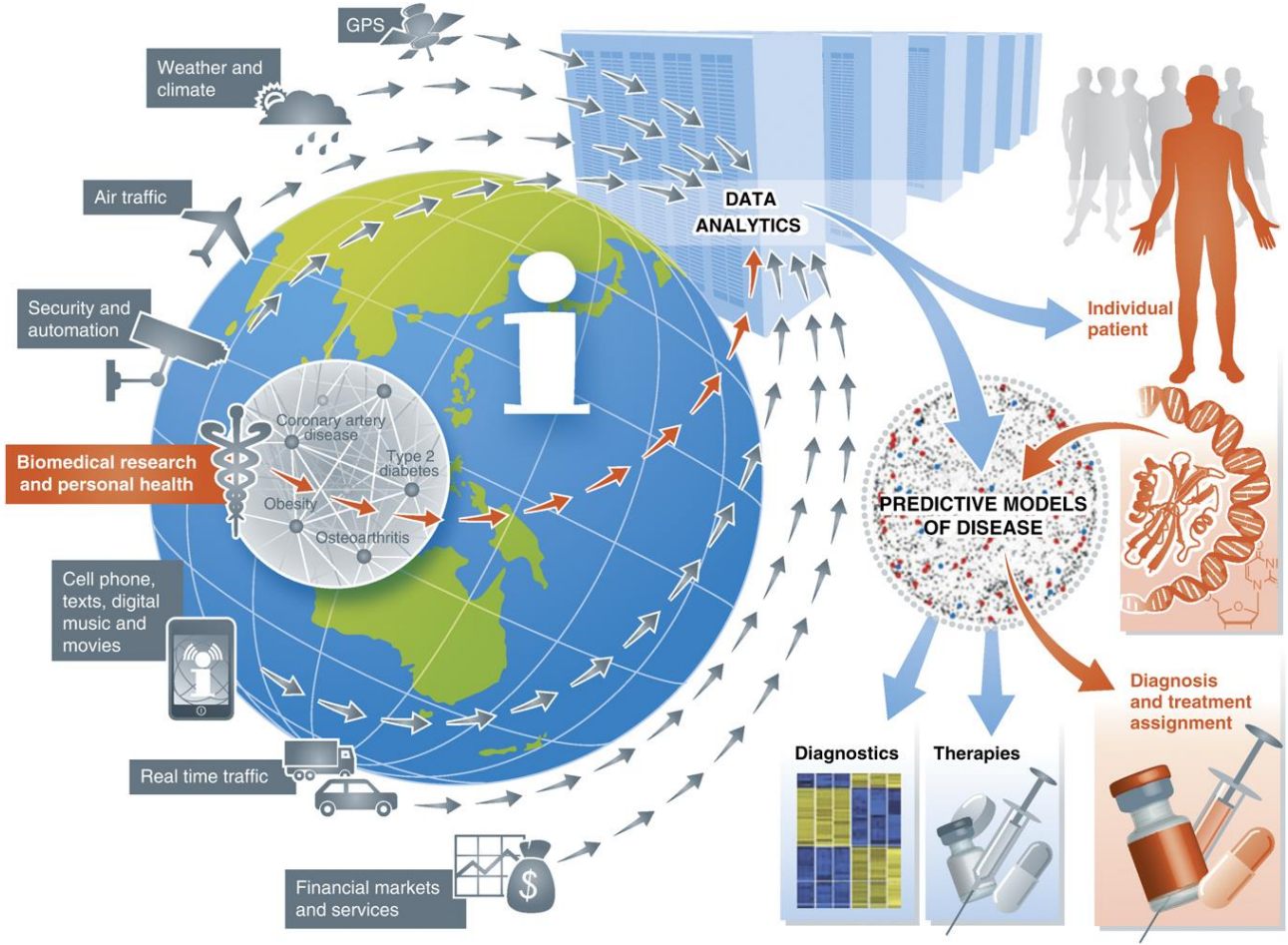
AI og Primærsektoren

Jens Søndergaard, Professor, forskningsleder, IST - Almen Praksis, Syddansk Universitet

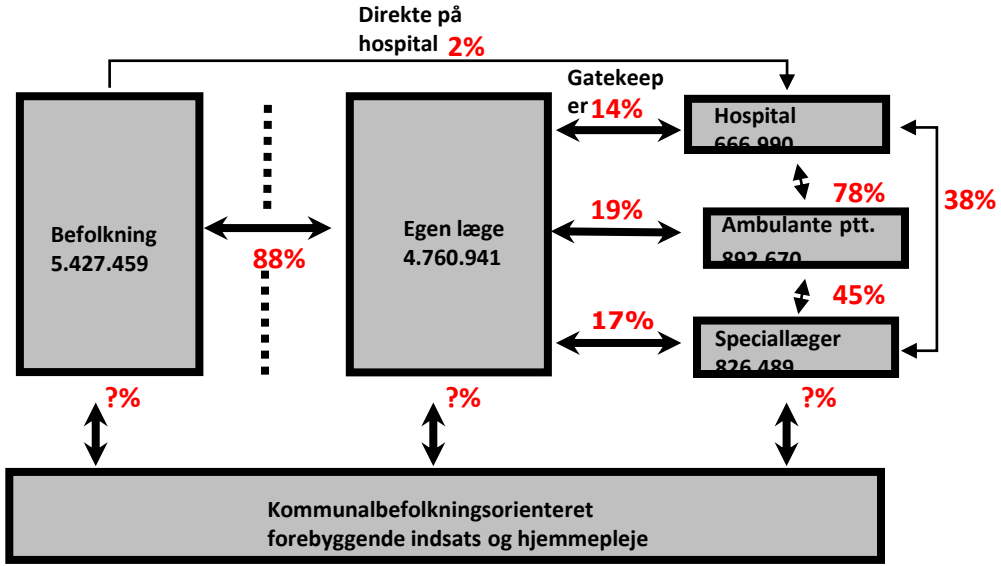
Præsentation i forbindelse med vidensdeling på
'Nordisk dag for AI og Innovation i Health Care' afholdt 28. april 2022.

Denne præsentation er godkendt for vidensdeling.
Alle rettigheder er reserveret de retmæssige indehavere af ophavsretten.

Oplægsholder og SAS Institute har bidraget i denne videndeling og fraskriver sig imidlertid ethvert ansvar og erstatningsansvar for så vidt angår materialet.

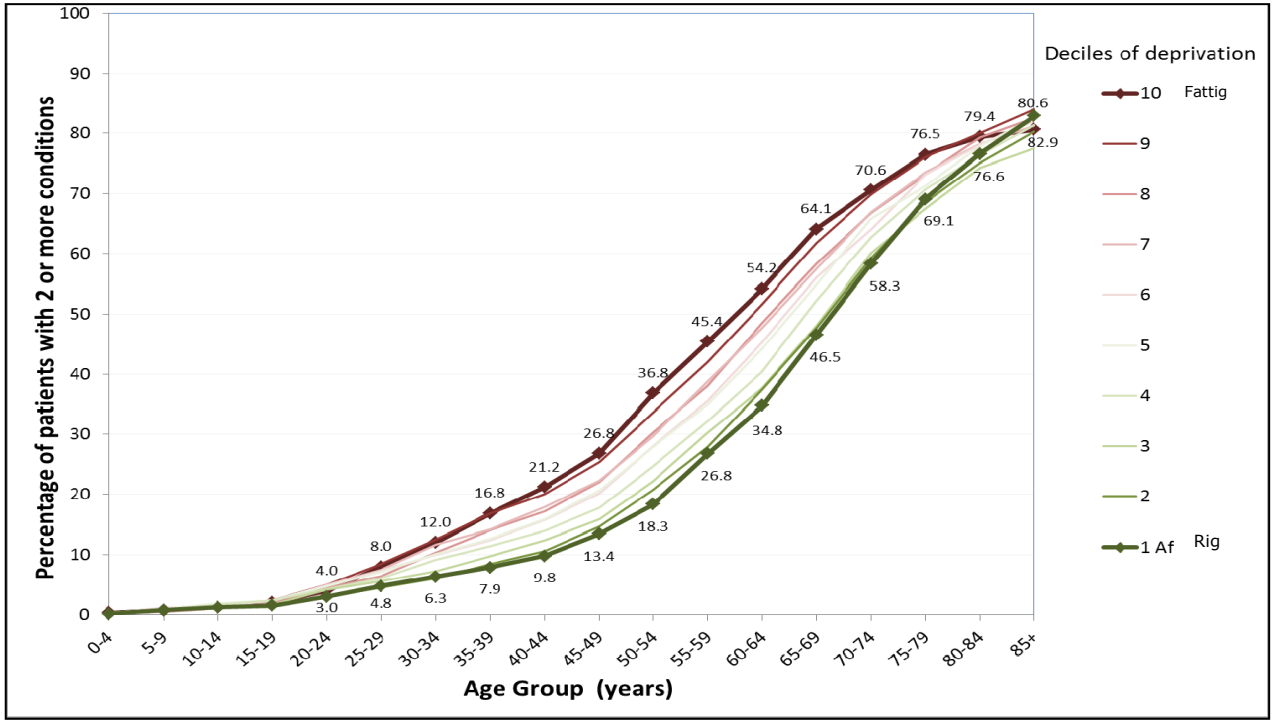

GPS
Weather and climate
Air traffic
Security and automation
Biomedical research and personal health
Coronary artery disease
Type 2 diabetes
Obesity
Osteoarthritis
Cell phone, texts, digital music and movies
Real time traffic
Financial markets and services
DATA ANALYTICS
Individual patient
PREDICTIVE MODELS OF DISEASE
Diagnostics
Therapies
Diagnosis and treatment assignment

Den danske befolkning og besøgstal i sundhedsvæsenet indenfor 1 år



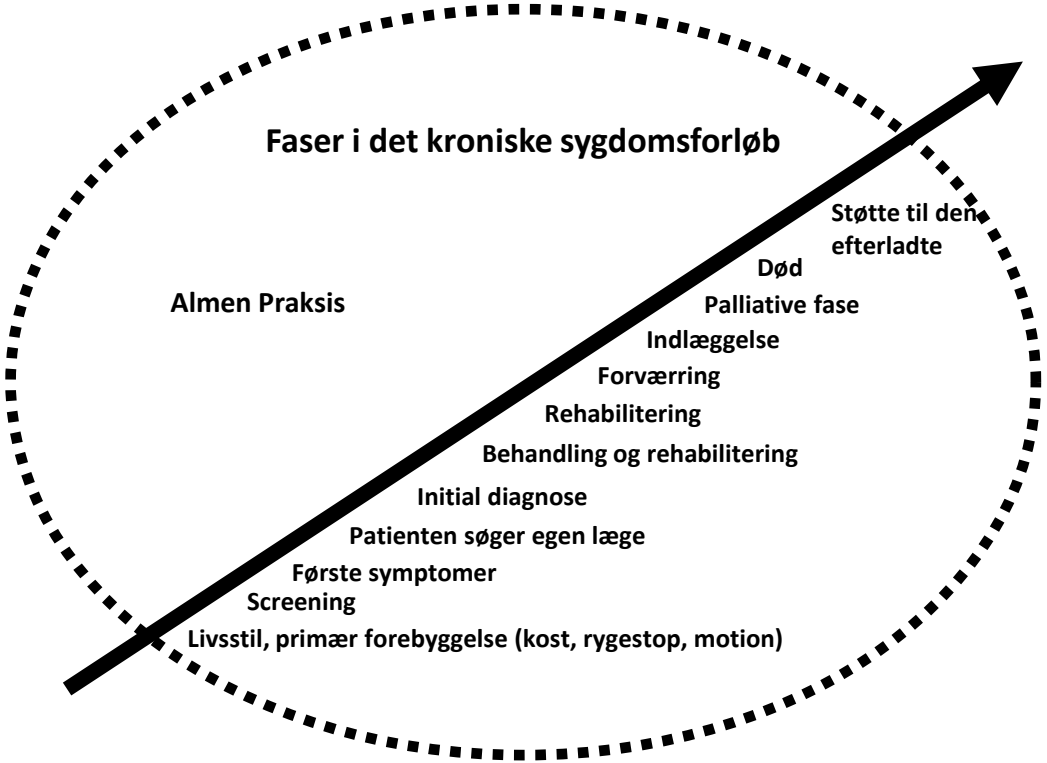
Sundhedsstyrelsen 2007 og Peter Vedsted

Multimorbiditet

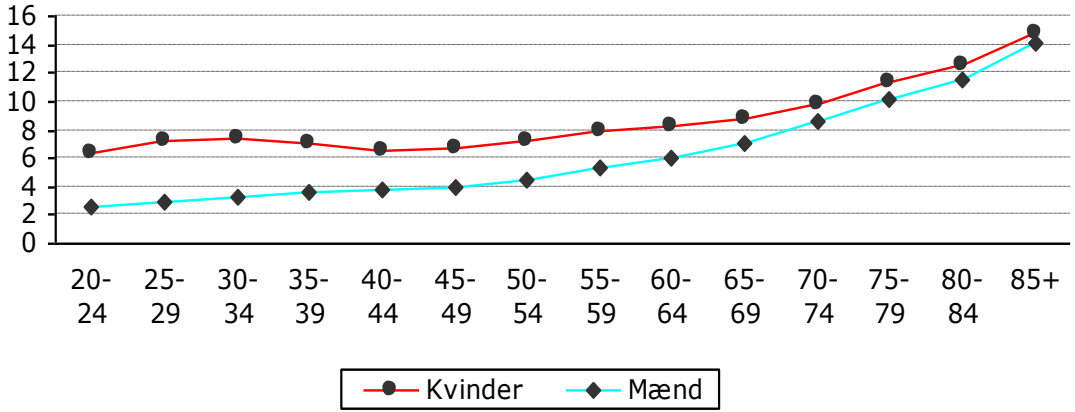


THE RESEARCH UNIT FOR GENERAL PRACTICE
Odense

SDU


Faser i det kroniske sygdomsforløb
Almen Praksis
Støtte til den efterladte
Død
Palliative fase
Indlæggelse
Forværring
Rehabilitering
Behandling og rehabilitering
Initial diagnose
Patienten søger egen læge
Første symptomer
Screening
Livsstil, primær forebyggelse (kost, rygestop, motion)

Patienters kontakter i almen praksis



(Kilde: Danmarks Statistik), 2003

Proportion of patients reaching HbA1c targets related to second-line treatment initiation: a Nordic observational study comparing type 2 diabetes management in primary care

Frederik Persson[1], Johan Bodegard[2], Søren Tang Knudsen[3], Hanne L. Gulseth[4], Kristian Furuseth[5], Marcus Thuresson[6], Anders Lindh[7], Michael Alvarsson[8], Marit Eika Jørgensen[1], Jens Søndergaard[9], Kåre I. Birkeland[4], Peter M. Nilsson[10]

1. Steno Diabetes Center Copenhagen, Gentofte, Denmark 2. AstraZeneca Nordic-Baltic, Oslo, Norway 3. Steno Diabetes Center Aarhus (SDCA), Aarhus, Denmark 4. Oslo University Hospital and University of Oslo, Oslo, Norway 5. Solli Klinikk, Jessheim, Norway 6. Statisticon AB, Uppsala, Sweden 7. Husläkarna i Österåker, Åkersberga, Sweden 8. Karolinska University Hospital, Stockholm, Sweden 9. University of Southern Denmark, Odense, Denmark 10. Lunds University, Malmö, Sweden

D360 NORDIC

Background and Aims

Second line treatment with glucose lowering drugs (GLD) is an important part of type 2 diabetes (T2D) management. In first line, international guidelines advocate metformin as pharmacological treatment of T2D, followed by a choice of second-line treatment by several different glucose-lowering drug (GLD) classes, i.e. sulphonylurea, insulin, dipeptidyl peptidase-4 inhibitors (DPP-4i), sodium glucose cotransporter-2 inhibitors (SGLT-2i), glucagon-like peptide-1 receptor agonists (GLP1-RA), and other GLDs. The second-line treatments are considered equal and open for individualization, based on choices and considerations among T2D patients and health care professionals.[1]

The Nordic countries have similar and nationwide public primary health care systems. Despite that GLD guidelines argue for early intervention of uncontrolled HbA1c, previous research has shown that the Nordic countries differ with respect to the in the choice of glucose lowering drugs when initiating second-line treatment.[2, 3]

The aim of this study was to describe proportion of T2D patients with HbA1c levels successfully below targets at initiation of second-line and up to 5 years after using data from Denmark, Norway and Sweden.

Materials and Methods

The present work is part of the D360 initiative, which aims to give a 360-degree view of the T2D disease with regards to disease and treatment reality in the Nordic countries, covering approximately 25 million inhabitants.[3] The D360 initiative utilizes the unique features of nationwide health care registries and public health care systems, similar in all the examined countries, to include all T2D patients with filled glucose lowering drug prescriptions.[4]

Electronic medical record (EMR) data were extracted from 60 primary care clinics in Denmark, Norway and Sweden (15, 15 and 30, respectively) comprising all patients having a diabetes diagnosis and/or prescription of any glucose lowering drug during 2003 to 2015. Individual patient-level data from the EMR and national registers (Registry of Medicinal Product Statistics (Denmark), Prescribed Drug Register (Norway, Sweden), National Patient- and the Cause of Death Registries in respective country) were linked using personal identification numbers, assigned at birth and mandatory when utilizing the public healthcare systems. Data linkage was performed by the Statistics Denmark, the Swedish National Board of Health and Welfare, and the Norwegian Institute of Public Health, respectively.

Patients with type 1 diabetes and gestational diabetes were excluded. This study has a cohort follow-up design and results are deducted by following individual patients. Second line treatment (index date) was defined as dispense of new GLD class after ≥6 months metformin monotherapy.

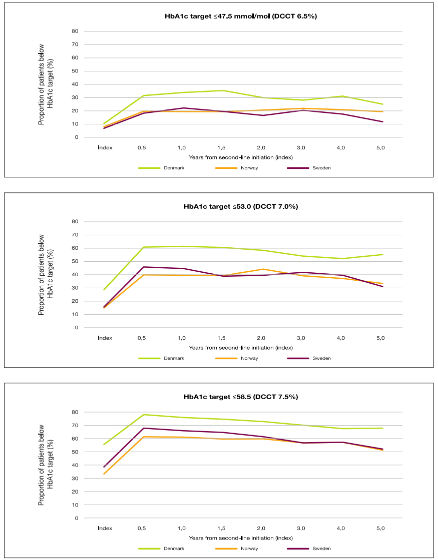
Three levels of blood glucose control were assessed: HbA1c target ≤47.5 mmol/mol (DCCT 6.5%), ≤53 (7.0) and ≤58.5 (7.5).

Table 1. Baseline description of patients initiated on second-line between 2010 and 2015.

	Denmark (n=646)	**Norway** (n=635)	**Sweden** (n=1580)
Age, mean (SD)	59.5 (13.2)	62.0 (12.8)	63.7 (12.1)
Female, n (%)	269 (41.6)	265 (41.7)	613 (38.8)
Time on metformin monotherapy, years (SD)	3.8 (2.4)	4.4 (2.7)	4.2 (2.4)
Comorbidities			
CVD, n (%)	125 (19.3)	131 (20.6)	417 (26.4)
Myocardial infarction	29 (4.5)	39 (6.1)	138 (8.7)
Heart failure	37 (5.7)	42 (6.6)	129 (8.2)
Atrial fibrillation	43 (6.7)	53 (8.3)	154 (9.7)
Stroke	38 (5.9)	25 (3.9)	165 (10.4)
Peripheral artery disease	35 (5.4)	39 (6.1)	88 (5.6)
Microvascular disease, n (%)	98 (15.2)	116 (18.3)	563 (35.6)
Chronic kidney disease, n (%)	8 (1.2)	22 (3.5)	48 (3.0)
Lower limb amputations, n (%)	<5	1 (0.2)	12 (0.8)
Cancer, n (%)	42 (6.5)	65 (10.2)	147 (9.3)
CVD risk treatment, n (%)	579 (89.6)	525 (82.7)	1344 (85.1)
Antihypertensives*, n (%)	470 (72.8)	444 (69.9)	1156 (73.2)
Statins, n (%)	463 (71.7)	374 (58.9)	969 (61.3)
Beta-blockers, n (%)	146 (22.6)	230 (36.2)	624 (39.5)
Blood glucose lowering treatment			
Metformin, n (%)	646 (100.0)	635 (100.0)	1580 (100.0)
DPP-4i, n (%)	140 (21.7)	151 (23.8)	361 (22.8)
SGLT-2i, n (%)	17 (2.6)	27 (4.3)	13 (0.8)
GLP-1RA, n (%)	65 (10.1)	30 (4.7)	51 (3.2)
Sulphonylurea, n (%)	151 (23.4)	204 (32.1)	740 (46.8)
Insulin, n (%)	80 (12.4)	42 (6.6)	332 (21.0)
Laboratory measurements			
HbA1c (IFCC), mmol/mol (SD)	58.5 (15.4)	66.9 (16.4)	64.4 (15.4)
HbA1c (DCCT), % (SD)	7.5 (1.4)	8.3 (1.5)	8.0 (1.4)
LDL-cholesterol, mmol/L (SD)	2.6 (0.9)	2.8 (1.2)	2.8 (0.9)
Systolic blood pressure, mmHg (SD)	137.3 (17.0)	139.7 (15.5)	137.0 (16.9)
Diastolic blood pressure, mmHg (SD)	82.8 (10.4)	81.8 (10.0)	79.7 (10.1)
Estimated GFR, mL/min/1.73 m² (SD)	89.4 (24.7)	81.5 (25.6)	95.2 (32.7)
ASAT, Units/L (SD)	39.1 (35.0)	29.7 (21.2)	28.1 (36.9)
ALAT, Units/L (SD)	40.5 (33.4)	42.4 (31.0)	38.8 (42.8)

CVD, cardiovascular disease. LDL, low density lipoprotein. GFR, glomerular filtration rate. ASAT, aspartate aminotransferase. ALAT, alanine aminotransferase. *Antihypertensives include ACEi, ARB, non-hydropyridines (calcium channel blockers) and/or low ceiling diuretics (thiazides). Numbers in brackets are % unless stated otherwise.

Figure 1. Proportion of patients with controlled blood glucose at (index) and following second-line.



Results

Between 2010 and 2015, 2861 patients with second line glucose lowering drug treatment were identified in Denmark, Norway and Sweden; 646, 635 and 1580 patients, respectively. Mean age was 60–64 years and 39–42% were females, *Table 1*. CVD preventive treatment was in general high and similar in all three countries. Use of older GLDs, e.g. sulphonylurea and insulin, as second line treatment was two-fold greater in Sweden compared with Norway and Denmark. The greatest initiation of newer GLDs, e.g. DPP-4i, SGLT-2i or GLP-1RA, was observed in Denmark (70%) and Norway (75%) compared to Sweden (48%).

- In Denmark, second-line was initiated after shorter time on metformin monotherapy and at lower HbA1c levels.
- In Denmark, initiation of second-line treatment showed the greatest proportion of patients with controlled blood glucose at index and during follow-up compared to Norway and Sweden, *Figure 1*. During follow-up, the initial blood glucose control was maintained on almost similar levels in Denmark compared to Norway and Sweden.

Summary

In this multinational study, we have shown differences in glucose lowering strategies, where Denmark and Norway showed higher use of newer glucose lowering drug, compared to Sweden displaying greater use of older drugs in second-line treatment. These findings are in line with a large full-population study covering the same countries.[3]

Despite being neighboring countries with similar health care systems, we have shown that T2D patients in Denmark are initiated on second-line treatment both earlier and at a lower HbA1c. The higher proportion of patients with initially improved blood glucose control remained on the similar levels over the next 5-years demonstrating a legacy effect of early actions. This indicates a more proactive T2D disease management in Denmark, supported by other reports study demonstrating overall better glycaemic control and CVD preventive treatment.[2, 5-7]

Conclusion

Despite similar demographics and health care systems in three Nordic countries, we have shown marked differences in drug treatment patterns and HbA1c target strategies related to second-line treatment. In Denmark, second-line treatment was initiated earlier, i.e. in patients with lower mean HbA1c, which also resulted in an observed better glycemic control over the next five years compared to Norway and Sweden. These observations may indicate a more proactive disease management in the included general practices in Denmark in a primary care setting compared to the other countries.

Acknowledgements

Urban Olsson, Statisticon AB, is acknowledged for database management. Susanna Jerström and Helena Goike, AstraZeneca Nordic-Baltic, are acknowledged for logistic support and valuable comments. Data from the Norwegian Patient Register has been used in this publication. The interpretation and reporting of these data are the sole responsibility of the authors, and no endorsement by the Norwegian patient register is intended nor should be inferred. Norwegian data on cause of death were obtained from the Norwegian Cause of Death Registry.

References

1. Inzucchi SE, et al. Management of hyperglycemia in type 2 diabetes, 2015: a patient-centered approach: update to a position statement of the American Diabetes Association and the European Association for the Study of Diabetes. Diabetes Care. 2015;38(1):140-9.
2. Persson F, et al. HbA1c and second line glucose lowering drug initiation in Denmark, Norway and Sweden: an observational study comparing T2DM management in primary care Munich, Germany 2016
3. Persson F, et al. Different patterns of second-line treatment in type 2 diabetes after metformin monotherapy in Denmark, Finland, Norway and Sweden (D360 Nordic): a multinational observational study. Endocrinology, Diabetes & Metabolism. 2018; doi: 10.1002/edm2.36.
4. Lindh A, et al. Nordic Longitudinal Data from Electronic Medical Records and Full Population National Registers: Unique Opportunities for New Insights in Benefit of Diabetes Patients. Value Health. 2015;18(7):A726.
5. Birkeland KI, et al. Primary care management of type 2 diabetes mellitus in Denmark, Norway and Sweden: a long term observational study Munich, Germany 2016
6. Tang Knudsen S, et al. Cross-sectional study of annual glycaemic control between 2003 to 2015 in primary care: a Nordic observational study comparing T2D management in primary care. Berlin, Germany 2018

Presented at the 54rd EASD Annual Meeting, 1-5 October 2018, Berlin, Germany. The study was sponsored by AstraZeneca.

THE RESEARCH UNIT FOR GENERAL PRACTICE Odense

SDU

Magda - 87 år, ny plejehjemspatient i praksis

Diagnoser

- KOL
- Nedsat nyrefunktion (crea 156)
- Aortaklapstenose
- Thyreotoxicose
- T2DM
- Artritis Urica
- Angina pectoris
- Sinoatrial blok + pacemaker
- Atrieflagren

Organisatorisk tilbud i almen praksis?

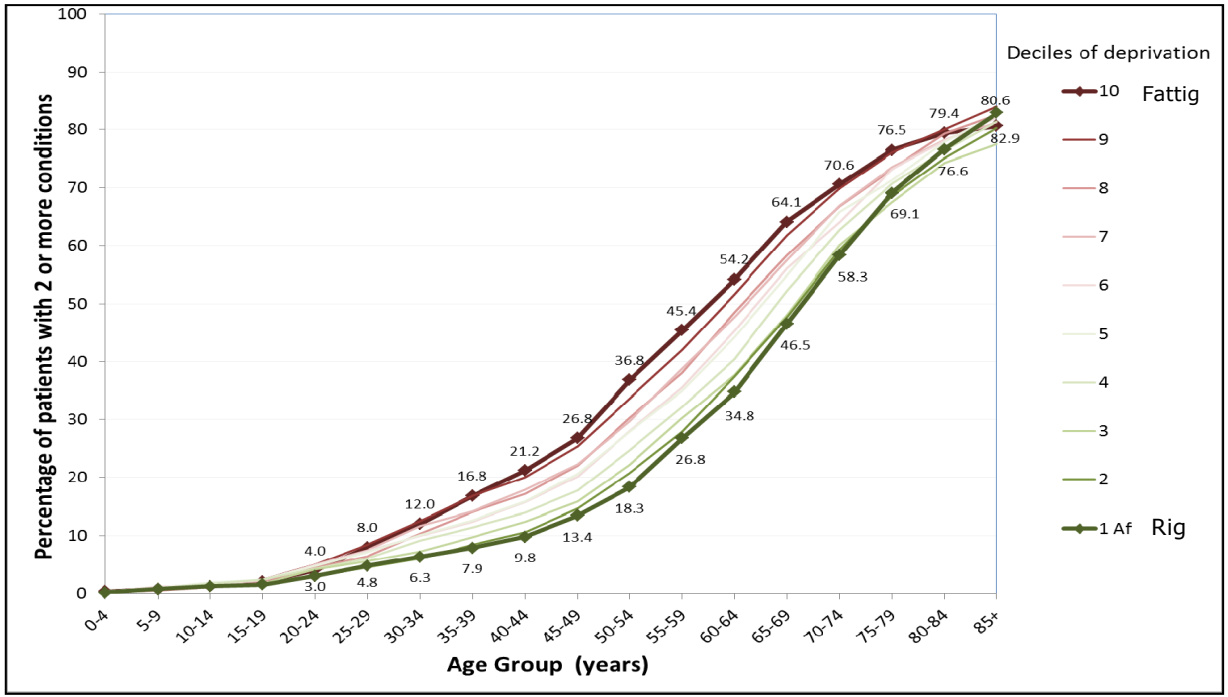
Plan for medicin?

Medicin

- Unikalk silver 1x2

- Multivitamin x1
- Apovit B combin stærk
- Symbicort 320 x1
- Mandolgin 50mg p n
- Spiriva 18yg x1
- Glukosamin 400x3
- Thycapzol 5mg
- Allopurinol 100mg
- Furix 40 mg
- Selozok 50 mg
- Corodil 10 mg f BT
- Digoxin 62,5- 2 dgl
- Magnesia 500mgl 1x2
- Simvastatin 40 mg
- Marevan 2.5 mg e INR
- Sifrol 0,088 mg
- Kinin
- Durogesic 25 yg

Multimorbiditet

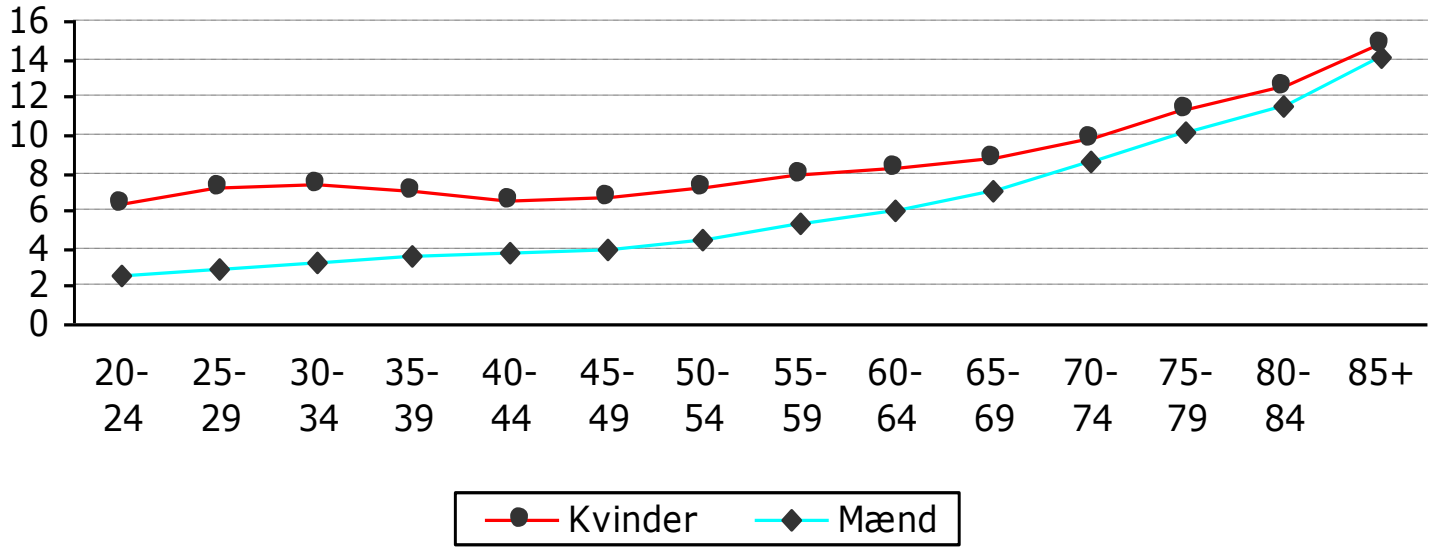


THE RESEARCH UNIT FOR GENERAL PRACTICE
Odense

SDU

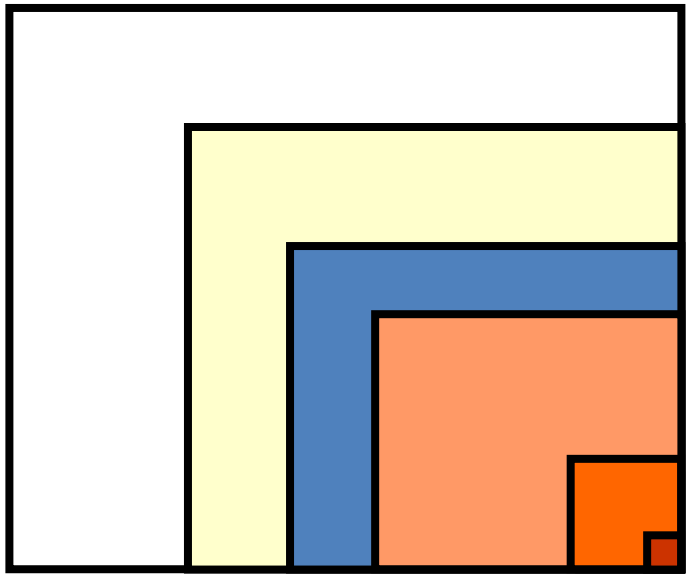
Barnett B et al. Lancet 2012;380:3743

Patienters kontakter i almen praksis



(Kilde: Danmarks Statistik), 2003

1000 persons in one month



750 with symptoms

500 use medicine

250 seek their GP

10 admitted to hospital

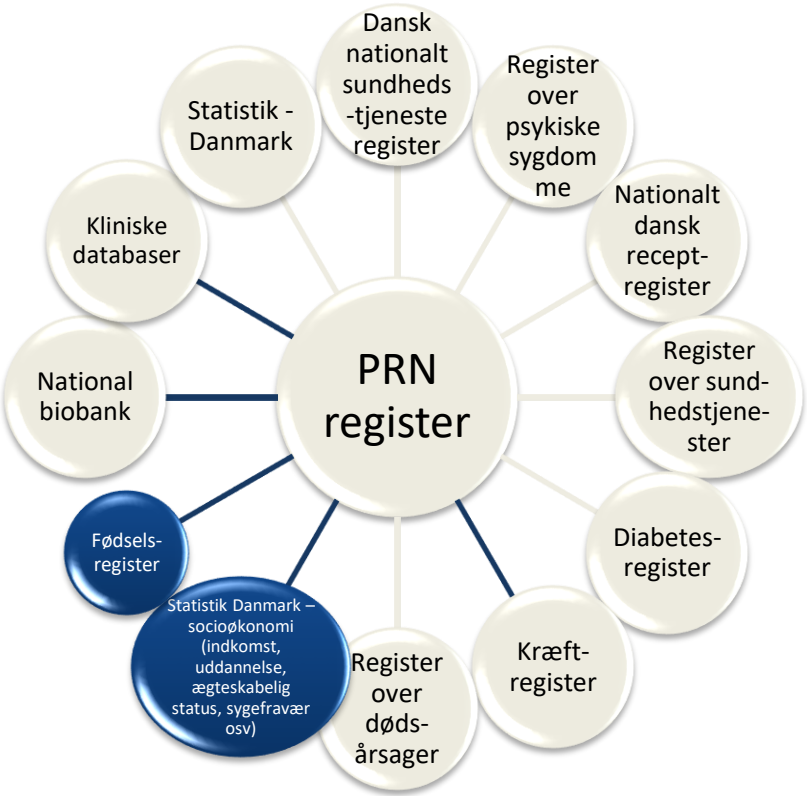
1 to uni-hosp.

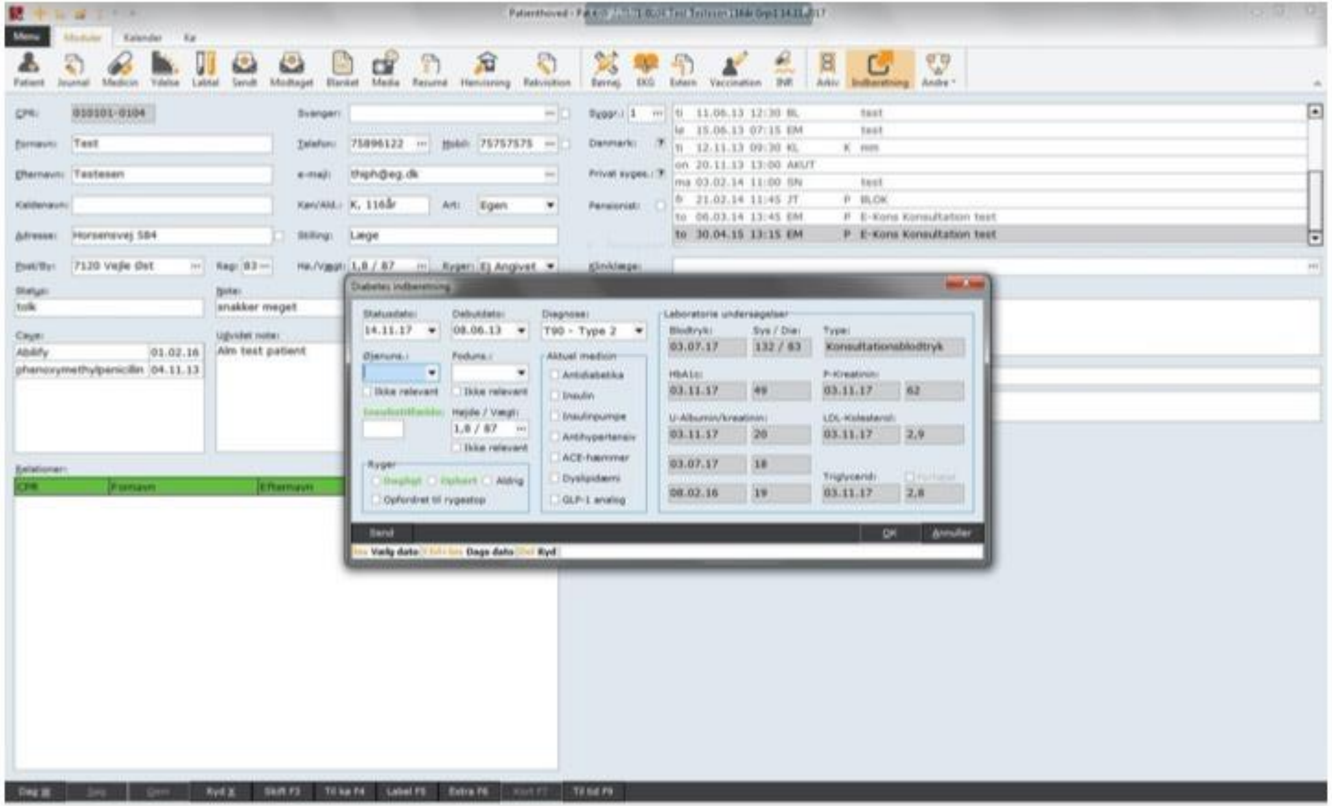
Kamper Jørgensen, SIF, N Engl J. Med.2001 2021-24

Health IT infrastructure in Denmark

- All Danish FPs use electronic patient files.
- National standard for communication (Edifact) is mandatory for all vendors of electronic medical record systems.
- Electronic communication from FPs to:
  - all hospitals (referrals, requests for lab. tests, X-rays etc.)
  - all specialists
  - pharmacies (prescriptions)
  - health administrations in the counties
  - and visa versa
- All GPs have on-line access to information on treatment standards, waiting lists, procedures for referral

Data landskab




Diabetes indberetning
Statusdato:
14.11.17
Debutdato:
08.06.13
Diagnose:
T90 - Type 2
Laboratorie undersøgelser
Blodtryk:
Sys / Dia:
132 / 83
Type:
Konsultationsblodtryk
HbA1c:
P-Kreatinin:
U-Albumin/kreatinin:
LDL-Kolesterol:
Triglycerid:
Øjenundersøgelse:
Fodundersøgelse:
Ikke relevant
Højde / Vægt:
1,8 / 87
Ryger
Opfordret til rygestop
Aktuel medicin
Antidiabetika
Insulin
Insulinpumpe
Antihypertensiv
ACE-hæmmer
Dyslipidæmi
GLP-1 analog
Send
OK
Annuller
CPR:
Fornavn:
Test
Efternavn:
Testesen
Adresse:
Horsensvej 584
7120 Vejle Øst
Telefon:
75896122
Mobil:
75757575
e-mail:
Køn/Ald.:
K, 116år
Stilling:
Læge
Status:
tolk
Note:
snakker meget
Cave:
Abilify
phenoxymethylpenicillin
Udvidet note:
Alm test patient
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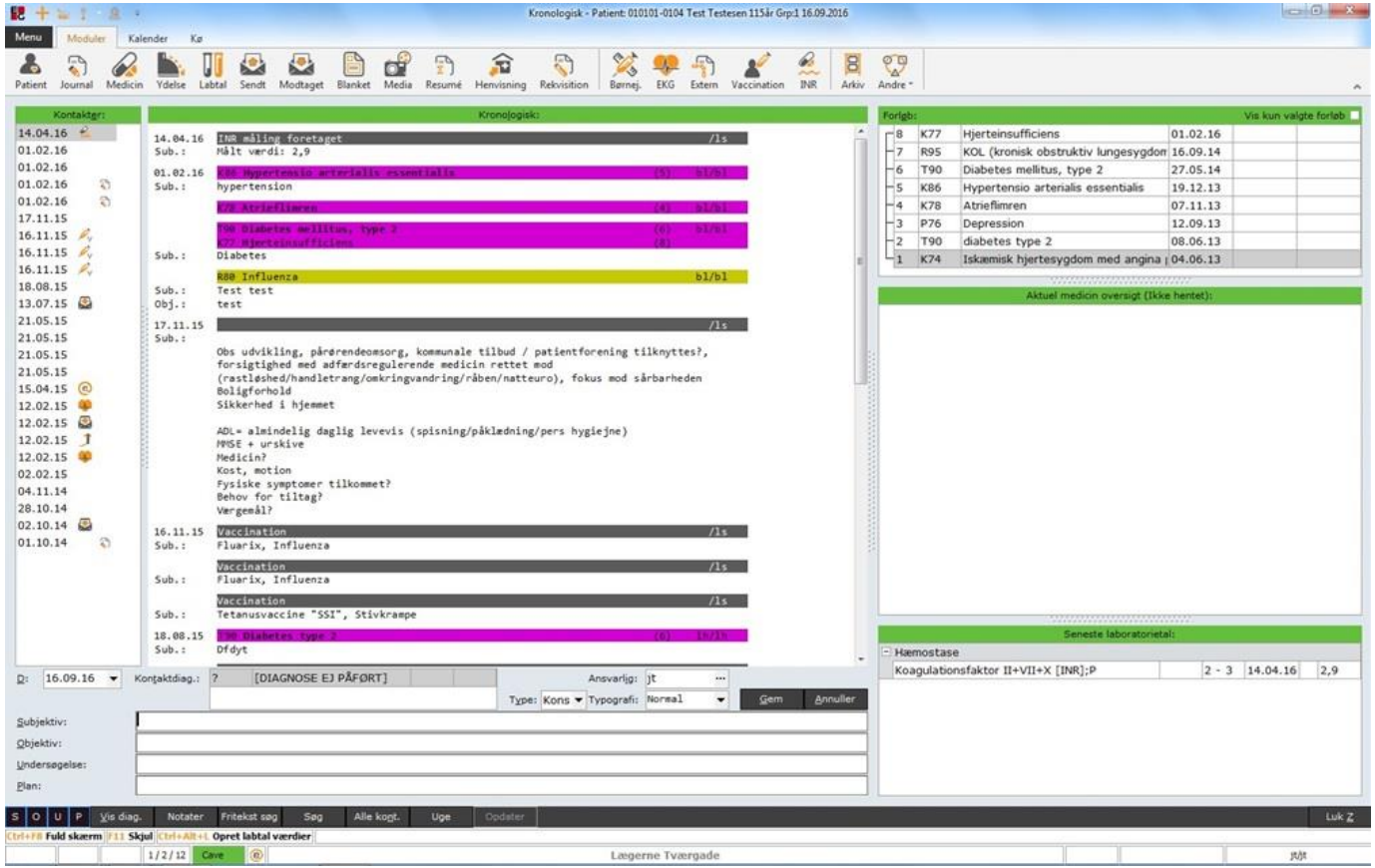
Patient
Journal
Medicin
Ydelse
Laboratorium
Sendt
Modtaget
Blanket
Media
Resumé
Henvisning
Rekvisition
Børneu.
EKG
Extern
Vaccination
INR
Arkiv
Indberetning
Andre
E-Kons Konsultation test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Menu
Moduler
Kalender
Kø
Patient
Journal
Medicin
Ydelse
Labtal
Sendt
Modtaget
Blanket
Media
Resumé
Henvisning
Rekvisition
Børnej.
EKG
Extern
Vaccination
INR
Arkiv
Andre
Kontakter:
Kronologisk:
14.04.16 INR måling foretaget /ls
Sub.: Målt værdi: 2,9
01.02.16 K86 Hypertensio arterialis essentialis (5) bl/bl
Sub.: hypertension
K78 Atrieflimren (4) bl/bl
T90 Diabetes mellitus, type 2 (6) bl/bl
K77 Hjerteinsufficiens (8)
Sub.: Diabetes
K80 Influenza bl/bl
Sub.: Test test
Obj.: test
17.11.15 /ls
Sub.:
Obs udvikling, pårørendeomsorg, kommunale tilbud / patientforening tilknyttes?,
forsigtighed med adfærdsregulerende medicin rettet mod
(rastløshed/handletrang/omkringvandring/råben/natteuro), fokus mod sårbarheden
Boligforhold
Sikkerhed i hjemmet
ADL= almindelig daglig levevis (spisning/påklædning/pers hygiejne)
MMSE + urskive
Medicin?
Kost, motion
Fysiske symptomer tilkommet?
Behov for tiltag?
Værgemål?
16.11.15 Vaccination /ls
Sub.: Fluarix, Influenza
Vaccination /ls
Sub.: Fluarix, Influenza
Vaccination /ls
Sub.: Tetanusvaccine "SSI", Stivkrampe
18.08.15 T90 Diabetes type 2 (6) bl/bl
Sub.: Dfdyt
Forløb:
Vis kun valgte forløb
8 K77 Hjerteinsufficiens 01.02.16
7 R95 KOL (kronisk obstruktiv lungesygdom 16.09.14
6 T90 Diabetes mellitus, type 2 27.05.14
5 K86 Hypertensio arterialis essentialis 19.12.13
4 K78 Atrieflimren 07.11.13
3 P76 Depression 12.09.13
2 T90 diabetes type 2 08.06.13
1 K74 Iskæmisk hjertesygdom med angina 04.06.13
Aktuel medicin oversigt (Ikke hentet):
Seneste laboratorietal:
Hæmostase
Koagulationsfaktor II+VII+X [INR];P 2 - 3 14.04.16 2,9
D: 16.09.16
Kontaktdiag.: ? [DIAGNOSE EJ PÅFØRT]
Ansvarlig: jt
Type: Kons
Typografi: Normal
Gem
Annuller
Subjektiv:
Objektiv:
Undersøgelse:
Plan:
S O U P
Vis diag.
Notater
Fritekst søg
Søg
Alle kont.
Uge
Opdater
Luk Z
Ctrl+F8 Fuld skærm F11 Skjul Ctrl+Alt+L Opret labtal værdier
1/2/12
Cave
Lægerne Tværgade
jt/jt

Eksempel: Forskningsbaseret udvikling af digital coaching af patienter med type 2-diabetes og klinisk beslutningsstøtte almen praksis (DICTA)

SDU

2011
Test af prototype i almen praksis version 1.0[1]

2013
Phd projekt start
Formål: Udvikling og test af mHealth livsstilsintervention

2015
Forskningsresultat:
Feltstudier og identificering af brugernes behov[2,3,4]

2017
Forskningsresultat:
Evaluering af version 2.0 i danske kommuner[5], NHS i England og RCT studie i Danmark[6]

2019
Forskningsbaseret videreudvikling: Forskningsenheden for Almen Praksis, Steno Diabetescenter Sjælland og Odense, Liva Healthcare & Cambio

DICTA

2021

Referencer:

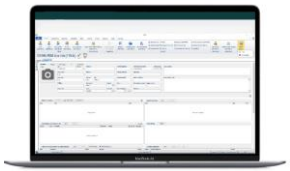
(1) Brandt V, Brandt CJ, Glintborg D, Arendal C, Toubro S, Brandt K. Sustained weight loss during 20 months using a personalized interactive internet based dietician advice program in a general practice setting.
(2) Brandt CJ et al. "Drivers for long-term succesful lifestyle change, the role of eHealth: A qualitative interview study"
(3) Brandt CJ et al "The General Practitioner's perspective on eHealth and lifestyle change – a qualitative interview study"
(4) Brandt CJ et al. "Determinants of Successful eHealth Coaching for Consumer Lifestyle Changes: Qualitative Interview Study Among Health Care Professionals."
(5) Komkova A,et al. Electronic Health Lifestyle Coaching Among Diabetes Patients in a Real-Life Municipality Setting: Observational Study.
(6) Brandt et al. "Evaluation of the Clinical and Economic Effects of a Primary Care Anchored, Collaborative, Electronic Health Lifestyle Coaching Program in Denmark: Protocol for a Two-Year Randomized Controlled Trial"

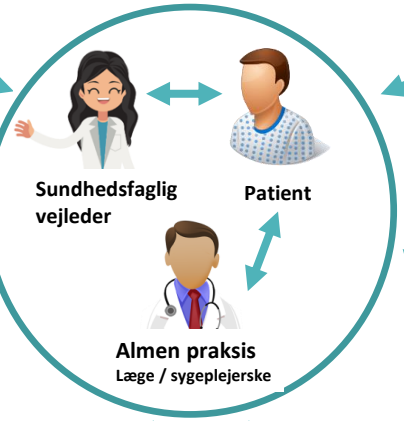
DICTA: Et samarbejde mellem patient, sundhedsfaglig vejleder og almen praksis

Personlig vejledning
Asynkront via app (tekst og video)

Personlig livsstilsplan
Hver plan er skræddersyet til den enkelte patients behov og ressourcer. Motiverende indhold nøje tilpasset den enkelte patients mål

Klinisk Guidelinestøtte
Algoritmebaseret vejledning i kliniske guidelines. Enkel regulering af medicinsk behandling baseret på blodprøvesvar og patientens livsstil samt præferencer



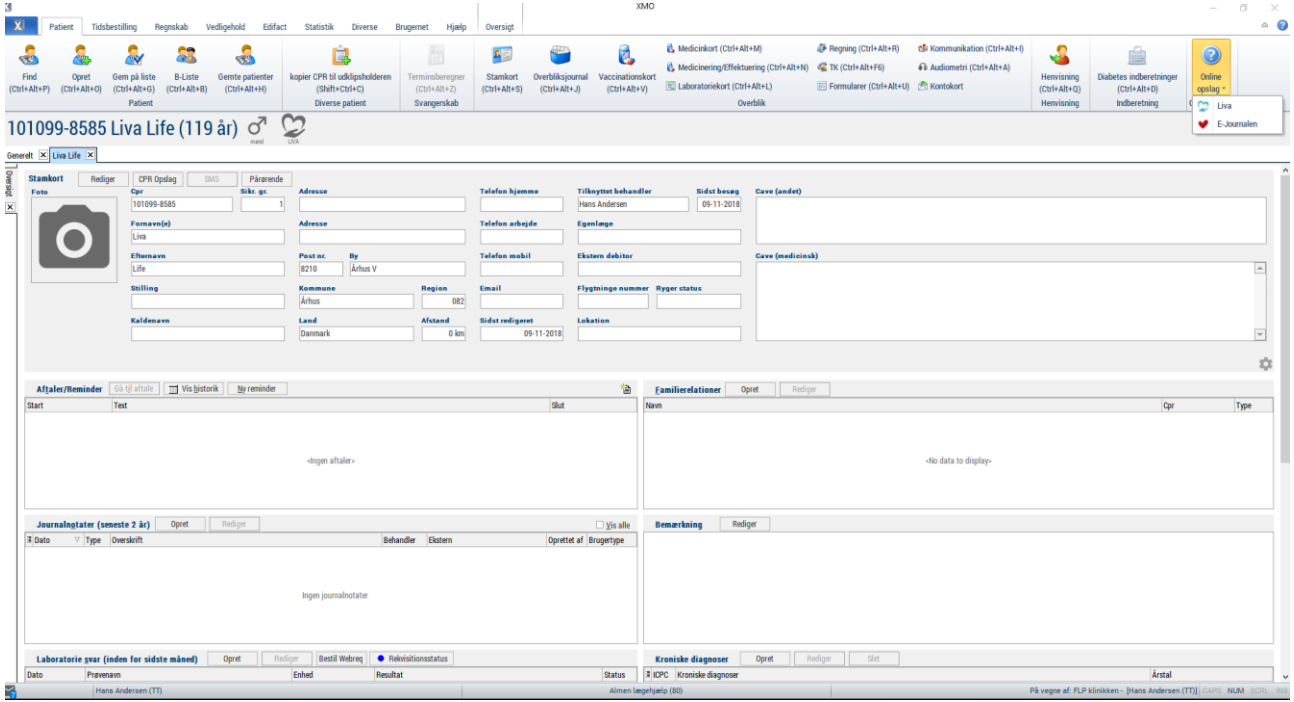


Støtte fra andre patienter
Mulighed for at dele erfar-Inger med andre patienter

Monitorering af livsstil
Automatisk monitorering af f.eks. antal skridt eller let tilgængelig registrering af kost og medicin.

Adgang til patientens livsstilsdata
Den praktiserende læge har adgang til patientens registreringer via journalen

Integration med almen praksis systemer



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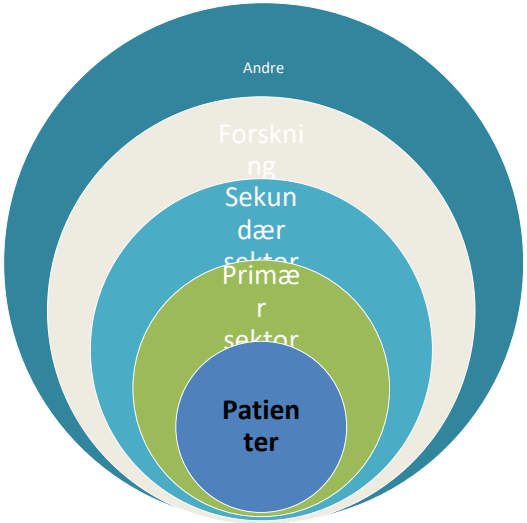
Odense

SDU

Value proposition

BoneBuddy og DICTA bidrager til optimeret forløb for patienter med kroniske sygdomme



Patienter

Øget sygdomsforståelse og egenomsorg → bedre compliance
Forebyggelse af senfølger, indlæggelser og tidlig død → øget livskvalitet

Primær sektor

Almen praksis: Færre kontakter og bedre forberedte patienter → effektive konsultationer
Kommunerne: Digital patientskole, bedre compliance → optimering af ressourcer

Sekundær sektor

Sygehuse: Hurtigere udredning og bedre diagnosticering plus bedre segmentering af de patienter der henvises, så kun de mest syge behandles og følges af specialister → tidlig opsporing og bedre forebyggelse → optimering af ressourcer

Forskning

Mulighed for at samle data via eHealth løsninger og apps → banebrydende forskning som kan anvendes til at forudsige og forebygge komplikationer, indlæggelser og tidlig død

Andre:

Forsikringsselskaber: eHealth løsninger tilbydes som en tillægsservice til sundhedssikringer → flere kunder og bedre forebyggelse af livsstilssygdomme og brud (= færre omkostninger)

Farmaselskaber: eHealth løsningen tilbydes som en tillægsydelse sammen med et præparat → bedre service og øget compliance (stigende salg af præparat og bedre effekt)

Patientforeninger: Mere fokus på kroniske folkesygdomme

Formålet med TOF

Tidlig og systematisk opsporing af borgere med usund livsstil og risiko for livsstilssygdomme

samt

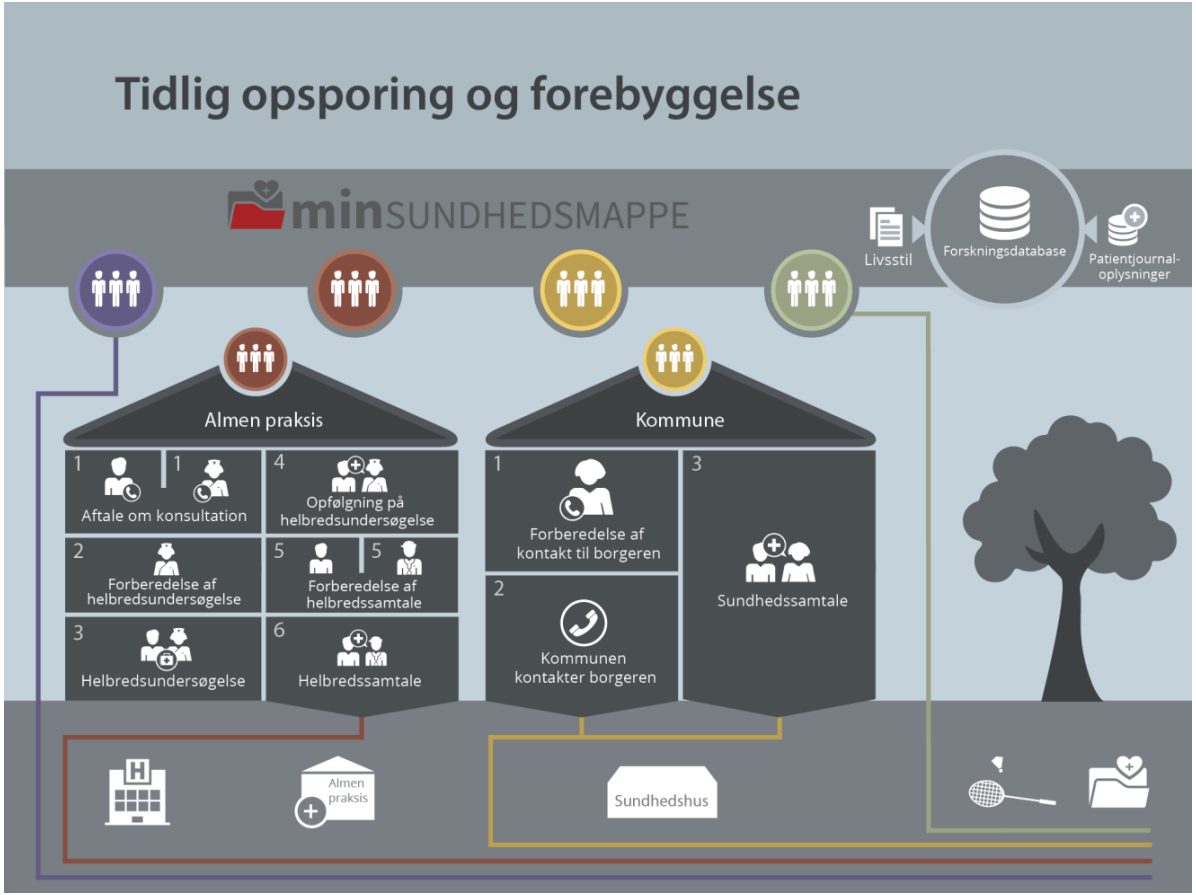
Tilbud om målrettede og sammenhængende forebyggelsesforløb i den primære sundhedssektor.

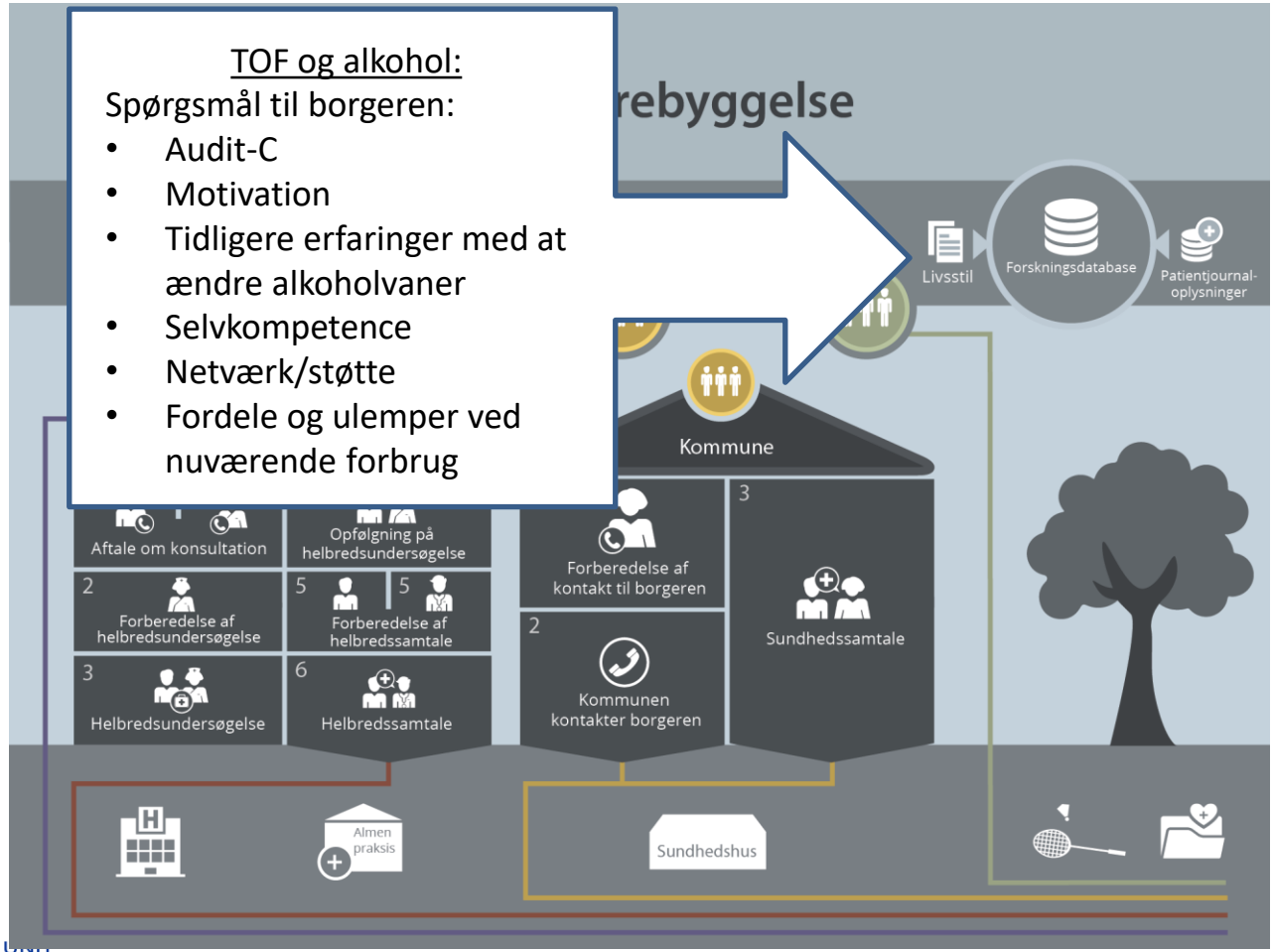
Hvordan arbejder vi med det som projekt?

- Iterativ proces - fra mindre feasibility undersøgelser over pilot undersøgelser af den samlede intervention til en endelig effektundersøgelse (MRC Guidelines for Complex Interventions)

- Participatorisk proces med inddragelse af både de praktiserende læger, kommunale sundhedskonsulenter og borgere

- Tæt samarbejde mellem praksis og forskning


Tidlig opsporing og forebyggelse
minSUNDHEDSMAPPE
Livsstil
Forskningsdatabase
Patientjournal-oplysninger
Almen praksis
Kommune
1
1
Aftale om konsultation
4
Opfølgning på helbredsundersøgelse
2
Forberedelse af helbredsundersøgelse
5
5
Forberedelse af helbredssamtale
3
Helbredsundersøgelse
6
Helbredssamtale
1
Forberedelse af kontakt til borgeren
2
Kommunen kontakter borgeren
3
Sundhedssamtale
Almen praksis
Sundhedshus

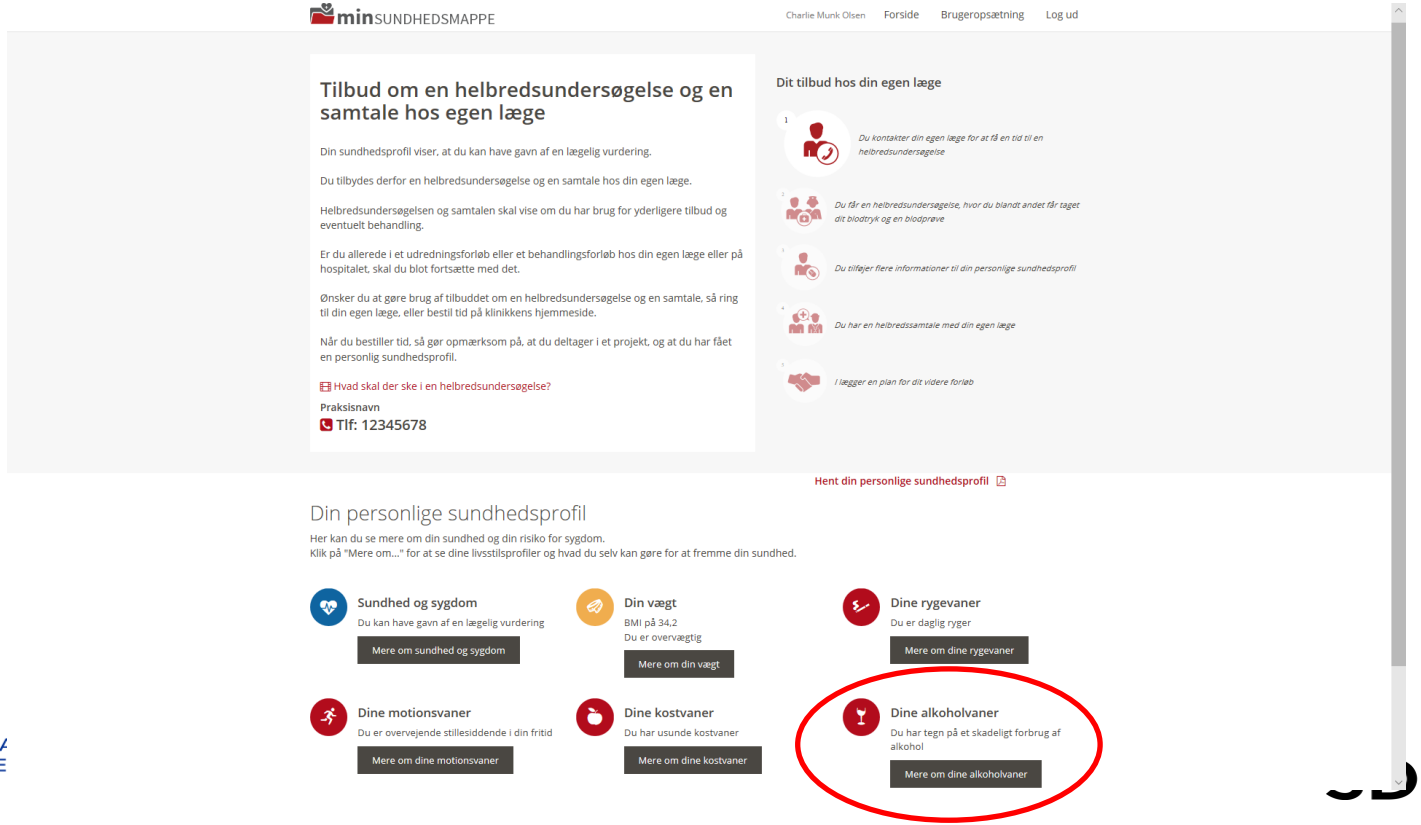


TOF og alkohol:

Spørgsmål til borgeren:

- Audit-C
- Motivation
- Tidligere erfaringer med at ændre alkoholvaner
- Selvkompetence
- Netværk/støtte
- Fordele og ulemper ved nuværende forbrug

TOF og alkohol



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FOR GENE
Odense

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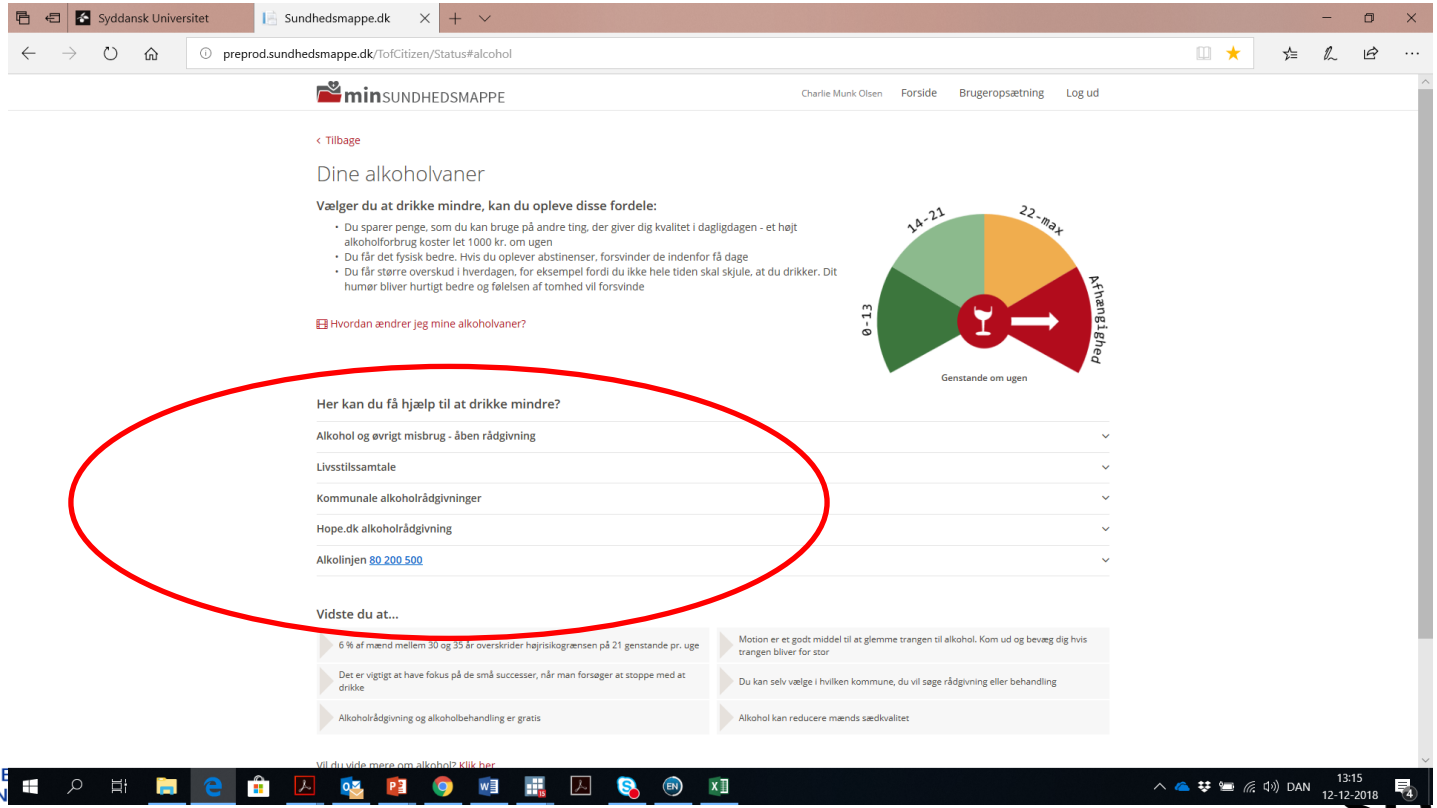

Syddansk Universitet
Sundhedsmappe.dk
preprod.sundhedsmappe.dk/TofCitizen/Status#alcohol
minSUNDHEDSMAPPE
Charlie Munk Olsen
Forside
Brugeropsætning
Log ud
‹ Tilbage
Dine alkoholvaner
Vælger du at drikke mindre, kan du opleve disse fordele:
• Du sparer penge, som du kan bruge på andre ting, der giver dig kvalitet i dagligdagen - et højt alkoholforbrug koster let 1000 kr. om ugen
• Du får det fysisk bedre. Hvis du oplever abstinenser, forsvinder de indenfor få dage
• Du får større overskud i hverdagen, for eksempel fordi du ikke hele tiden skal skjule, at du drikker. Dit humør bliver hurtigt bedre og følelsen af tomhed vil forsvinde
Hvordan ændrer jeg mine alkoholvaner?
0-13
14-21
22-max
Afhængighed
Genstande om ugen
Her kan du få hjælp til at drikke mindre?
Alkohol og øvrigt misbrug - åben rådgivning
Livsstilssamtale
Kommunale alkoholrådgivninger
Hope.dk alkoholrådgivning
Alkolinjen 80 200 500
Vidste du at...
6 % af mænd mellem 30 og 35 år overskrider højrisikogrænsen på 21 genstande pr. uge
Motion er et godt middel til at glemme trangen til alkohol. Kom ud og bevæg dig hvis trangen bliver for stor
Det er vigtigt at have fokus på de små successer, når man forsøger at stoppe med at drikke
Du kan selv vælge i hvilken kommune, du vil søge rådgivning eller behandling
Alkoholrådgivning og alkoholbehandling er gratis
Alkohol kan reducere mænds sædkvalitet
Vil du vide mere om alkohol? Klik her
DAN
13:15
12-12-2018

The DANY project

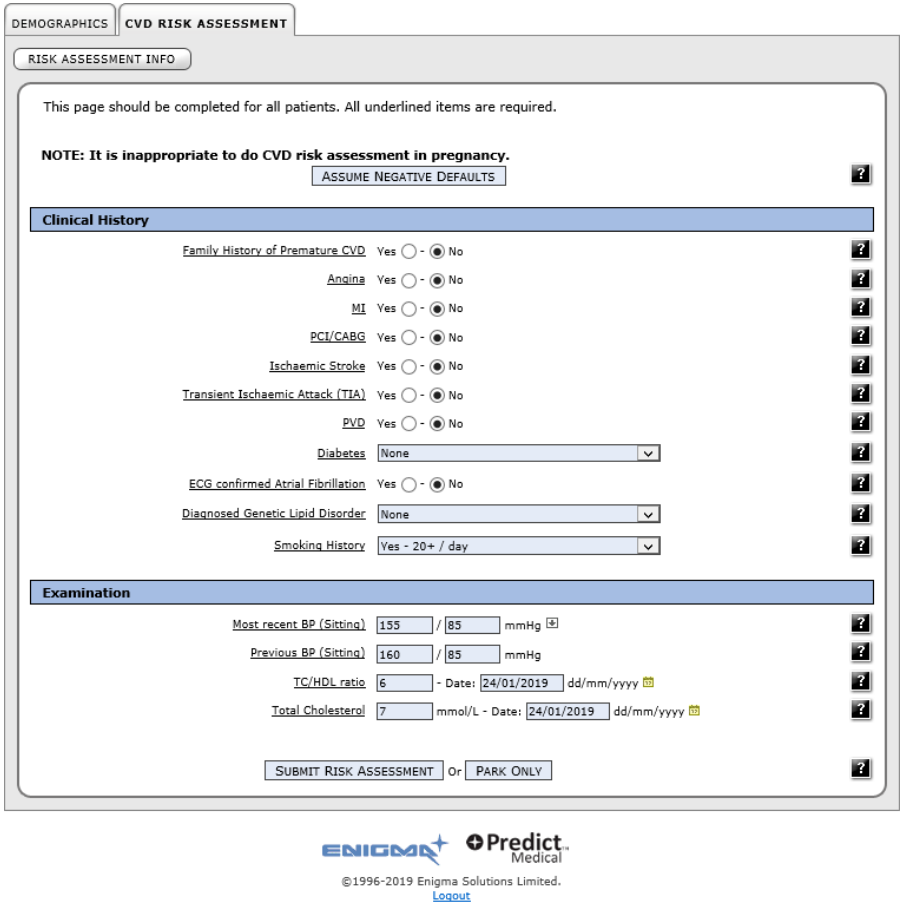
- Research Unit of General Practice, University of Southern Denmark
- ENIGMA Solutions Ltd., New Zealand
- University of Auckland, New Zealand

Risk calculation

Total risk derived from multiple risk factors.

PREDICT is built for cardiovascular risk assessment, but the principle can be used for all other multifactorial risk calculations too.

Each risk factor on the picture can be substituted to fit other diseases.



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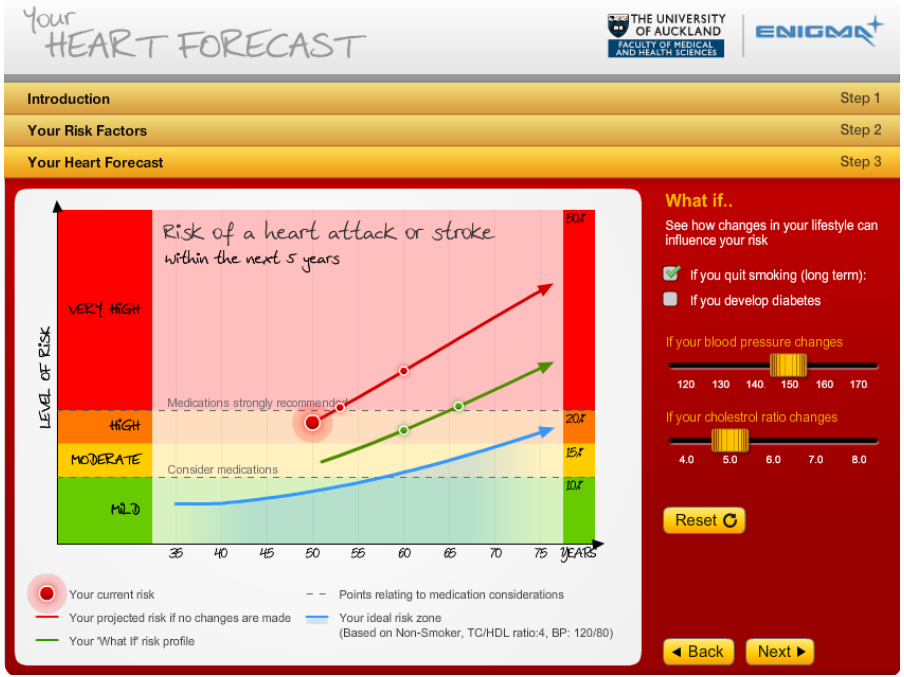
Visual and dynamic

Visual communication is easier to understand than numeral.

Dynamic pictures motivates by showing the possible benefits up front.

The dynamic feature involves the patient in the process of choosing the right treatment plan.



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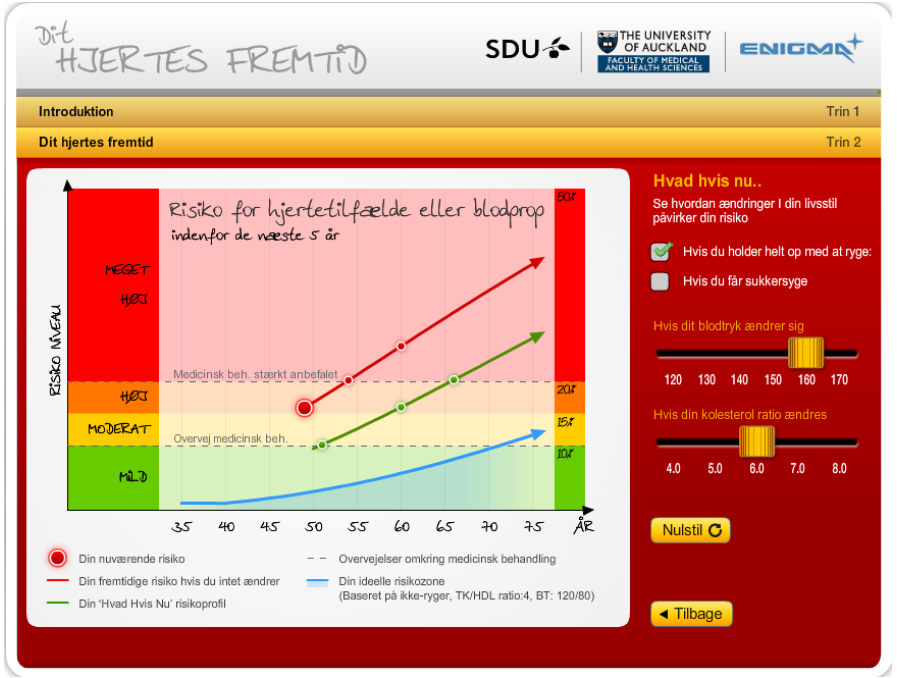

Andre AI projekter

- Osteoporose
- Diabetes
- Hjertero
- Medicin
- Cancer
- Video - AI her?

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- Osteoporose
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Udfordringer

- Validitet af algoritmerne
- Manglende transparens
- Klinikertræthed
- Bekymring ved AI

Telemedicin

Kronisk sygdom

Ikke egnet til skrøbelige

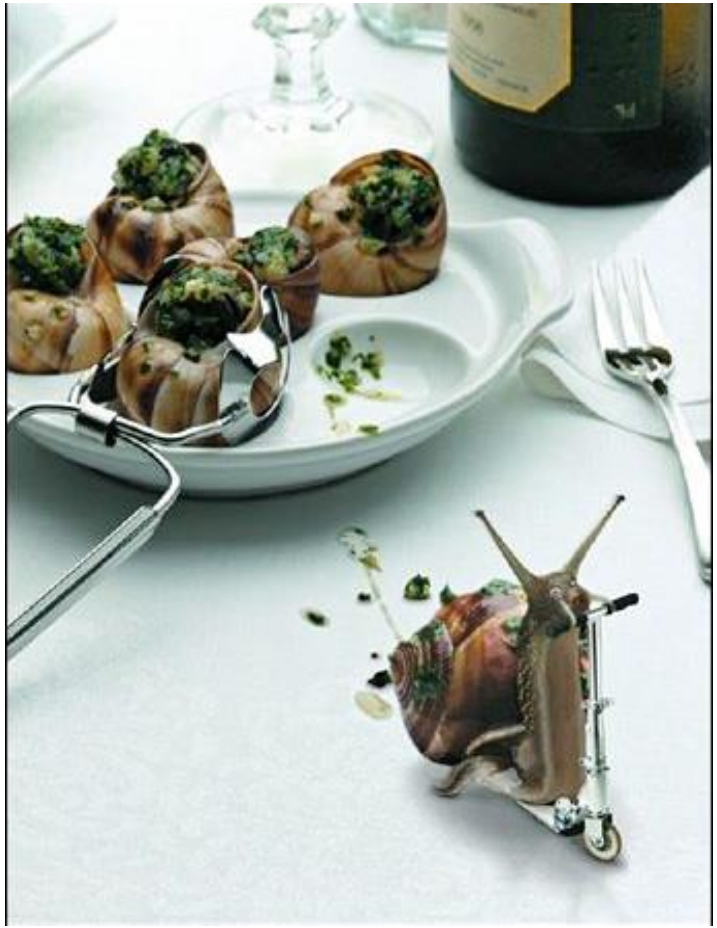
Fælles konsultationer mellem patient, almen praksis og sygehus specialist

Men patienterne indsamler jo hver især bunker af data - Vi skal lære at anvende patientens data bedre, så vi f.eks kan finde højrisikanterne og undgå at bruge ressourcerne på de andre.

Nationalt genomcenter

Og mange andre innovative elektroniske apparater

- Kamerapille
- Ultralyd, diverse sensorer
- Robotteknologi
- VR
- CRISPR
- Kunstige organer – 3D printede
- Og meget meget andet



Mere vidensdeling:
www.sas.com/nordichealthcare

sas.com