The Croatian Diabetes Registry within Public Health Information System

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A bit of context…

- The CIPH has historically been in charge of most public health registries, with national coverage and decades of data

- Every registry had its own IT solution supporting only internal processes (data entry, upload, validations, database administration, reporting)

A bit of context...

- High redundancy in public health reporting data sets
- Many paper forms
- Low penetration of data standards
- No central data governance and synchronization
- Low analytical flexibility and responsiveness
- High burden of administrative work on data

The answer…

- A unified registry platform (SOA, web-based) enabling EDC, and integration of various local and external data sources

- All registries on one platform (central public health registry - NAJS)
- Business processes shared among stakeholders
    - county health institutes
    - MoH
    - HIF
    - national health agencies
    - professional chambers
- Single point of metadata administration (codebooks, standards, users)
- Consolidated reporting (joint procedures)
- Data redundancies eliminated
- Improved validations, data quality and analytics
- Improved data exchange (paper -> .txt -> xml -> EDC)

CroDiab registry

- established in 2000 – HIS based
- since 2004, registration has been mandatory for all HCP with diabetes patients in care
- since 2013 complete coverage of patients, but not complete MDS
- in 2015 diabetes preventive checklist module introduced in PHC
  - BMI
  - Blood glucose
  - HbA1c
  - Ophtalmoscopy findings
  - Foot examination findings
  - Blood pressure
  - Amputation
  - Referrals
  - Lipidogram
  - Kreatinin

Panel: ŠEĆERNA BOLEST

MKB 10 | Godina postavljanja dijagnoze bolesti:

Pušenje: DA NE
Bivši pušač: DA NE
Konzumiranje alkohola: DA NE
Redovita tjelesna aktivnost: DA NE
Pridržavanje dijabetičke dijete: DA DJELOMIČNO NE
Suradljivost bolesnika: DA DJELOMIČNO NE

Tjelesna visina: cm | ITM: kg/m² 12.06.2014
Tjelesna masa: kg
Opseg struka: cm

GLIKEMIJA

Samokontrola: DA NE | Broj mjerenja GUP/tjedan:

GUP (sr. vrijednost) mmol/L 12.06.2014

GUP-nt mmol/L 12.06.2014
GUP-pp mmol/L 12.06.2014
HbA1c: % mmol/mol 12.06.2014

Pregled dijabetologa u proteklih 12 mjeseci: DA NE
Hospitalizacija u proteklih 12 mjeseci: DA NE

TERAPIJA:
naziv lijeka | dnevna doza | 12.06.2014
naziv lijeka | dnevna doza | 12.06.2014
naziv lijeka | dnevna doza | 12.06.2014

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

ARTERIJSKI TLAK

SISTOLIČKI mmHg | DIJASTOLIČKI mmHg | 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

IM u proteklih 12 mjeseci: DA NE
CVI u proteklih 12 mjeseci: DA NE

LIPIDOGRAM

ukupni kolesterol mmol/L | HDL kolesterol mmol/L | 12.06.2014
triglicerid mmol/L | LDL kolesterol mmol/L

TERAPIJA: naziv lijeka | dnevna doza | 12.06.2014
naziv lijeka | dnevna doza | 12.06.2014

BUBREŽNA FUNKCIJA

albumin (urin) mg/L
proteini (urin) mg/dan
kreatinin (serum) µmol/L

omjer albumin/kreatinin (urin) 12.06.2014
proc. glomerularna filtracija (ml/min/1.73 m²) 12.06.2014

PREGLED OČIJU

Oftalmoskopija: DA NE 12.06.2014

Druga bolest oka | MKB 10

Nema znakova dijabetičke retinopatije
Neproliferativna retinopatija
Proliferativna retinopatija
Makulopatija

PREGLED STOPALA

12.06.2014

Pregled stopala: DA NE
Normalan osjet vibracije: DA NE
Normalan osjet monofilamenta: DA NE
Arterijske pulzacije prisutne: DA NE

u proteklih 12 mjeseci:
dijab. polineuropatija:
Zacijeljeni vrijed
Akutni vrijed/ gangrena
Premoštenje/ angioplastika
Amputacija udova

dio stopala/stopalo
potkoljenična | natkoljenična

CroDiab NET

Verzija 2.5

powered by CONTINUUM

MI ZNAMO

Ovaj program je zaštićen važećim zakonima o au
Neovlašteno kopiranje i distribucija ovog program

Address http://www.crodiab.continuum.hr/main/default.htm

Go Links

CroDiab Web

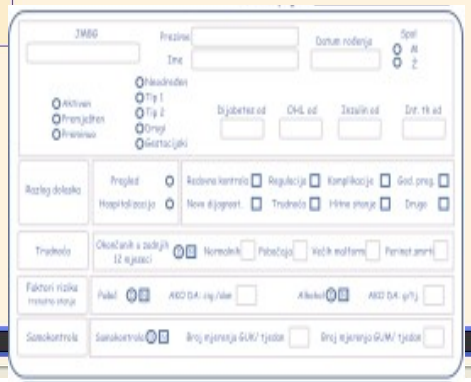
Prijava

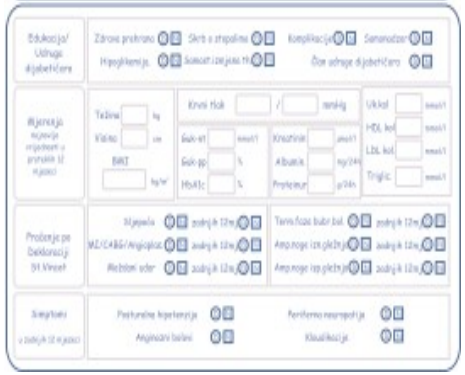
Ime:

Zaporka:

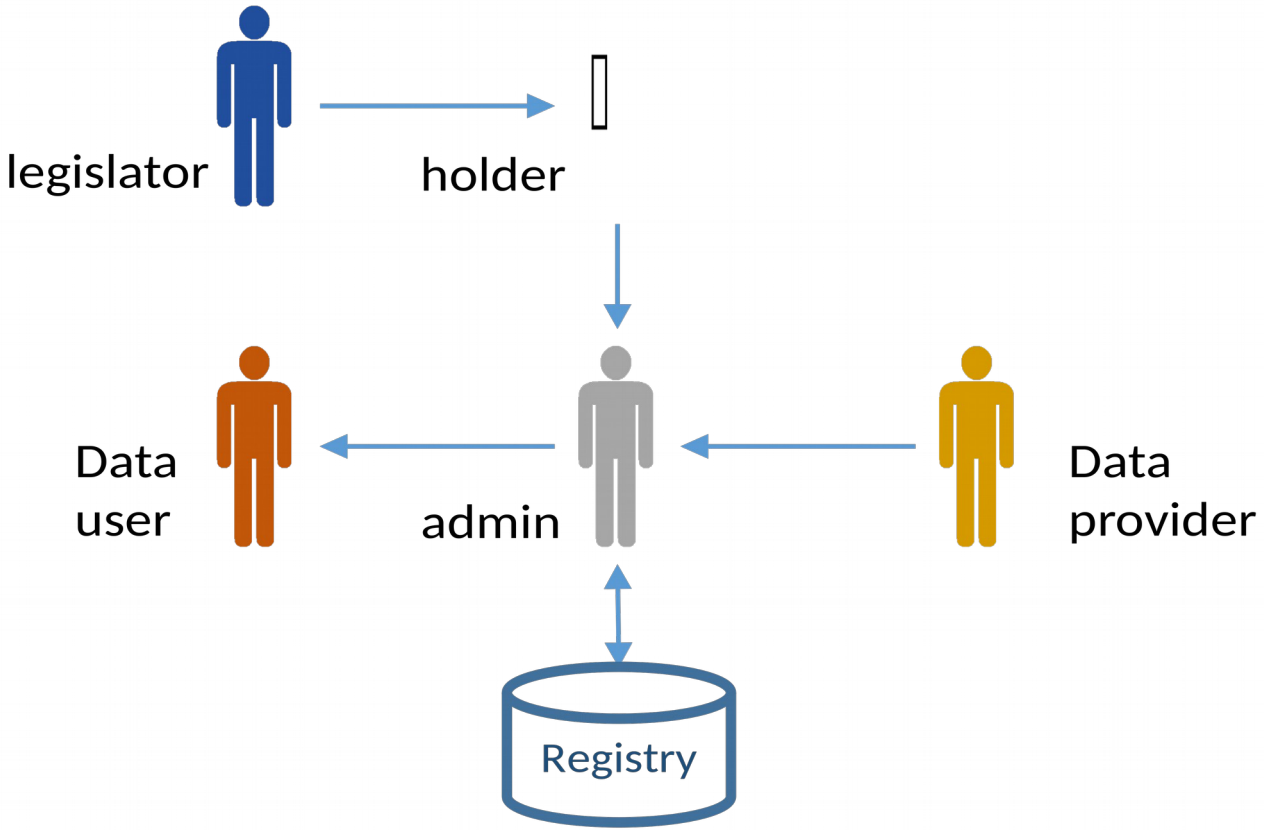
Prijava Izlaz

POWERED BY CONTINUUM

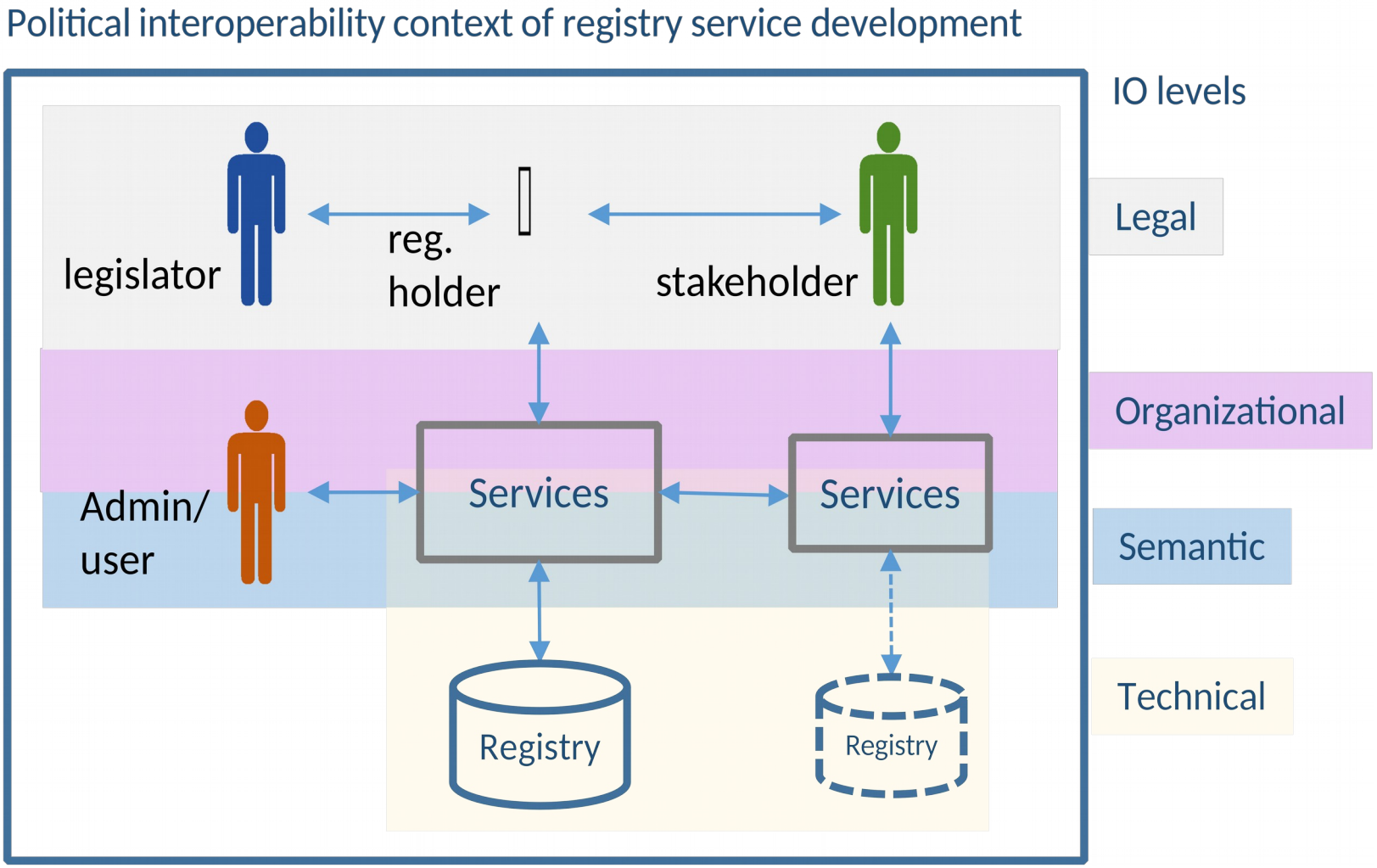




Registry before



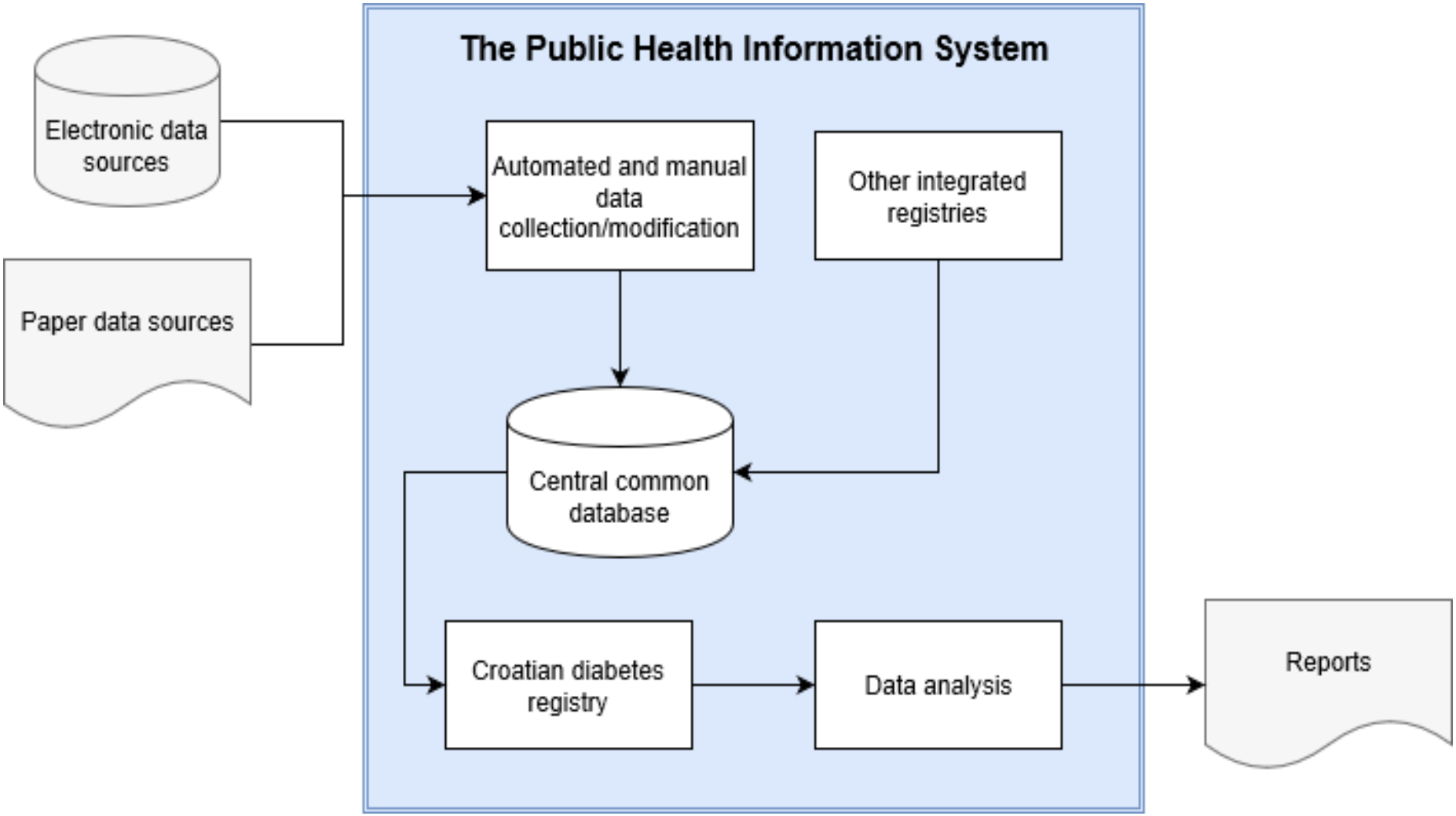
Registry afterwards



Main optimizations in all registries

- Address data coded uniquely according to national geo-codes
- Citizen's ID and ensured person's ID with accompanying demographic data updated uniquely through web services
- Health care providers uniquely coded (workforce registry)
- Common codebooks (maintained by users)
- Cause of death synchronized in all registries
- Access by organisation and role permissions
- Multi-stakeholder platform

The Croatian Diabetes Registry

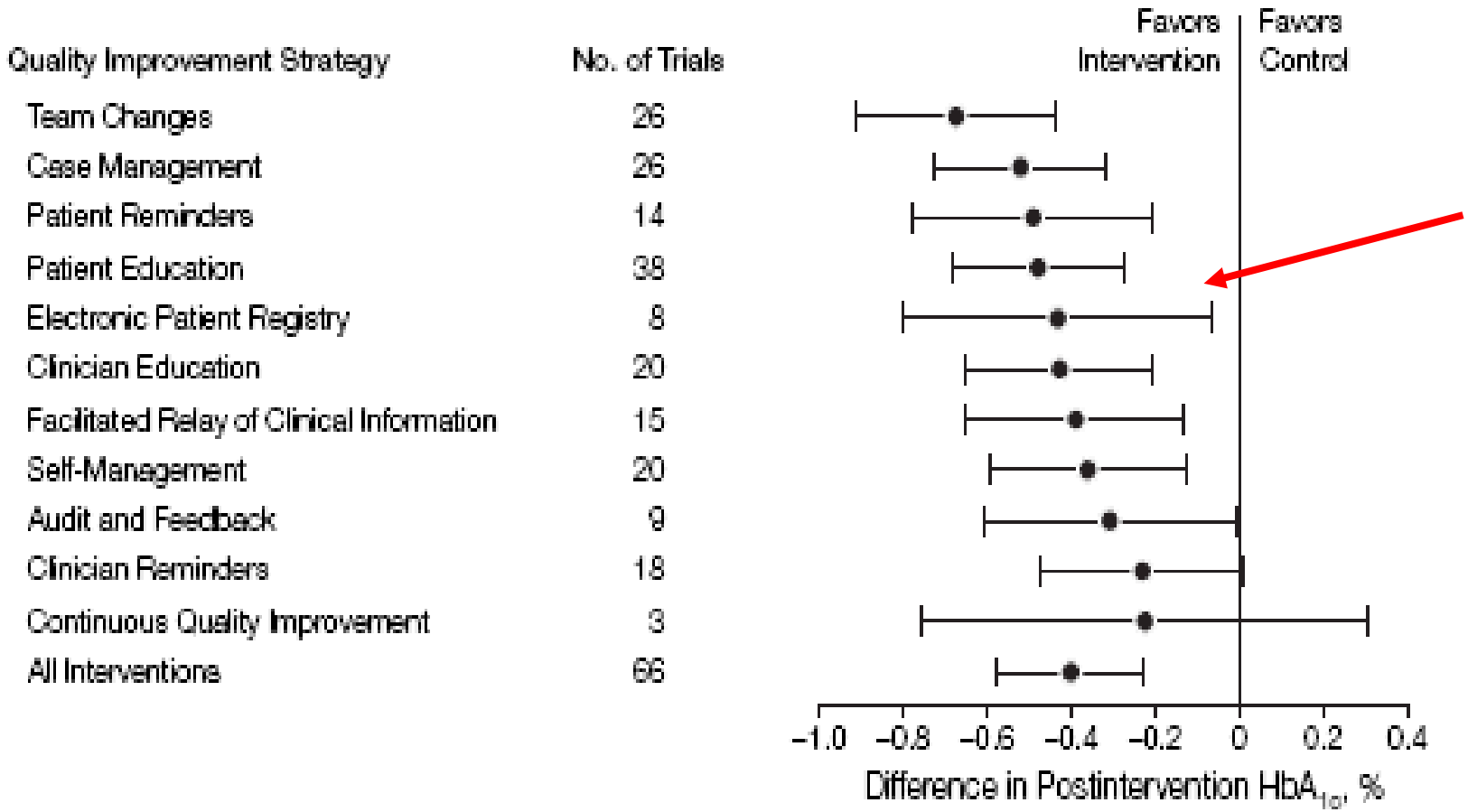


Data sources and level of integration

- HIS/CroDiab dataset import
- PHC diabetes preventive checklist dataset import
- PHC pregnants preventive checklist dataset import
- PHC visits, prescriptions, procedures end referrals import
- Monthly linkage with birth registry, CoD and hospital discharge database
- Manual data entry (at HCP or PHI sites)

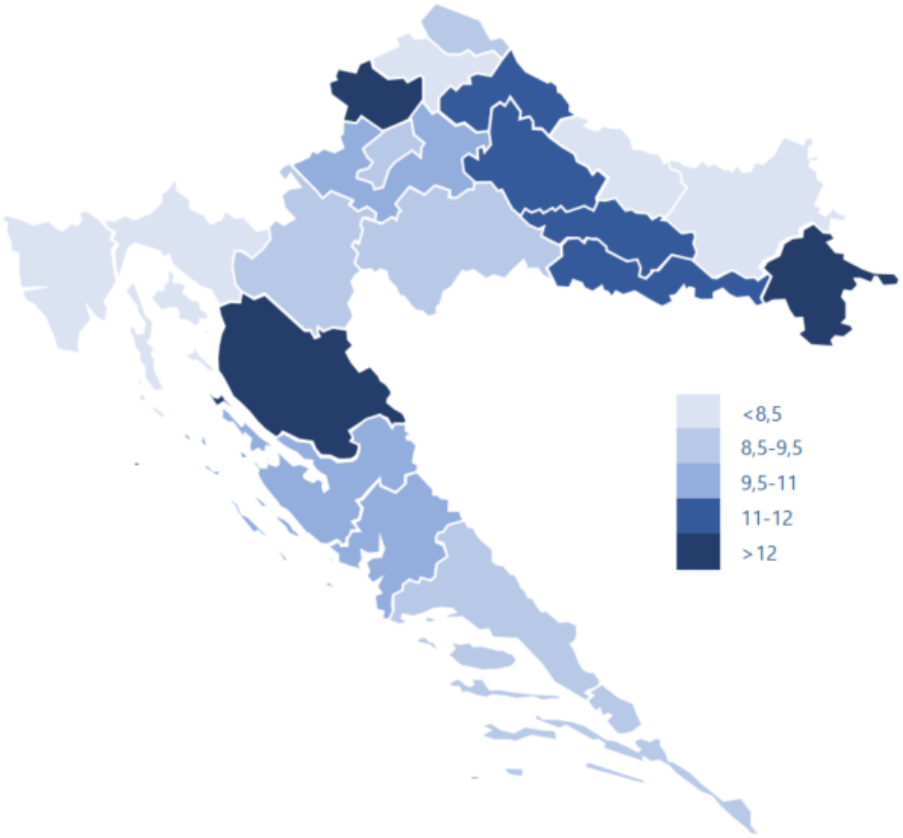
Effects of Quality Improvement Strategies for Type 2 Diabetes on Glycemic Control, A Meta-Regression Analysis. JAMA, July 26, 2006—Vol 296, No. 4 427-440

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



New analytical options (just after data linkage)

Age standardized rates of diabetes incidence/100.000, Croatia, 2014.

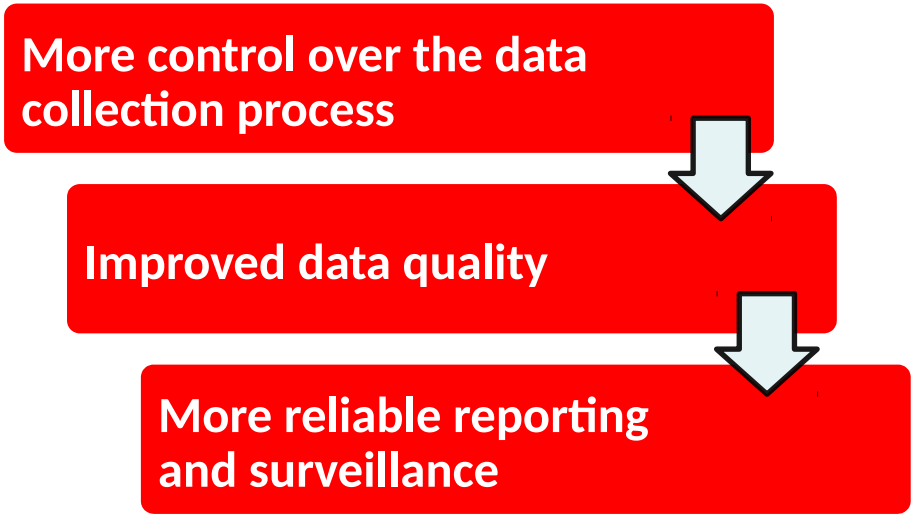


County	Diabetes, ASR (RH), 2014 *
Vukovar-Srijem	13.84
Krapina-Zagorje	13.53
Lika-Senj	12.03
Brod-Posavina	11.87
Koprivnica-Križevci	11.9
Bjelovar-Bilogora	11.59
Požega-Slavonia	11.11
Šibenik-Knin	10.75
Zadar	10.34
Zagreb County	9.82
Dubrovnik-Neretva	9.44
Karlovac	9.02
Međimurje	9.03
City of Zagreb	8.57
Sisak-Moslavina	8.59
Split-Dalmatia	8.61
Virovitica-Podravina	8.09
Varaždin	8.04
Osijek-Baranja	7.75
Istria	6.94
Primorje-Gorski Kotar	6.52

Diabetes incidence pattern in Croatia in 2014, Pleše, Čukelj, Šekerija (EDEG 2017.)

Planning for quality

- Central database designed to reduce data redundancy
- Connected to basic public administration registries
- Greater technical interoperability (data upload, web-services …)
- Clear and unified documentation for administration and use
- Greater control and security
- Analytical reports more compatible with international standards



Future steps

- Complete development of the diabetes registry services
- Complete migration of the historical data
- Define further integration with other services
- Expand analytics and cooperation with other institutions

EU Projects

- EUBIROD (2008-2011)
- PARENT JA (2012-2016)
- EUnetHTA JA3 (2016-2020)
- CHRODIS+ JA (2017-2019)
- InfAct (2018-2021)

Tamara

Dear friends
I'm so glad that EUBIROD family is meeting again and we all looking forward to our future activities and projects. I wish you all pleasant and successful meeting and excellent networking, like we always do, and hope to see you all soon.
Best
Tamara

9:23 AM