



Karolinska
Institutet

Mortality and drug prescription patterns after anthroposophic integrative care and conventional care for patients with pain and stress disorders

T Sundberg^{1,2}, M Petzold³, N Kohls^{4,5}, T Falkenberg^{1,2}

¹Karolinska Institutet, Sweden; ²The Integrative Care Science Centre, Sweden; ³Centre for Applied Biostatistics, University of Gothenburg, Sweden; ⁴Generation Research Program, University of Munich, Germany; ⁵Samueli Institute, USA

- Ideas driven non-profit IC scarce in Swedish healthcare
- Leading example – Vidarkliniken – largest anthroposophic hospital in Scandinavia
- Founded 1985, 173 employees, 74 beds
- Integrate conventional and anthroposophic therapies
- Rehabilitation of chronic pain and stress disorders
- Contracts with major Swedish county councils
- Lack of randomised clinical trials
- Lack of evaluations based on external registry data





VIDARKLINIKEN

EN UNIK KOMBINATION AV SKOLMEDICIN
OCH ANTROPOSOFISK LÅKEKONST

"... A unique combination of conventional medicine, naturopathic, physical and artistic therapies, harmonious environment and nourishing diet."

"... A holistic view of human beings as means ensuring the physical, mental and existential/spiritual aspects interact in health and disease."

www.vidarkliniken.se

“What data is already out there?”



VIDARKLINIKEN

EN UNIK KOMBINATION AV SKOLMEDICIN
OCH ANTROPOSOFISK LAKEKONST



Stockholms läns landsting



Karolinska
Institutet



Försäkringskassan



Socialstyrelsen



Objectives



To explore

- *Mortality & Drug prescriptions (primary)*
- *Revisits for target diagnosis & comorbidity/disease load (secondary)*

for patients having received anthroposophic integrative care (IC) or conventional care (CC) for pain and stress disorders.



Methods

Retrospective analyses of registry data

6 years (2005 to 2010)

Data collected from high quality national/state and county council registries

- *National death cause registry*
- *National drug prescription registry*
- *Stockholm County council registries of health care utilisation*



Methods

Two target areas

→ Pain disorders (ICD-10: M79)

"Other soft tissue disorders, not elsewhere classified"

→ Stress disorders (ICD-10: F43)

"Reaction to severe stress and adjustment disorders"

Matching of IC and CC patients

- *Target diagnosis*
- *Age*
- *Gender*
- *Sociodemographics*



Outcomes

- All cause mortality
- Prescribed defined daily dosages (DDD)
90/180 days pre/post index visit
 - ATC code M: e.g. anti inflam, muscle relaxants*
 - ATC code N02: e.g. analgesics, opioids*
 - ATC code N05: e.g. psycholeptics, hypnotics, sedatives*
- Revisits for target diagnoses
 - 90/180 days after index visit*
- Comorbidity/disease profile
 - Frequency of ICD-10 categories 1 year pre/post index visit (descriptive)*



Results

Trends in “raw” registry data

“Relative risk of mortality and total drug prescriptions were lower for patients having received IC. Disorder specific drug prescriptions were similar within IC and CC for PAIN but for STRESS lower within IC.”



**Karolinska
Institutet**

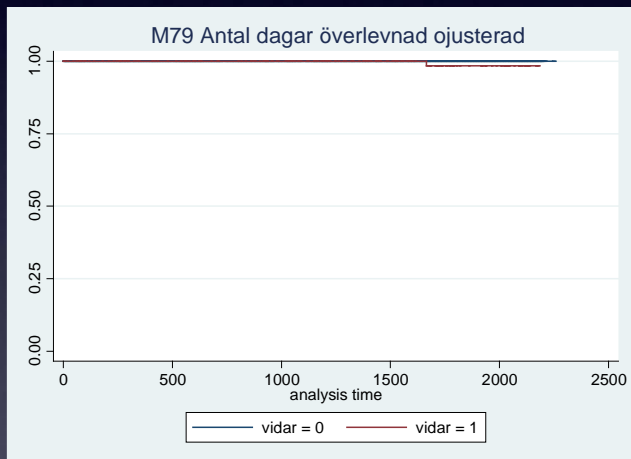
Results

Matching characteristics

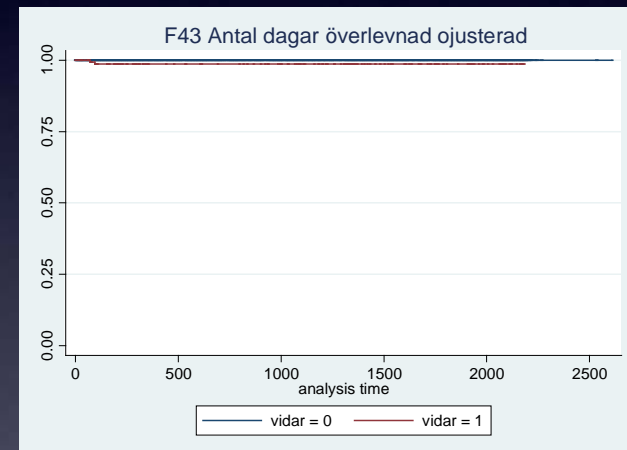
	Pain (m79)		Stress (f43)	
	IC (n 213)	CC (n 1050)	IC (n 161)	CC (n 1571)
Female, %(n)	100 (213/213)	100 (1050/1050)	91 (147/161)	91 (1431/1571)
Age				
0-39 years, %(n)	19 (41/213)	19 (200/1050)	20 (32/161)	19 (300/1571)
40-49 years, %(n)	32 (68/213)	30 (320/1050)	39 (62/161)	39 (615/1571)
50-59 years, %(n)	36 (76/213)	37 (390/1050)	29 (47/161)	29 (456/1571)
60+ years, %(n)	13 (28/213)	13 (140/1050)	12 (20/161)	13 (200/1571)
Sociodemographic classification (Mosaic)				
High, %(n)				
Affluent, %(n)	48 (103/213)	49 (515/1050)	51 (82/161)	52 (820/1571)
Low, %(n)	19 (41/213)	19 (205/1050)	17 (28/161)	18 (290/1571)
Missing, %(n)	31 (66/213)	31 (330/1050)	30 (48/161)	29 (461/1571)
	1 (3/213)	0	2 (3/161)	0

Results

Survival (all cause mortality)



Pain

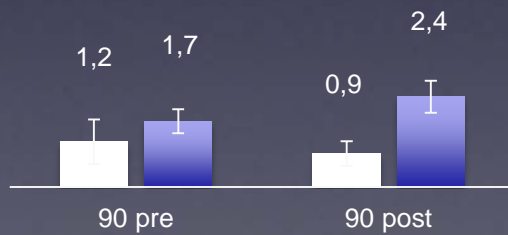


Stress

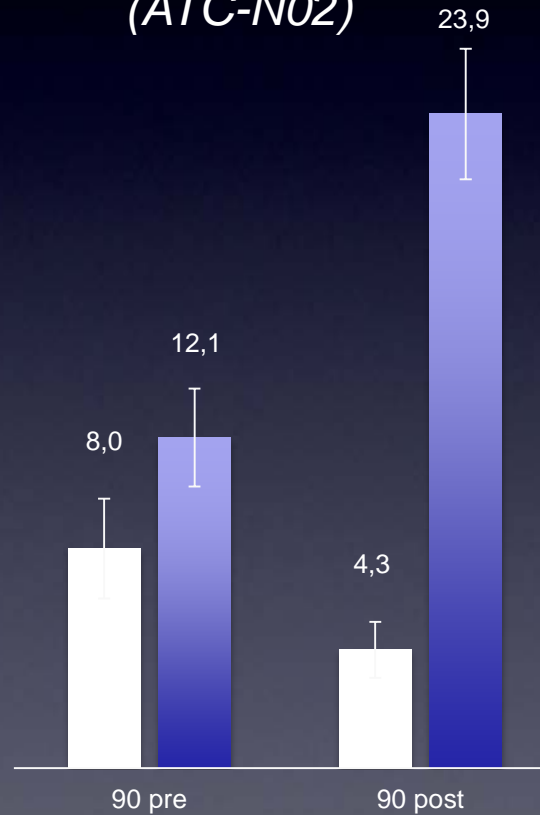
PAIN (M79): Prescribed DDDs

■ IC ■ CC

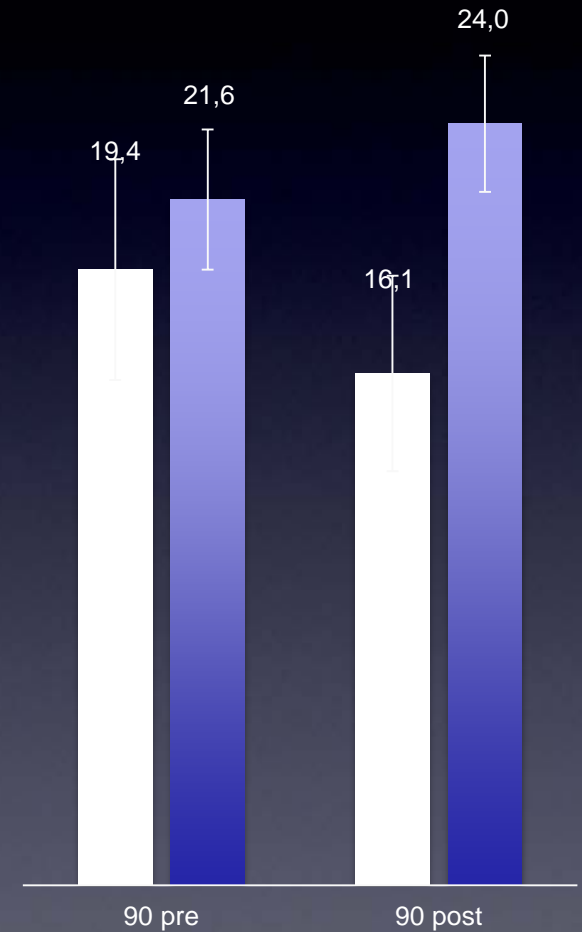
*Anti infl,
muscle relaxants
(ATC-M)*



*Analgesics, opioids
(ATC-N02)*



*Psycholeptics, hypnotics,
sedatives (ATC-N05)*



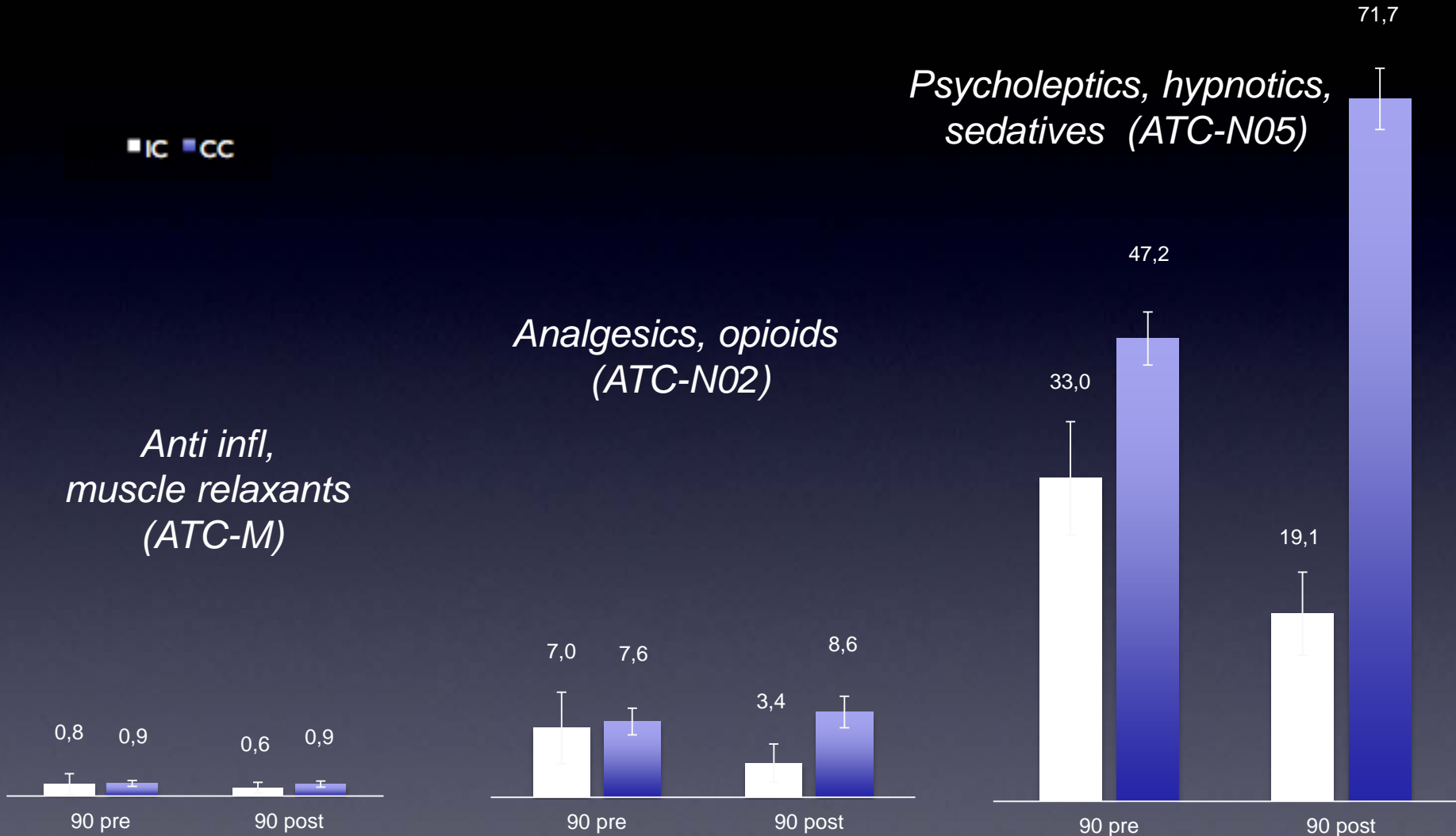
STRESS (F43): Prescribed DDDs

■ IC ■ CC

*Psycholeptics, hypnotics,
sedatives (ATC-N05)*

*Anti infl,
muscle relaxants
(ATC-M)*

*Analgesics, opioids
(ATC-N02)*





Revisits target diagnosis



Karolinska
Institutet

Pain (M79)

Revisits target diagnosis	IC (n 213) % (n)	CC (n 1094) % (n)	CC – IC % point difference (p)
Within 90 days			
1 visits	2.4 (5/213)	5.3 (58/1094)	3.0 (0.079)
2 visits	0	0.8 (9/1094)	0.8 (0.370)
3 visits	0	0.3 (3/1094)	0.3 (1.000)
4 visits	0	0.1 (1/1094)	0.1 (1.000)
Within 180 days			
1 visits	2.4 (5/213)	6.5 (71/1094)	4.1 (0.022) *
2 visits	0	1.1 (12/1094)	1.1 (0.233)
3 visits	0	0.3 (3/1094)	0.3 (1.000)
4 visits	0	0.2 (2/1094)	0.2 (1.000)
5 visits	0	0.1 (1/1094)	0.2 (1.000)



Revisits target diagnosis

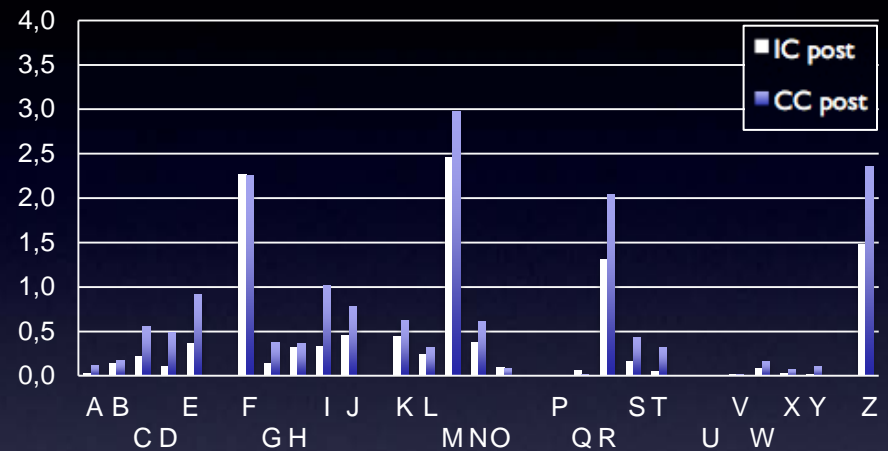
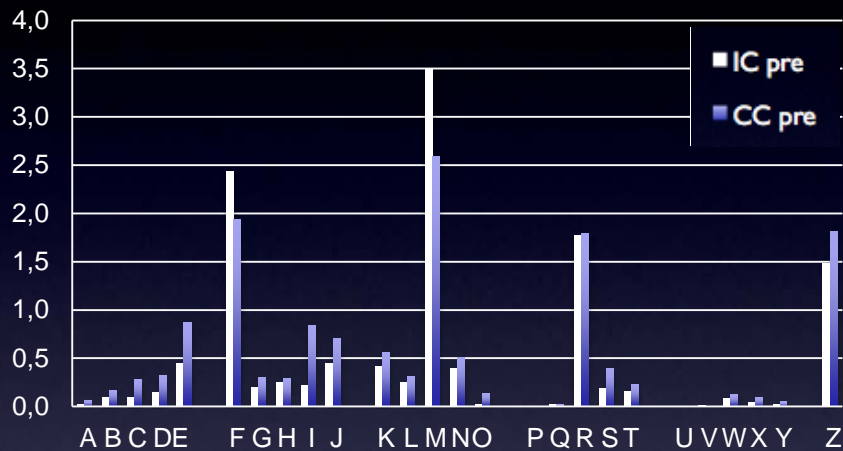


Stress (F43)

Revisits target diagnosis	IC (n 161) % (n)	CC (n 1589) % (n)	CC – IC % point difference (p)
Within 90 days			
1 visits	3.7 (6/161)	14.0 (222/1589)	10.2 (0.000) ***
2 visits	0	2.2 (35/1589)	2.2 (0.068)
3 visits	0	0.6 (9/1589)	0.6 (1.000)
4 visits	0	0.2 (3/1589)	0.2 (1.000)
5 visits	0	0.1 (2/1589)	0.1 (1.000)
Within 180 days			
1 visits	5.0 (8/161)	15.0 (238/1589)	10.0 (0.001) ***
2 visits	0	2.9 (46/1589)	2.9 (0.031) *
3 visits	0	0.8 (13/1589)	0.8 (0.623)
4 visits	0	0.1 (2/1589)	0.1 (1.000)
5 visits	0	0.3 (4/1589)	0.3 (1.000)
6 visits	0	0.1 (1/1589)	0.1 (1.000)

Comorbidity/disease profile

PAIN (M79) Frequency distribution of ICD-10 categories 365 days BEFORE & AFTER



ICD-10 categories overview

A00-B99 Infectious & parasitic

C00-D48 Neoplasms

D50-D89 Blood & immune

E00-E90 Endocrine, nutritional & metabolic

F00-F99 Mental & behavioural

G00-G99 Nervous system

H00-H59 Eye

H60-H95 Ear and mastoid

I00-I99 Circulatory system

J00-J99 Respiratory system

K00-K93 Digestive system

L00-L99 Skin & tissue

M00-M99 Musculoskeletal system

N00-N99 Genitourinary system

O00-O99 Pregnancy & childbirth

P00-P96 Perinatal period

Q00-Q99 Congenital malformations & chromosomal

R00-R99 Symptoms, signs, findings not elsewhere class

S00-T98 Injury, poisoning

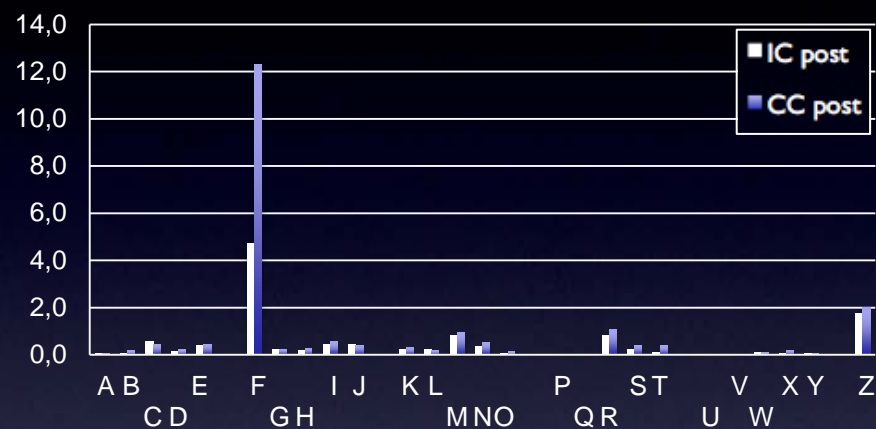
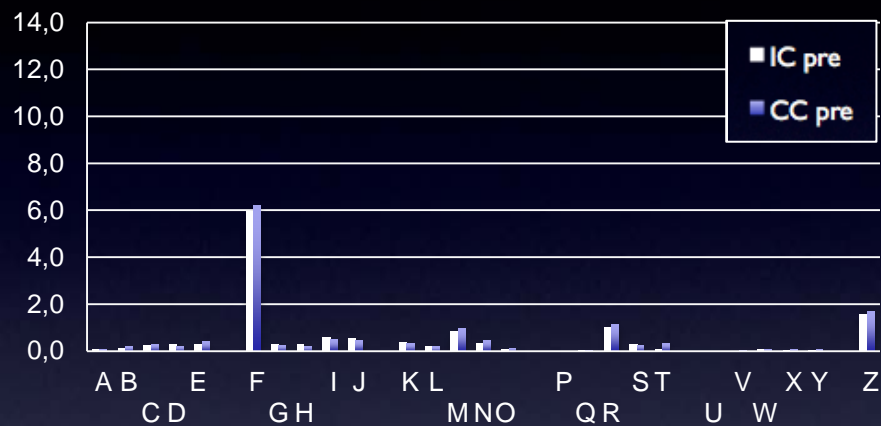
U00-U99 Codes for special purposes

V01-Y98 External causes of morbidity and mortality

Z00-Z99 Factors influencing health and contact with health services

Comorbidity/disease profile

STRESS (F43) Description of frequency of ICD-10 categories 365 days BEFORE & AFTER



ICD-10 categories overview

A00-B99 Infectious & parasitic

C00-D48 Neoplasms

D50-D89 Blood & immune

E00-E90 Endocrine, nutritional & metabolic

F00-F99 Mental & behavioural

G00-G99 Nervous system

H00-H59 Eye

H60-H95 Ear and mastoid

I00-I99 Circulatory system

J00-J99 Respiratory system

K00-K93 Digestive system

L00-L99 Skin & tissue

M00-M99 Musculoskeletal system

N00-N99 Genitourinary system

O00-O99 Pregnancy & childbirth

P00-P96 Perinatal period

Q00-Q99 Congenital malformations & chromosomal

R00-R99 Symptoms, signs, findings not elsewhere class

S00-T98 Injury, poisoning

U00-U99 Codes for special purposes

V01-Y98 External causes of morbidity and mortality

Z00-Z99 Factors influencing health and contact with health services



Discussion/conclusion

- Survival
- Drug prescriptions
- Revisits for target diagnosis
- Comorbidity/disease profile
- Methods
- Future studies



Karolinska
Institutet



Thank you!

www.integrativecare.se