

Use of data collection in CroDiab registry for sustainable policy decision making in diabetes

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- collection of various data in chronic diseases over years makes a significant contribution in understanding the burden of chronic disease in a country, helps save cost and makes possible preparing strategies and actions needed to manage the issue of diabetes and its costs through data driven analysis and decisions



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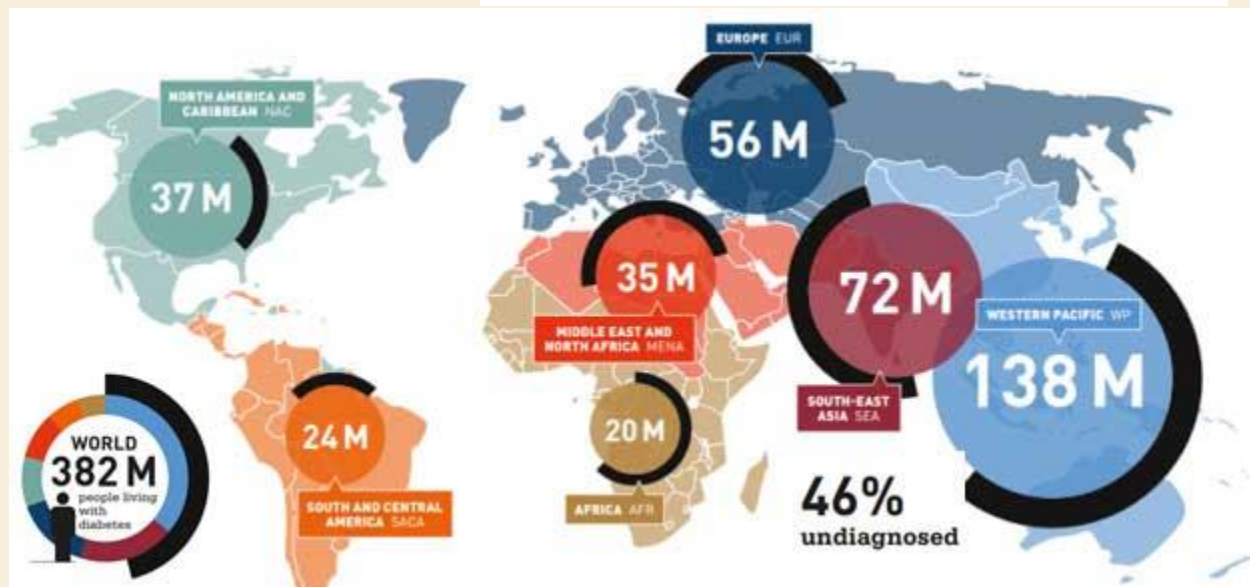
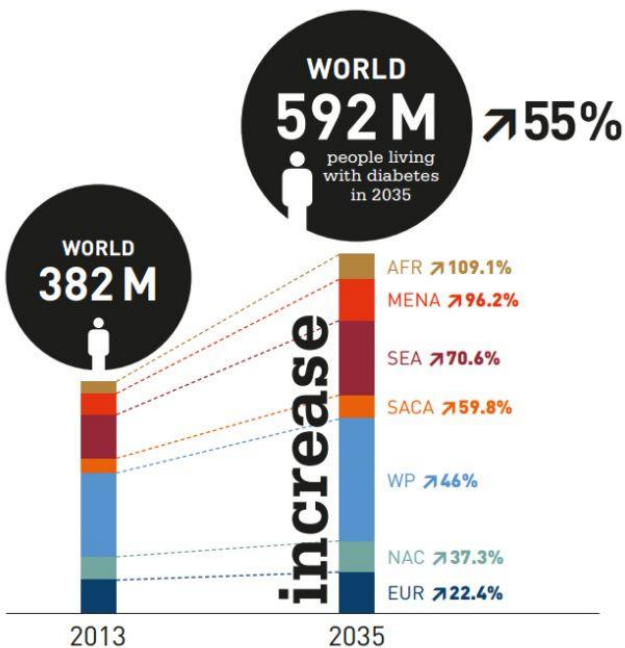
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mortality <60



Proportion of deaths due to diabetes in people under 60 years of age, 2013





Diabetes in Croatia

- burden of disease
- tradition
 - organisation of health care – Croatian model
 - treatment
 - collaboration – diabetologist & patient organisations & patients
- diabetes → NCD model
 - common biomedical and behavioural risk factors (diabetes T2 & cardiovascular disease & cerebrovascular disease & cancer & other NCDs)
 - strength
 - homogeneous entity
 - strong patient organisation



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1970 – reports

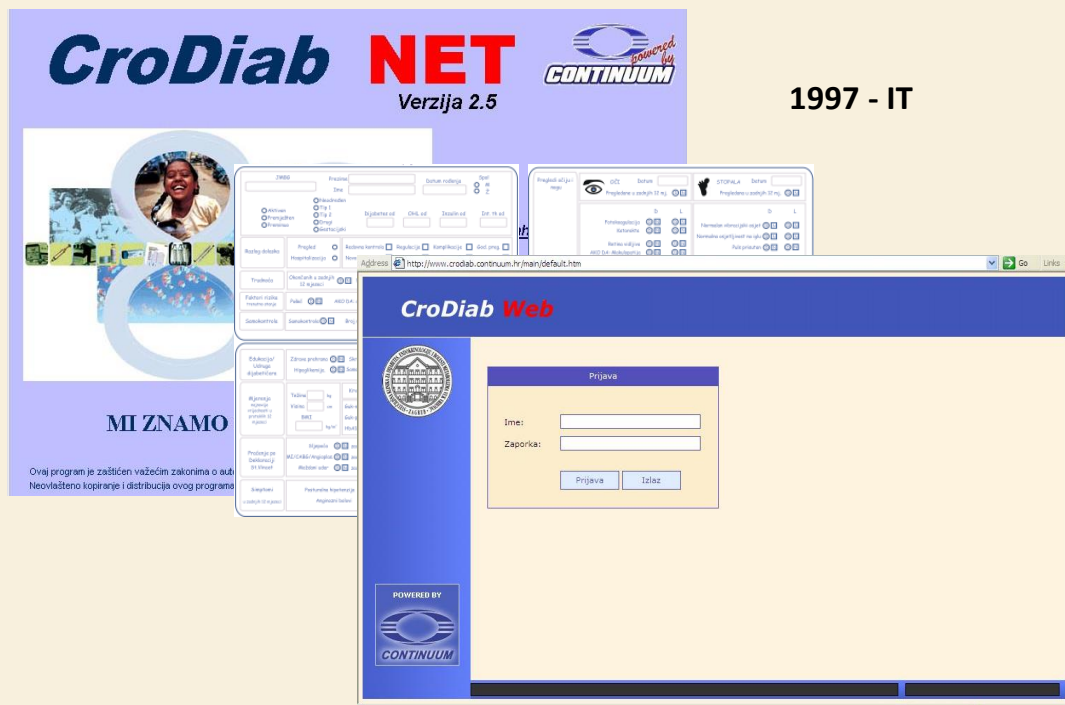
Database

?

Time

1994

POSSIBLE ?



1997 - IT

2004 - WEB

Panel: ŠEĆERNA BOLEST

MKB 10: Godina postavljanja dijagnoze bolesti: Pušanje: DA ☐ NE ☐ Bivši pušač: DA ☐ NE ☐

Tijelena visina: cm ITM: kg/m² 12.06.2014. Konsumiranje alkohola: DA ☐ NE ☐ Tijelena masa: kg Radovita tjelena aktivnost: DA ☐ NE ☐ Opseg struka: cm Pridržavanje dijabetičke dijeta: DA ☐ DIJELOMČNO ☐ NE ☐ Suradivost bolesnika: DA ☐ DIJELOMČNO ☐ NE ☐

GLUKEMIJA: DA ☐ NE ☐ Broj mjerenja GUP/jedan: GUP (pr. vrijednost) mmol/L 12.06.2014. Pregled glikemije u proteklih 12 mjeseci: DA ☐ NE ☐ GUP-ut mmol/L 12.06.2014. GUP-pp mmol/L 12.06.2014. HbA1c: % mmol/mol 12.06.2014. Hospitalizacija u proteklih 12 mjeseci: DA ☐ NE ☐

TERAPIJA: Broj hipoglikemija / 3 mjeseca: Broj teških hipoglikemija / 3 mjeseca: Broj noćnih hipoglikemija / 3 mjeseca: Broj asimptomatskih hipoglikemija / 3 mjeseca:

ARTERIJSKI TLAK: Pregled kardiologa u proteklih 12 mjeseci: DA ☐ NE ☐ Pregled oftalmologa u proteklih 12 mjeseci: DA ☐ NE ☐ Pregled nefrologa u proteklih 12 mjeseci: DA ☐ NE ☐

UPIDOGRAM: HDL kolesterol mmol/L 12.06.2014. LDL kolesterol mmol/L 12.06.2014. TERAPIJA: naziv lijeka dnevna doza 12.06.2014. naziv lijeka dnevna doza 12.06.2014. naziv lijeka dnevna doza 12.06.2014.

BUBRŽNA FUNKCIJA: onjor albumin/kreatinin (urin) mg/L 12.06.2014. albumin (urin) mg/L 12.06.2014. proteini (urin) mg/L 12.06.2014. kreatinin (serum) g/mol/L 12.06.2014. proc. glomerularna filtracija (ml/min/1.73 m²) 12.06.2014.

PREGLED OČU: Nema znakova dijabetičke retinopatije: DA ☐ NE ☐ 12.06.2014. Njagroferativna retinopatija: DA ☐ NE ☐ Proliferativna retinopatija: DA ☐ NE ☐ Makuropatija: DA ☐ NE ☐

PREGLED STOPALA: Dijagnostična dijaba. polineuropatija: DA ☐ NE ☐ 12.06.2014. Zacipljenost u proteklih 12 mjeseci: DA ☐ NE ☐ Pregled stopala: DA ☐ NE ☐ 12.06.2014. Aluzni urasci/gangrena (12 mjeseci): DA ☐ NE ☐ Pravešćenje/angiotonika (12 mjeseci): DA ☐ NE ☐ Amputacija udova (12 mjeseci): DA ☐ NE ☐ Arterijske pulsacije prisutne: DA ☐ NE ☐ 12.06.2014. jela prijet: DA ☐ NE ☐ 12.06.2014. 12.06.2014. 12.06.2014.

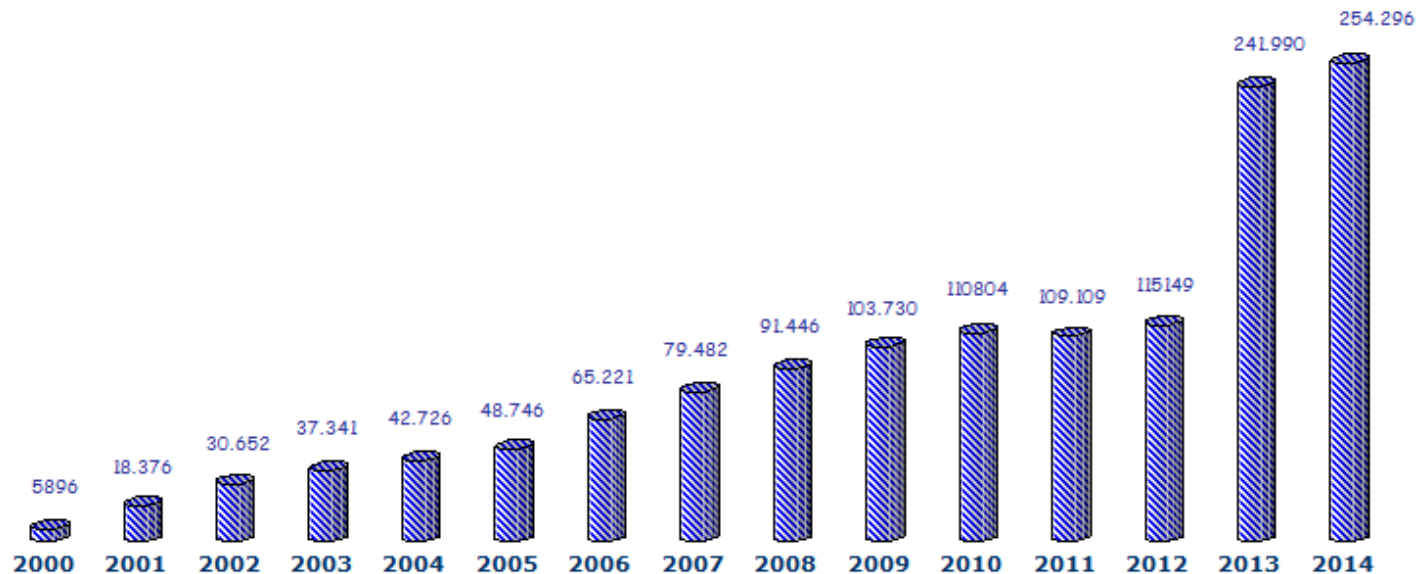


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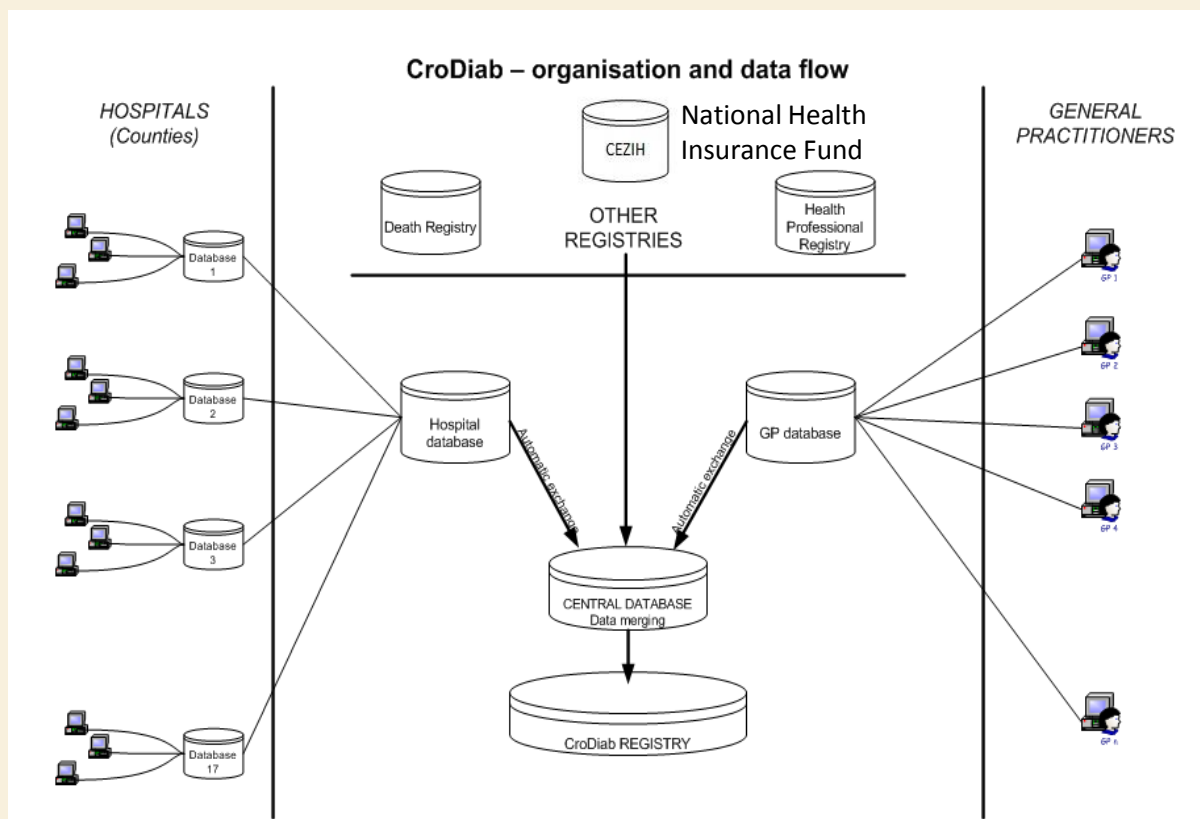
Diabetes in Croatia

data



Indicators

- Patient ID
- Data Source ID
- Type Of Diabetes
- Sex
- Date of Birth
- Date of Diagnosis
- Episode Date
- Smoking Status
- Cigarettes per Day
- Alcohol Intake
- Weight
- Height
- Body Mass Index
- Systolic Blood Pressure
- Diastolic Blood Pressure
- HbA1c
- Creatinine
- Microalbumin
- Total Cholesterol
- HDL
- Triglycerides
- Eye Examination
- Retinopathy Status
- Maculopathy Status
- Foot Examination
- Foot Pulses
- Foot Sensation
- Average Injections
- Self-Monitoring
- Diabetes-Specific Education
- Lipid Lowering Therapy
- End-Stage Renal Therapy
- Stroke
- Active Foot Ulcer
- Myocardial Infarction
- Laser
- Hypertension
- Blindness
- Amputation
- Antihypertensive Medication
- Hypoglycaemic Drug Therapy
- Oral Drug Therapy
- Pump Therapy

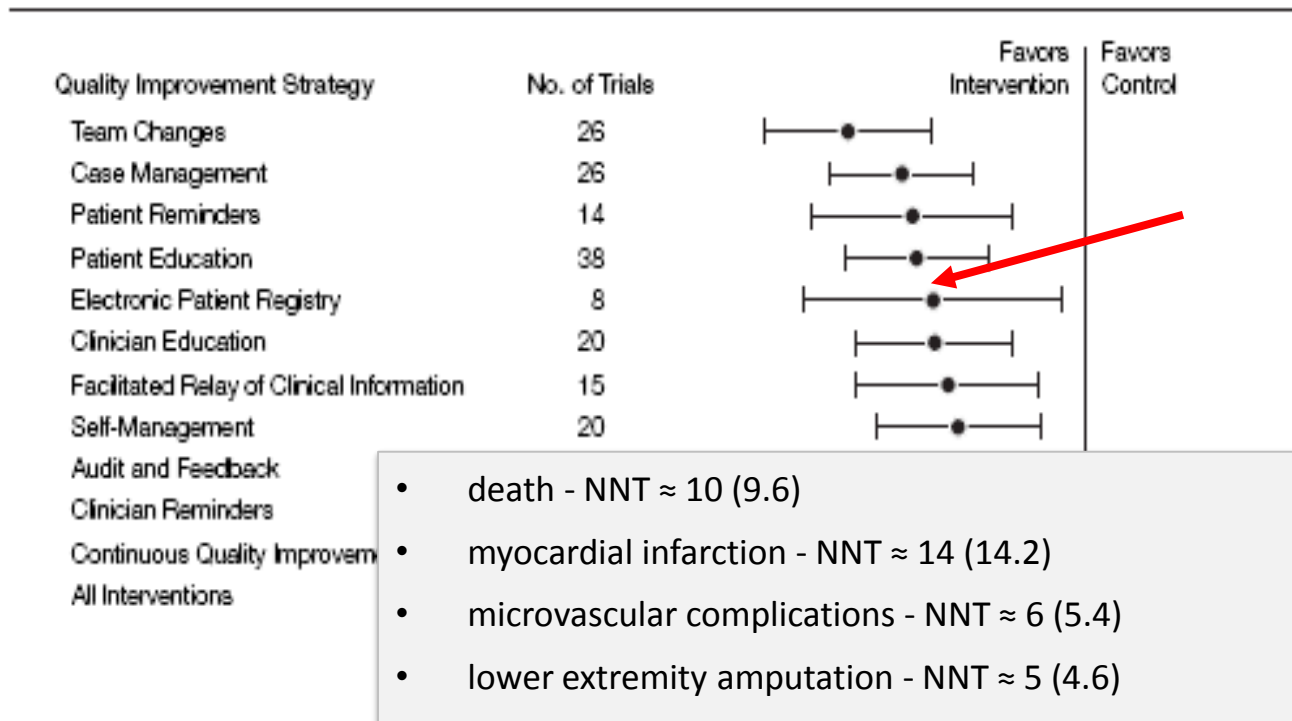


2013
all patients included –
241.990
quality indicators –
13.63% patients

Active reporting versus collecting
of the existing health data for a
national diabetes registry – PROS
& CONS

Effects of Quality Improvement Strategies for Type 2 Diabetes

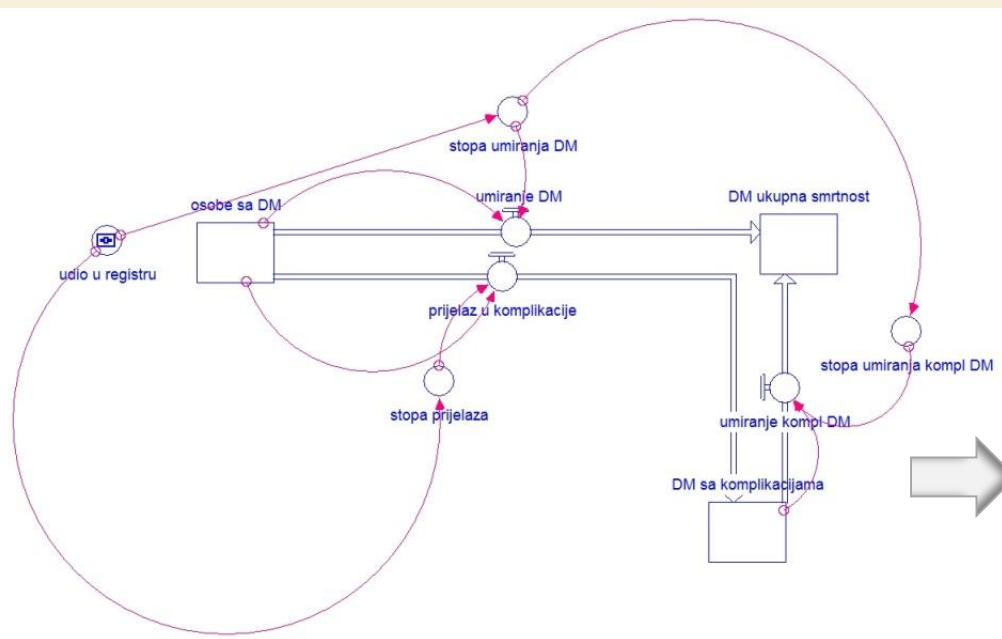
Figure 2. Postintervention Differences in Serum HbA_{1c} Values After Adjustment for Study Bias and Baseline HbA_{1c} Values



SOURCE: Effects of Quality Improvement Strategies for Type 2 Diabetes on Glycemic Control
A Meta-Regression Analysis. JAMA, July 26, 2006—Vol 296, No. 4 427-440

CroDiab registry

EFFECTS



- significant improvement of main metabolic parameters
- better survival
- prevention of complications
- effect correlate with ratio of included patients
- analysis of treatment effectiveness - enabled
- analysis of diabetes health care interventions effectiveness - enabled

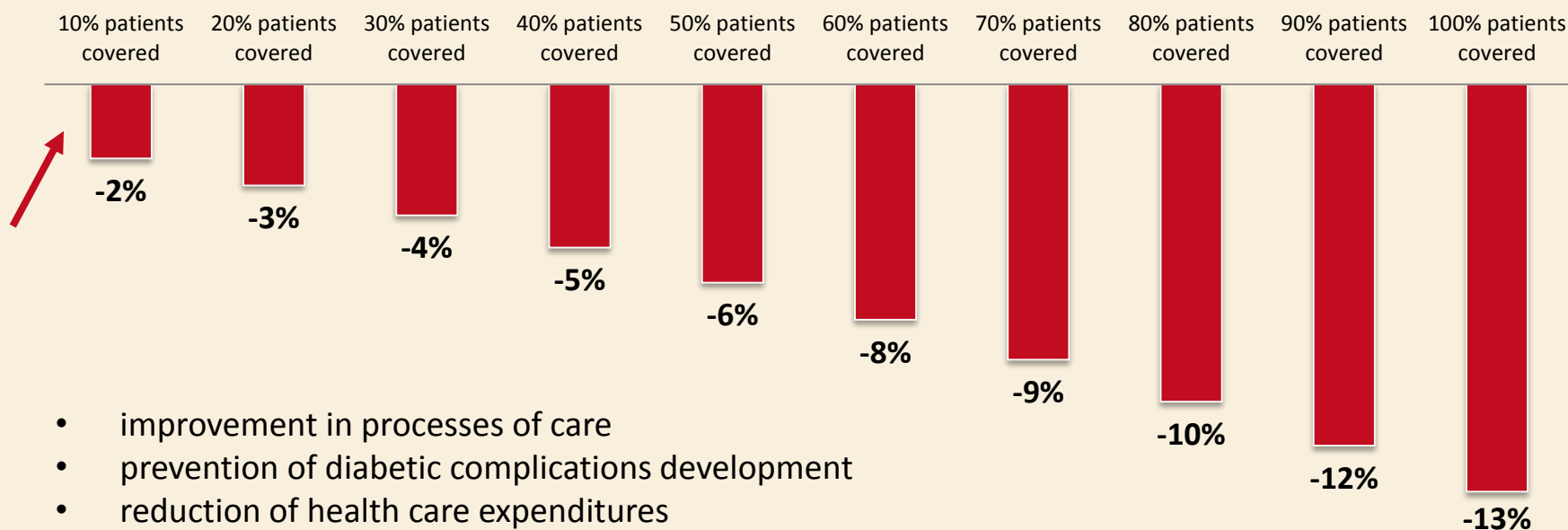
Resources

- Initial IT development
 - 50 000 €
- Personnel
 - epidemiologist – 25 days/year
 - administrator – 220 days/year
 - GP
- Equipment
 - PC, printer, scanner
- Workshops, Travel and subsistence allowances, Subcontracting,
 - 53 947 €/year

CroDiab registry

– financial aspects of enabled diabetes management

Total Costs difference vs. 0% patients covered
mean difference/1 patient



Strategic framework

- INTERNATIONAL
 - St. Vincent Declaration, 1989
 - UN Resolution on Diabetes, 2006

- NATIONAL
 - National Diabetes Programme, 2007, 2015
 - Diabetes Resolution, 2011
 - Public Health Development Strategy 2013-2016, 2014
 - National Health Strategy 2012-2020, 2014

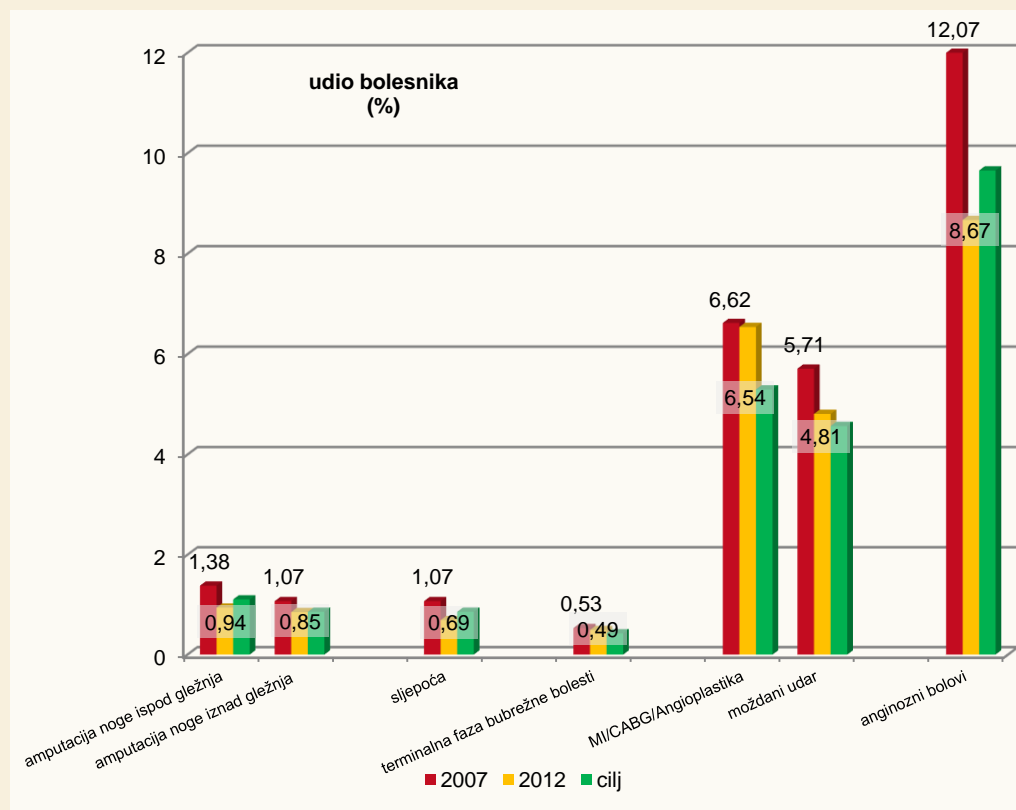


National diabetes programme 2007-2012

- increase the number of newly diagnosed persons with diabetes in the early stages of the disease through screening programmes at the primary health care level
- reduce the prevalence of chronic complications by 20% five years after the beginning of programme implementation, in particular:
 - lower limb amputation
 - blindness,
 - end-stage renal disease,
 - cardiovascular diseases –
 - surveillance via CroDiab Registry

median HbA1c 2007 vs. 2012 → 7.2 vs. 7.1

* GP's with regular reporting → Δ HbA1c – 0,48





National diabetes programme 2015-2020

GOALS

- increase the number of newly diagnosed persons with diabetes in the early stages of the disease through screening programmes at the primary health care level by 80% five years after the beginning of programme implementation, with monitoring through preventive panels
- reduce the prevalence of chronic complications by 20% five years after the beginning of programme implementation, in particular:
 - • lower limb amputation
 - • blindness,
 - • end-stage renal disease,
 - • cardiovascular diseases -
 - surveillance via CroDiab Registry
- achieving outcomes of pregnancies in women with diabetes comparable to those in healthy women, together with establishing a system of adequate monitoring of pregnancy outcomes in women with diabetes - surveillance via CroDiab registry
- adoption of the organizational guidelines including algorithms for diabetes care and responsibilities along with encouragement of "diabetes-friendly" family physicians within group practices
- improvement in interoperability (acceptance of data from the primary health care panels besides achieving adequate coverage) aimed at improving surveillance system of diabetes health care effectiveness - target coverage is completion of panels for 80% of patients with 80% coverage of the required data within the panel
- HbA1c monitoring in all persons with diabetes at least once a year, as well as lipid, blood pressure and body weight monitoring; target coverage – 50% of registered patients with diabetes – monitoring via CroDiab Registry



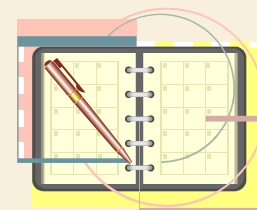
National diabetes programme 2015-2020

ACTIVITIES

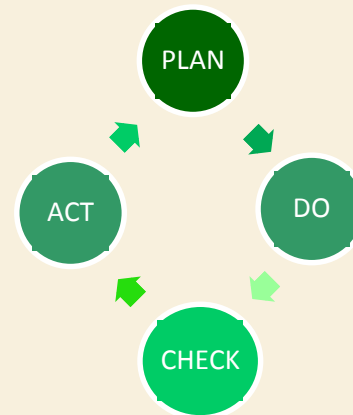
1. adoption of the organizational guidelines including algorithms for diabetes health care and responsibilities along with encouragement of "diabetes-friendly" family physicians within group practices; 2015
2. adoption/revision of professional guidelines/algorithms for treatment on primary and specialist levels; 2015
3. improvement of interoperability
 - diabetes panel adjustment to legislation on mandatory data registration; 2015
 - panel data acquisition from primary health care panels (diabetes, preventive, pathological pregnancy) into CroDiab Registry along with achieving adequate coverage aimed at improved surveillance of diabetes health care effectiveness; 2015
4. education of the general population and persons with diabetes; 2015-2020
5. human resource management in diabetes care
6. definition of education modules and curricula harmonised with international guidelines; 2015-2016
 - ensuring organisational / regulatory prerequisites based on expert analyses and secured financial resources; 2015-2020
 - development of activity plan for additional professional education; 2015
 - additional personnel education; 2016-2020
 - estimation of requirements and possibilities of introduction of podiatrists and specialisations of graduate nurses together with estimates of the required resources; 2015 – 2016
7. early detection of diabetes in general population older than 50 years of age and in those younger than 50 years of age with overweight or obesity and additional risk factors; 2015-2020
8. early detection of diabetes in pregnancy; 2015-2020
9. follow-up of patients with diabetes (quality of care indicators) with patient registration in the CroDiab Registry; 2015-2020
 - implementators: contractual family medicine physicians, diabetologists
 - implementation indicator: number of patients with available data on disease duration, body mass index, HbA1c, blood pressure and lipid values, and performed eye fundus and foot examinations

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Key learnings





CONCLUSION

- **collection of various data** in chronic diseases through years **makes a significant contribution**
 - in understanding the burden of chronic disease in a country
 - helps save cost
 - enables preparation of strategies and actions based on data driven analysis and decisions
- partnership between different institutions



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Thank you for your attention!