



Att följa upp läkemedelsförskrivningar

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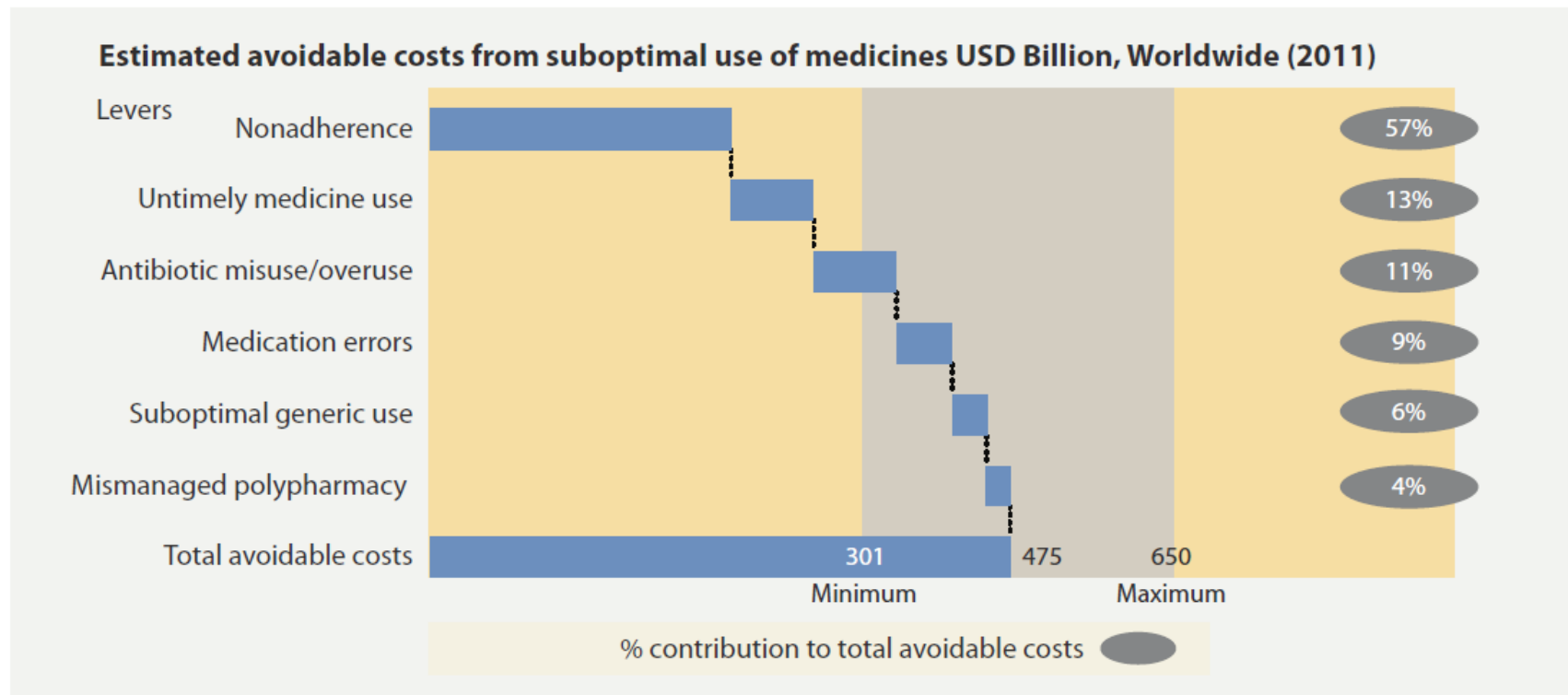
Läkemedel – varför är det viktigt?

- Viktigaste terapeutiska åtgärden
- Område under snabb utveckling
- Många kvalitetsbrister
- Betydande del av kostnader för hälso- och sjukvården
- Miljöpåverkan



What is the quantified opportunity?

About \$500Bn dollars may be avoided through better responsible medicine use



Viktig uppföljning om läkemedel

Medical

Benefit vs risk in different groups

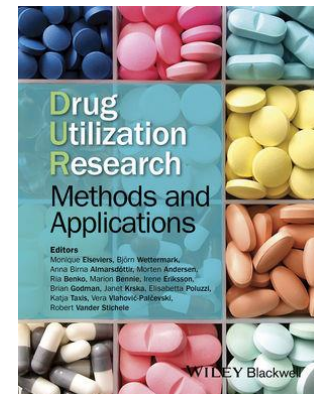
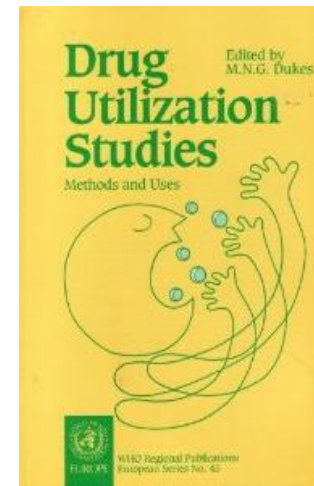
Social

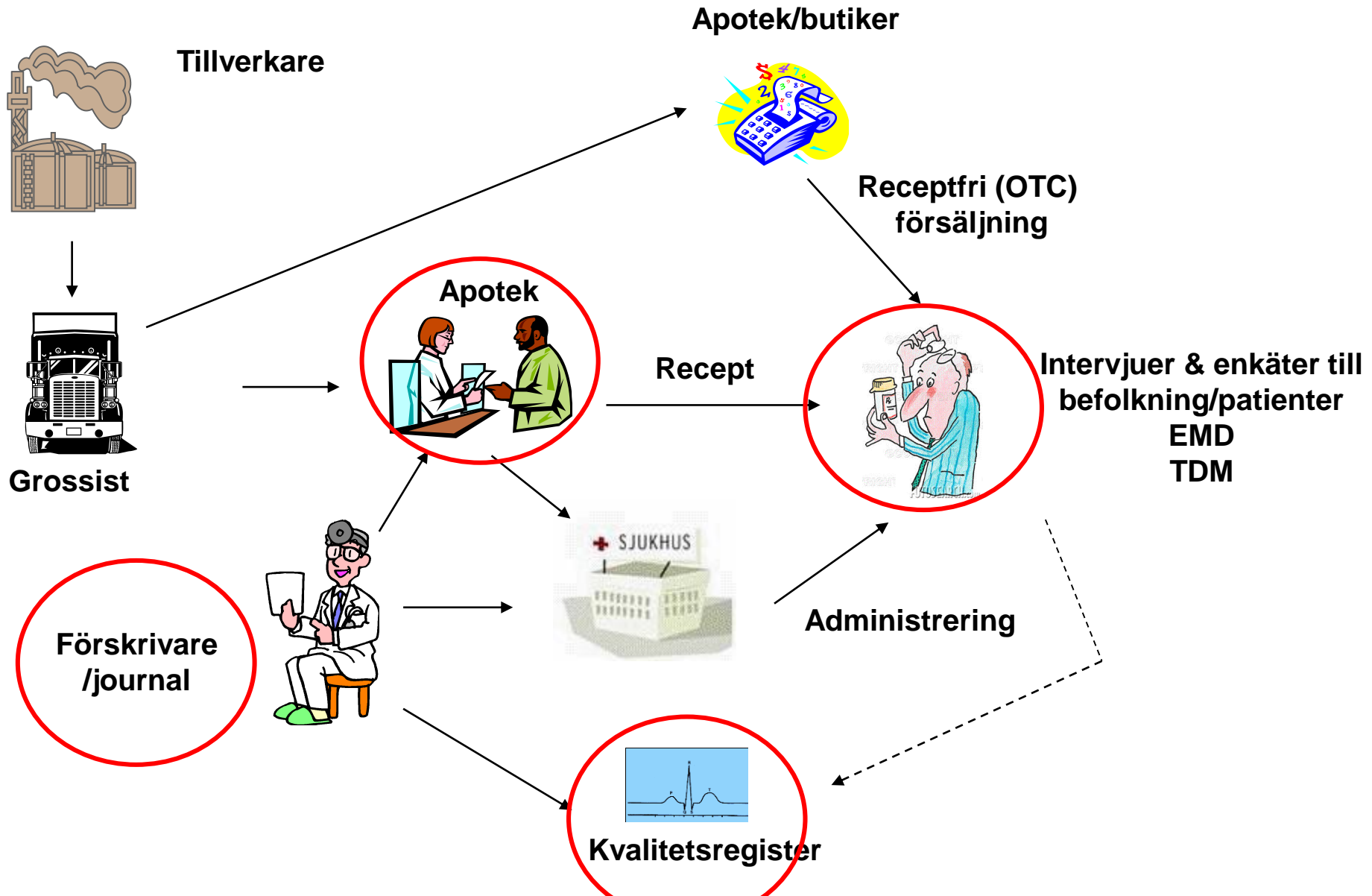
Attitudes, drug abuse and dependence.

Improper use of drugs, discrimination and social injustice, effect of interventions

Economic

Drug prices and costs, new drugs, generics, costs of drug versus non-drug treatment

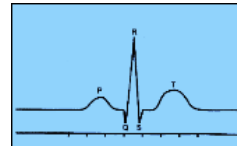




Kvalitetsindikatorer för läkemedel



**Patientspecifika
indikatorer**



**Diagnosspecifika
indikatorer**



**Läkemedelsspecifika
indikatorer med
individdata**

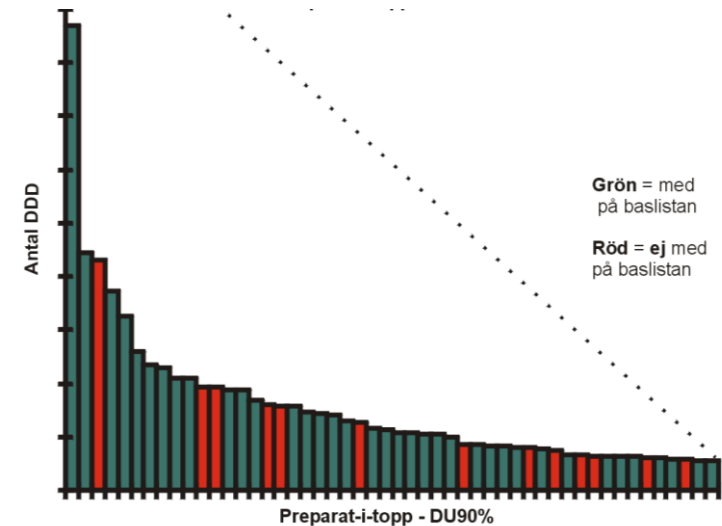
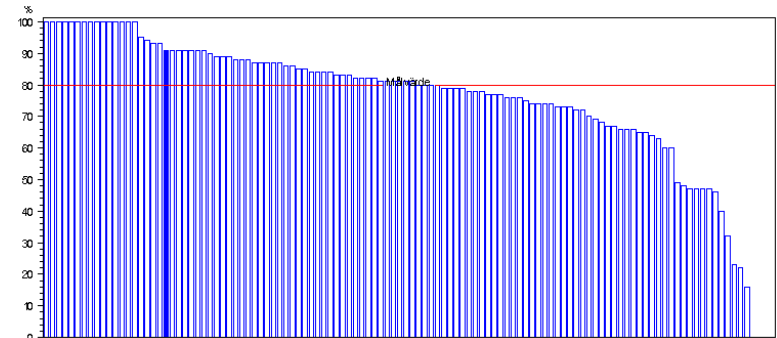


**Läkemedelsspecifika
indikatorer utan
individdata**

Kostnad & volym

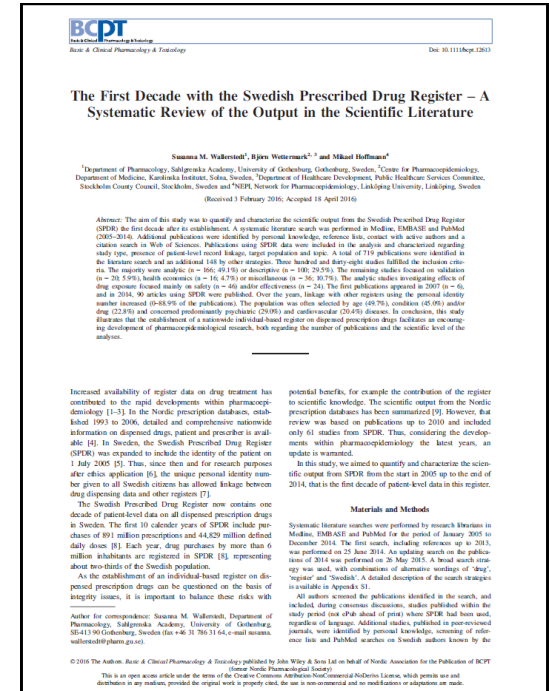
Uppföljning av förskrivning - utan individdata

- Kostnader & volymer
- Olämpliga läkemedel (till barn, äldre)
- Kvoter
- Följsamhet till rekommendationer
- DU90%



Individdata ger nya möjligheter

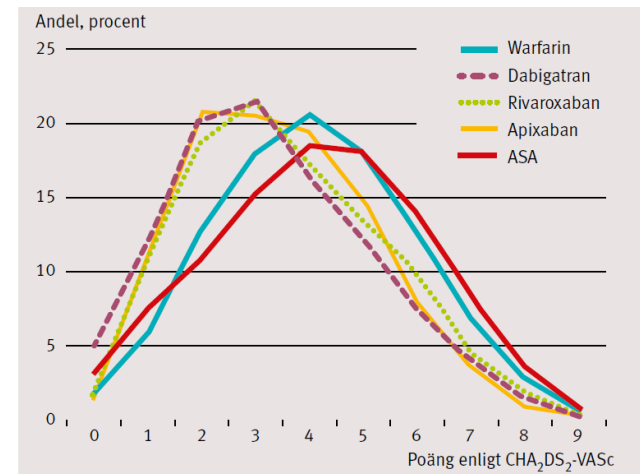
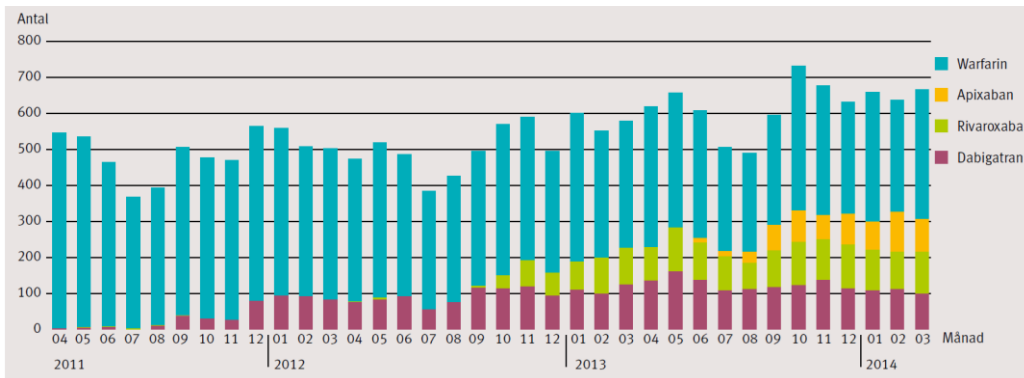
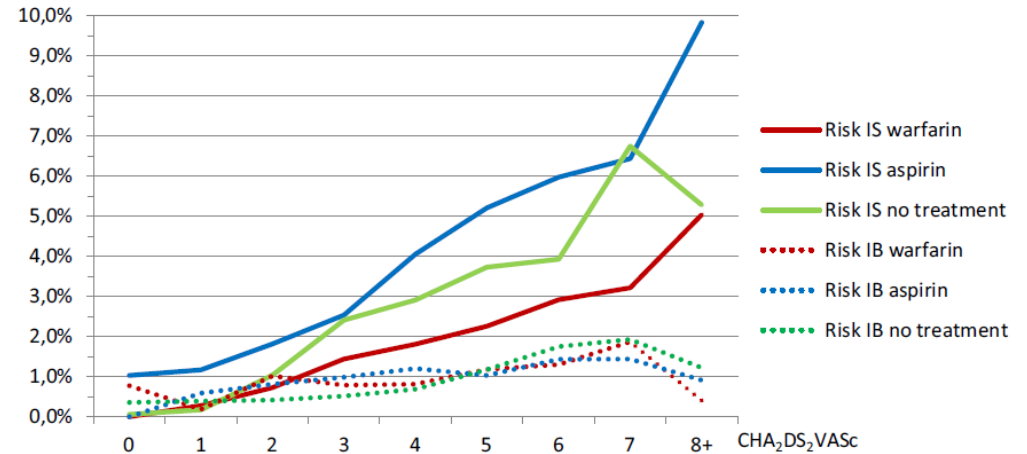
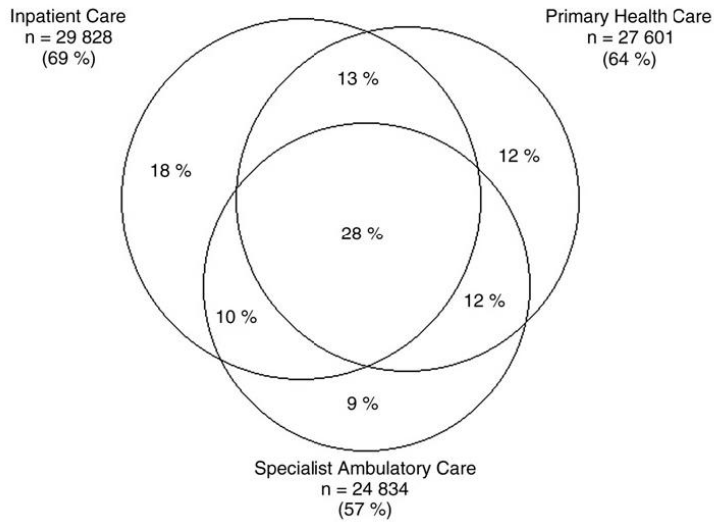
- Antal individer – prevalens & incidens
- Polyfarmaci
- Interaktioner
- Kombinationer
- Dubbelmedicinering
- Doseringar
- I vilken ordning läkemedlen satts in
- Utköpsintervall (mått på compliance)



Uppföljningsmöjligheter

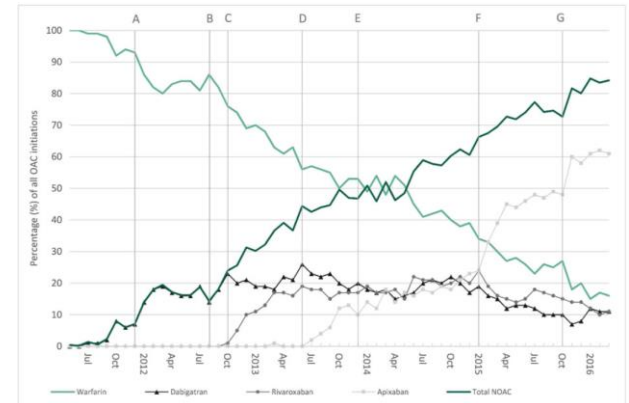
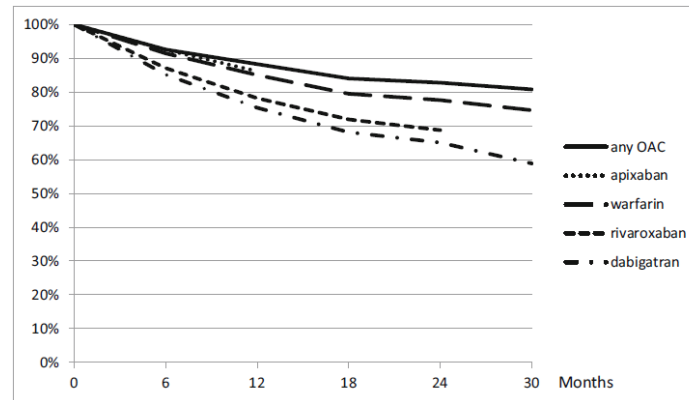
	PAS-reg	Journaler	Qreg	
• Diagnoser	X		X	(X)
• Besök	X		(X)	
• Inläggningar	X	(X)		
• Listning	X			
• Dödsfall	X			
• Förskrivning recept		X	(X)	
• Läkemedelsuttag recept	X			
• Läkemedel i slutenvård			X	(X)
• Labdata			X	(X)
• Behandlingsresultat	(X)	(X)	(X)	

Uppföljning av NOAK i SLL



Uppföljning av NOAK i SLL

Dabigatran	
CHA2DS2-VASc score (ref: 0)	aOR (95%-CI)
1	0,63 (0,44; 0,93)
2-4	0,47 (0,34; 0,65)
≥5	0,45 (0,32; 0,64)
ATRIA score (ref: 0-3)	
4	1,18 (0,85; 1,65)
5-10	0,52 (0,39; 0,70)
Age group (ref: 0-65)	
66-75	0,77 (0,63; 0,95)
76-85	0,56 (0,44; 0,72)
>85	0,47 (0,34; 0,65)

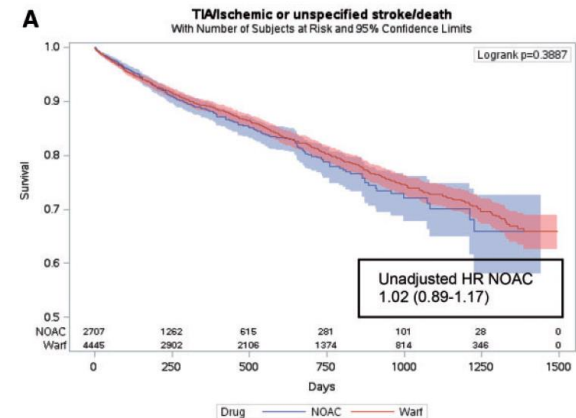


The sex differences observed in 2011 with fewer women using oral anticoagulants had disappeared in 2015 except in women 80 years and older and in patients with complicated co-morbidity.

Table 2 Hazard ratios (HR) of study outcomes in 22 198 OAC-naïve patients with non-valvular AF initiated on anti-coagulant treatment; NOAC vs. warfarin

Endpoint	NOAC vs. warfarin				
	Crude HR (CI 95)	Adjusted HR (CI 95)	Intention-to-treat Adjusted HR (CI 95)	Fully adjusted HR (CI 95)	(CHA2DS2VASc 2-9) Adjusted HR (CI 95)
TIA/ischaemic stroke/stroke unspecified/death	0.83 ^a (0.74–0.92)	0.94 (0.85–1.05) ^b	0.91 ^a (0.83–1.00) ^b	0.92 (0.83–1.03) ^c	0.97 (0.87–1.08) ^b
TIA/ischaemic stroke/stroke unspecified	0.86 (0.72–1.03)	0.93 (0.78–1.12) ^b	0.95 (0.81–1.11) ^b	0.92 (0.77–1.10) ^c	0.98 (0.82–1.18) ^b
Ischaemic stroke	0.75 ^a (0.60–0.95)	0.83 (0.65–1.04) ^b	0.90 (0.73–1.10) ^b	0.81 (0.64–1.02) ^c	0.84 (0.66–1.06) ^b
Death	0.81 ^a (0.71–0.92)	0.95 (0.83–1.07) ^b	0.89 ^a (0.80–1.00) ^b	0.93 (0.81–1.05) ^c	0.97 (0.85–1.10) ^b
Any severe bleed	0.95 (0.82–1.10)	1.02 (0.88–1.19) ^d	0.94 (0.82–1.08) ^d	1.01 (0.87–1.17) ^c	1.02 (0.88–1.20) ^d
Hospitalized bleed	0.81 ^a (0.68–0.98)	0.90 (0.75–1.08) ^d	0.81 ^a (0.69–0.96) ^d	0.89 (0.74–1.07) ^c	0.93 (0.77–1.12) ^d
Any intracranial bleed	0.66 ^a (0.49–0.90)	0.72 ^a (0.53–0.97) ^d	0.64 ^a (0.49–0.85) ^d	0.69 ^a (0.51–0.94) ^c	0.73 (0.54–1.00) ^d
Haemorrhagic stroke	0.54 ^a (0.33–0.89)	0.56 ^a (0.34–0.93) ^d	0.55 ^a (0.34–0.87) ^d	0.55 ^a (0.33–0.91) ^c	0.55 ^a (0.33–0.92) ^d
Gastrointestinal bleed	1.19 (0.97–1.47)	1.28 ^b (1.04–1.59) ^d	1.15 (0.95–1.39) ^d	1.28 ^b (1.03–1.58) ^c	1.32 ^b (1.06–1.64) ^d

^aSignificant differences compared with warfarin are denoted.
^bAdjusted for individual CHA₂DS₂-VASc criteria and age as a continuous variable.
^cAdjusted for age, sex, heart failure, hypertension, diabetes, ischaemic stroke/TIA or peripheral embolus, vascular disease, cancer, dementia, alcohol abuse, anaemia, venous thromboembolism, renal disease, liver disease, obesity, COPD/emphysema, any severe bleed, frequent falls, prior low-dose aspirin, prior clopidogrel, prior ticagrelor, and prior prasugrel.
^dAdjusted for sex and individual HAS-BLED criteria with age as a continuous variable.



Studier om AF och NOAK i SLL

- Forslund T et al. Risks for stroke and bleeding with Warfarin and Aspirin in Patients with Atrial Fibrillation at Different CHA2DS2VASc-scores: Experience from the Stockholm Region. *Eur J Clin Pharmacol* 2014;70:1477-85
- Forslund T et a. Fler med förmaksflimmer får antikoagulantia sedan NOAK kom. *Läkartidningen* 2014;111
- Forslund T et al. Comparison of treatment persistence with different oral anticoagulants in patients with atrial fibrillation. *Eur J Clin Pharmacol.* 2016;72:329-38
- Komen et al. Effects of policy interventions on the introduction of novel oral anticoagulants in Stockholm: an interrupted time series analysis. *Br J Clin Pharmacol.* 2016 Oct 11. doi: 10.1111/bcp.13150.
- Forslund T et al. Stroke and bleeding with NOAC or warfarin treatment in patients with non-valvular atrial fibrillation: a population based cohort study. *Europace* 2017 Feb 8. doi: 10.1093/europace/euw416.
- Komen J et al. Factors associated with antithrombotic treatment choices for stroke prevention in atrial fibrillation in the Stockholm region since the introduction of the NOACs. *Eur J Clin Pharmacol.* 2017 Jun 29. doi: 10.1007/s00228-017-2289-0. [Epub ahead of print]
- Loikas D et al. Increased thromboprophylactic treatment in patients with atrial fibrillation after the introduction of NOACs – an analysis of sex and gender differences. *Am J Cardiol.* 2017 Jul 21. pii: S0002-9149(17)31166-9

Möjligheter att följa läkemedel

- Kostnader & Volymer
- Antal behandlade
- Förskrivningsorsak/diagnos
- Icke-farmakologisk terapi
- Nyttan/vinsterna med behandlingen
- Compliance
- Patientens livskvalitet
- Patienternas delaktighet i terapin



Beror på terapiområde!



Don't get the impression that I m knocked out!!!
This is in fact the starting position

MAGIA.