From data gathering to comparability

Fred Storms

CBO

The Netherlands

From data gathering to comparability

- EUDIP

- EUCID

- Data Dictionary of Diabetes Indicators

- EUPHIX

- **Establishment of indicators monitoring diabetes mellitus and its morbidity**
  - I. Risk factors for diabetes mellitus
  - II. Epidemiology of diabetes mellitus
  - III. Risk factors for diabetes complications
  - IV. Epidemiology of diabetes complications
- **Final report 2002**
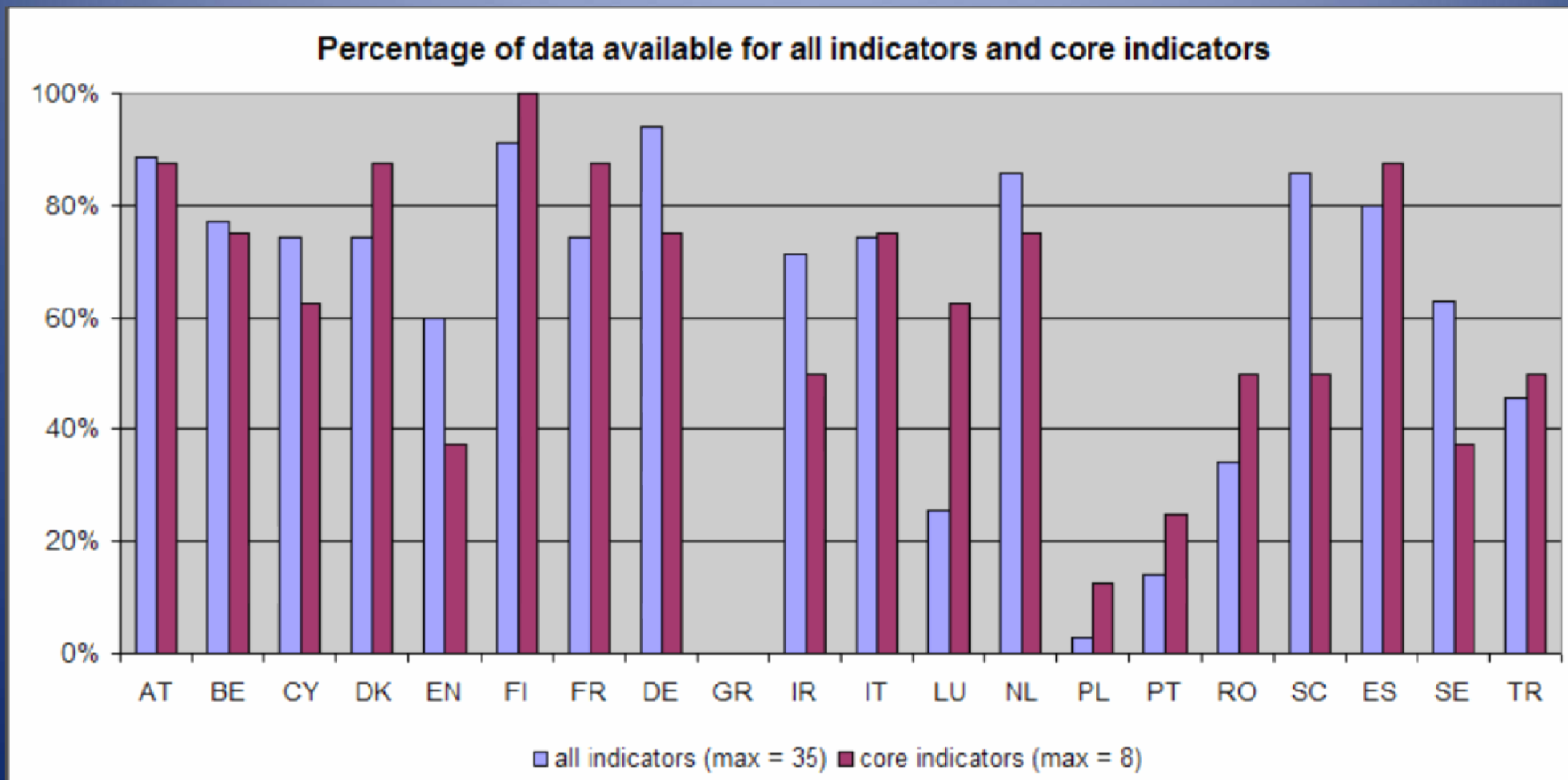
Indicators on Diabetes and risk factors for diabetes

35 indicators
General population
Diabetes population
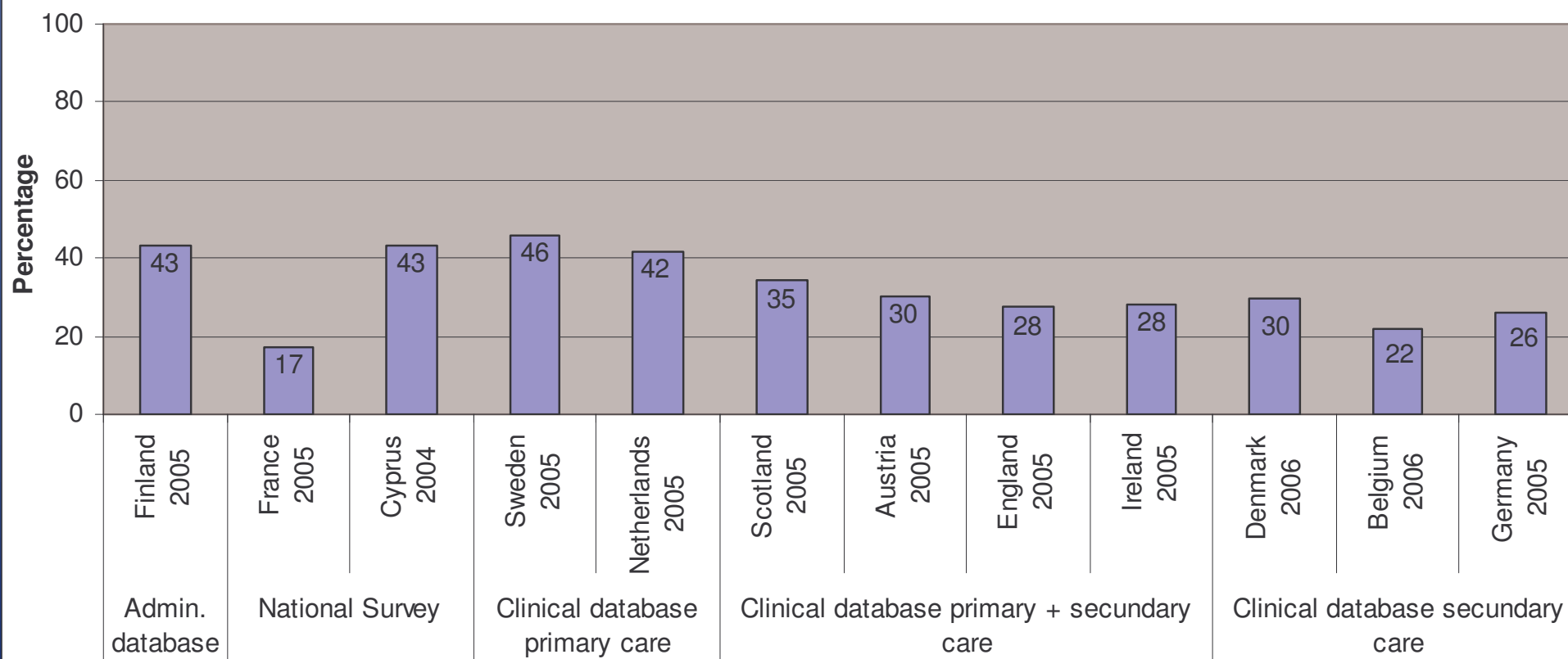   Biochemical
      Physical
      Complications

Represented as
      Bargraphs
      Age bands
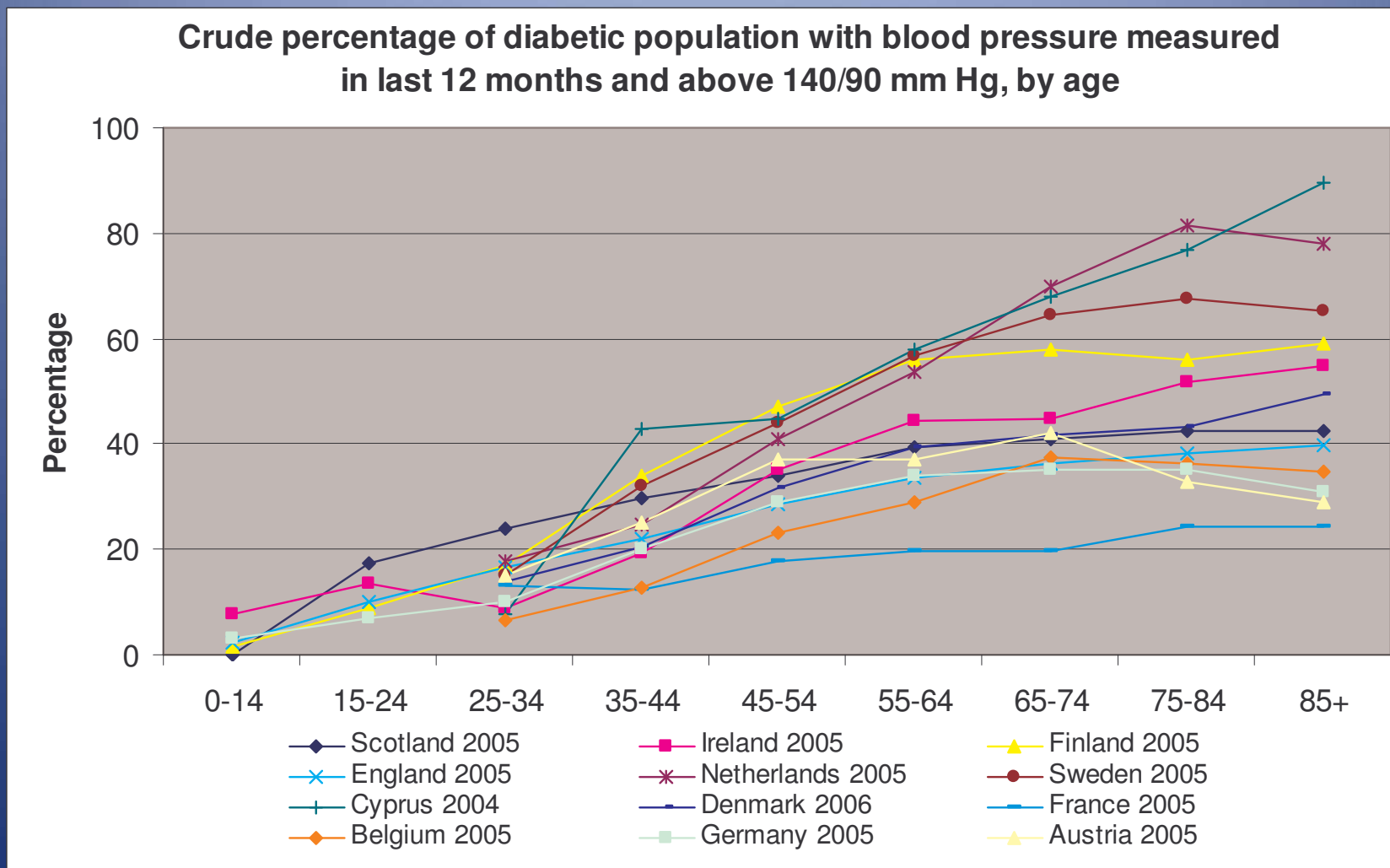   Maps
      Spiderwebs

Data Availability

Percentage of data available for all indicators and core indicators

Elevated blood pressure

Crude percentage of diabetic population aged >25 yr with blood pressure measured in last 12 months and above 140/90 mm Hg

Country	Percentage	Category
Finland 2005	43	Admin. database
France 2005	17	National Survey
Cyprus 2004	43	National Survey
Sweden 2005	46	Clinical database primary care
Netherlands 2005	42	Clinical database primary care
Scotland 2005	35	Clinical database primary + secundary care
Austria 2005	30	Clinical database primary + secundary care
England 2005	28	Clinical database primary + secundary care
Ireland 2005	28	Clinical database primary + secundary care
Denmark 2006	30	Clinical database secundary care
Belgium 2006	22	Clinical database secundary care
Germany 2005	26	Clinical database secundary care

Elevated Blood Pressure by Age

Crude percentage of diabetic population with blood pressure measured in last 12 months and above 140/90 mm Hg, by age

Legend:
- Scotland 2005
- England 2005
- Cyprus 2004
- Belgium 2005
- Ireland 2005
- Netherlands 2005
- Denmark 2006
- Germany 2005
- Finland 2005
- Sweden 2005
- France 2005
- Austria 2005

Conclusions EUCID

- It is a joy to work with other professionals
- Data availability on diabetes and diabetes risk factors in Europe is suboptimal
- Data comparability is low
- Available estimations from IDF are at least suboptimal
- Clinical data originate almost all from regional databases
- EUBIROD is the way to go foreward

BIRO Data Dictonary

Sources used

- Health indicators: EUDIP, ECHI, OECD
- Guidelines: IDF, SIGN, Consensus on diabetic foot, New Zealand, ADA, Canada, German Diabetes Association
- Systematic literature search in: Cochrane database, Medline

B.I.R.O.

Best Information through Regional Outcomes

A Public Health Project funded by the European Commission, DG-SANCO

BIRO Thematic Areas

- Risk profile for Diabetes
- Diagnosis and classification
- Risk profile for complications and intermediate outcomes
- Management and care of diabetes and its comorbidities
- Self management and lifestyle management
- Complications
- Individual characteristics
- Health status
- Demographic and socio-economic factors
- Health system & health care delivery

BIRO Selection Process

- Indicator: "a measure used to determine, over time, performance of functions, processes and outcomes."
- OECD defined selection:
  - Capture important performance aspect
  - Be sufficiently sound
  - Be feasible
- 3 Dimensions per indicator
  - Impact on health
  - Policy importance
  - Susceptibility to be influenced by health care system

BIRO Indicators selected: epidemiology and structure

- Epidemiology:
  - Annual incidence in children of type 1 diabetes
  - Prevalence of diabetes mellitus
  - Age at diagnosis with 10 year age bands
- Structural indicators (regional):
  - Hospital beds per 100.000 population
  - Physicians employed per 100.000 population
  - Number of Diabetologists per 100.000 population
  - Number of doctors taking care of diabetes per 100.000
  - Number of diabetes nurses per 100.000 population
  - Number of physicians in DMP per 1000 diabetes
  - Portion of diabetes patients in DMP

BIRO Indicators: process

- Examined during last 12 months:
  - HbA1c
  - Total/HDL cholesterol
  - Micro-albuminurea
  - Eye examination
  - Foot examination
  - Smoking status
  - Serum creatinine
  - Blood pressure

- Elevated RR and med.
- Portion with RR med.
- Number anti RR med. Used
- Number lipid med.
- At least once education
- Number on self monit.
- Oral medication
- Portion Oral/insulin
- Pump therapy %
- Number insulin injections
- Number diet only
- Diagnosed CVD and antiplatelet

BIRO Indicators:
intermediate outcomes

- % HbA1c most recent > 9.0
- % HbA1c most recent <7.5
- % Total/HDL Cholesterol < 4.5
- % RR <140/90
- % BMI > 30
- % with fundus inspection with prol.ret. or maculop.
- % laser treatment ever
- % of tested with micro-albuminurea
- % of current smokers
- % with current alcohol abuse/dependence
- % former or current foot ulceration

BIRO Indicators: final outcome

- Annual incidence of blindness
- Annual incidence of dialysis/transplantation
- ESRD prevalence
- Annual incidence of amputations above ankle
- Annual incidence of stroke
- Annual incidence of MI
- Annual death rate in diabetes adjusted for standard European population

BIRO data items needed

- Indicator needs data
- Data clearly defined in Data-Dictionary
- Information gathering by BIRO system

- New indicators (and consequently data) can be defined by partners in EUBIROD project

- Patient data
- Year of birth
- Sex
- Height
- Epidemiology
- Diabetes type
- Newly diagnosed diabetes
- Year of diagnosis
- Total number of children between 0-14 yrs
- Diabetes y/n
- Total number of general population in area
- Age at diagnosis
- Structural quality
- Hospital beds in area
- Physicians employed in area
- Number of diabetologists in area
- Number of doctors who regularly take care of diabetic patients in diabetes clinics in primary or secondary care in area
- Number of diabetes nurses employed in area
- Number of physicians offering structured Disease Management Programs (DMP) in area
- Patient enrolled in structured Disease Management Program (DMP)
- Process quality
- Number of clinically diagnosed diabetes patients in the area
- HbA1c tested within last 12 months
- Total Chol/HDL tested within last 12 months
- Microalbuminuria tested within last 12 months
- Medical attention for nephropathy within last 12 months
- Dilated eye examination or evaluation of retinal photography by a trained caregiver within the last 12 months
- At least one foot examination within last 12 months
- Smoking status ascertained within last 12 months
- Serum creatinine tested within last 12 months
- One or more blood pressure measurements within last 12 moths
- Hypertension prevalent within last 12 months
- Received antihypertensive medication within last 12 months
- Diabetes specific education at least once before
- Treatment with diet only
- Treatment with sulfonylurea y/n within last 12 months
- Treatment with biguanides within last 12 months
- Treatment with glucosidase inhibitors within last 12 months
- Treatment with glitzones y/n within last 12 months
- Treatment with glinides y/n within last 12 months
- Treatment with insulin within last 12 months
- Pump therapy within last 12 months
- Average number of insulin injections per day
- Self monitoring of blood/urine glucose within last 12 months
- Clinically diagnosed CVD

- Treatment with anti-platelet therapy within last 12 months
- Treatment with lipid lowering medication within last 12 months
- Outcome - intermediate outcomes
- Most recent HbA1c level (number)
- Most recent Total Cholesterol
- Most recent HDL Cholesterol
- Most recent systolic blood pressure
- Most recent diastrolic blood pressure
- Most recent Weight
- Most recent BMI (Calculated from Weight, Height)
- Retinopathy prevalent within last 12 months
- Maculopathy prevalent within last 12 months
- Fundus inspection within last 12 months
- Eye laser treatment ever
- Positive testing for urinary albumin within last 12 months
- Smoking currently
- Current alcohol abuse/dependence
- Former or current foot ulceration
- Outcome - terminal outcomes
- Blindness prevalent
- Blindness newly diagnosed within last 12 months
- Dialysis and/or transplantation new within last 12 months
- ESRD prevalent
- History of amputation above ankle
- Amputation above ankle new within last 12 months
- History of stroke
- Stroke new within last 12 months
- History of myocardial infarction
- Myocardial infarction new within last 12 months
- Death within last 12 months

EUPHIX

- EUPHIX is a web-based knowledge system for health professionals, policy makers and others. It presents structured European public health information, giving a special insight into similarities and differences between EU Member States.

- No data production but data gathering

- Hosted by:

EUPHIX Diabetes Data