Royal College of Surgeons in Ireland

*Coláiste Ríoga na Máinleá in Éirinn*

RCSI

# Technology Innovation in Primary Care Research in Ireland

*Dr. Ronan McDonnell*

*Post Doctoral Researcher in ICT, RCSI*

*Director of Operations, Irish Primary Care Research Network*

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# Agenda

- Background
- Overview of HRB CPCR
  - Technology research
  - Ongoing Projects
- IPCRN overview
- Questions

# Background

- Researcher, Royal College of Surgeons in Ireland
  - ICT focus
- Director of Operations, IPCRN
  - Research, Audit, Quality Improvement in Primary Care using electronic health data
- PhD in Health Informatics

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- €9 million funding from Irish Health Research Board
  - Primary Care focus
  - Different to Japan – GPs are 'gatekeepers'
- Health Services Researchers
- ICT Research and Development
- Physicians (Mainly Primary Care)
- Collaboration between 4 Irish/UK universities
- Hosted in RCSI

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# RCSI – HRB CPCR

- Enhance Patient Safety
  - Diagnosis/Medicines management &treatment
- Developing ICT tools to support the above
  - Clinical Decision Support Systems (CDSS)
- Used at Point-of-care by clinicians
- Access to clinicians
  - National Primary Care Research Network (IPCRN)
  - Individual Research Projects

# Current ICT Technology in Ireland

- EHR CDSS is limited in Ireland
  - Drug alerts (contraindications etc.)
- Electronic guidelines limited – PDF/Websites
- Some communication with hospitals (HL7)
  - Lab results
  - Imaging
  - Referrals
  - Discharge

# HRB CPCR Research Projects

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- Developing ICT infrastructure to support CDSS
  - Potentially Inappropriate Prescribing
    - Web-based tool – not integrated into EHR.
  - Register of Clinical Prediction Rules
  - Help predict likelihood of a condition
  - All rules relevant to primary care
    - Ontology accessible via API
  - Electronic Treatment Guidelines for Chronic Disease Management

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# Electronic Register for Clinical Prediction Rules

## Calculator

***Browse by ICPC2 Clinical Domains:***

- General and Unspecified
- Blood and Immune Mechanism
- Digestive
- Eye
- Ear
- Cardiovascular
- Musculoskeletal
- Neurological
- Psychological
- Respiratory
- Skin
- Endocrine/Metabolic /Nutritional
- Urological
- Pregnancy/Child Bearing/Family Planning
- Female genital
- Male Genital
- Social Problems
- Process codes

Step 3 of 3: CPR

CPR Details | Calculator | Article | Relevant articles

▾ Calculator

| | |
|---|---|
| Does the patient have tonsillar exudates? (+1) | No |
| Does the patient have swollen tender anterior cervical nodes? (+1) | Yes |
| Does the patient not have a cough? (+1) | Yes |
| Does the patient have a history of fever? (+1) | No |

**CPR Score: 2**

▸ Risk

▸ Decision

▸ Prediction

Back | Next

# HRB CPCR Research Projects

- Developing Application Programming Interface (API)
  - Allows any clinical software to connect and access our clinical knowledge
- Knowledge 'engine' - ontology
  - Receives(anonymised) patient data and applies it to our electronic clinical knowledge
  - Generates clinical recommendation
  - Designed to be interoperable (HL7)

# HRB CPCR Research Projects

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- Access to clinicians and patients
  - Feedback on technology and clinical guidance
  - Good relationship with main GP s/w vendors
    - Integrating our technology at point-of-care
  - Research at primary/secondary care interface
    - Medicines Reconciliation at discharge from hospital
    - Make sure GP & Hospital prescription are the same
    - Collecting data from 7 hospitals

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# IPCRN – Overview

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iPCRN Irish Primary Care Research Network

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# What is the IPCRN ?

- Non-Profit Organisation
- Collaboration between
  - ICGP – Professional GP training org. in Ireland
  - HRB Centre for Primary Care Research (RCSI)
  - Western Research And Education Network (NUIG)

Overall aim is to establish a national network of GP practices whose purpose is to participate in clinical research for the benefit of their patients.

# What is the IPCRN ?

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- Use technology to help GPs manage, audit and improve their patient care
  - Integrated into their software/ EHR
- Improve data quality in primary care
  - Data coding (ICD10/ICPC2) is limited
- Involve GPs more in clinical research
- Work with the GP s/w vendors to develop all of the above

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- Helix: 40-45%
  - (HPM & HealthONE)
- Socrates: 50%
- Complete GP : 5%
- Others:

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socrates
healthcare informatics

COMPLETE GP

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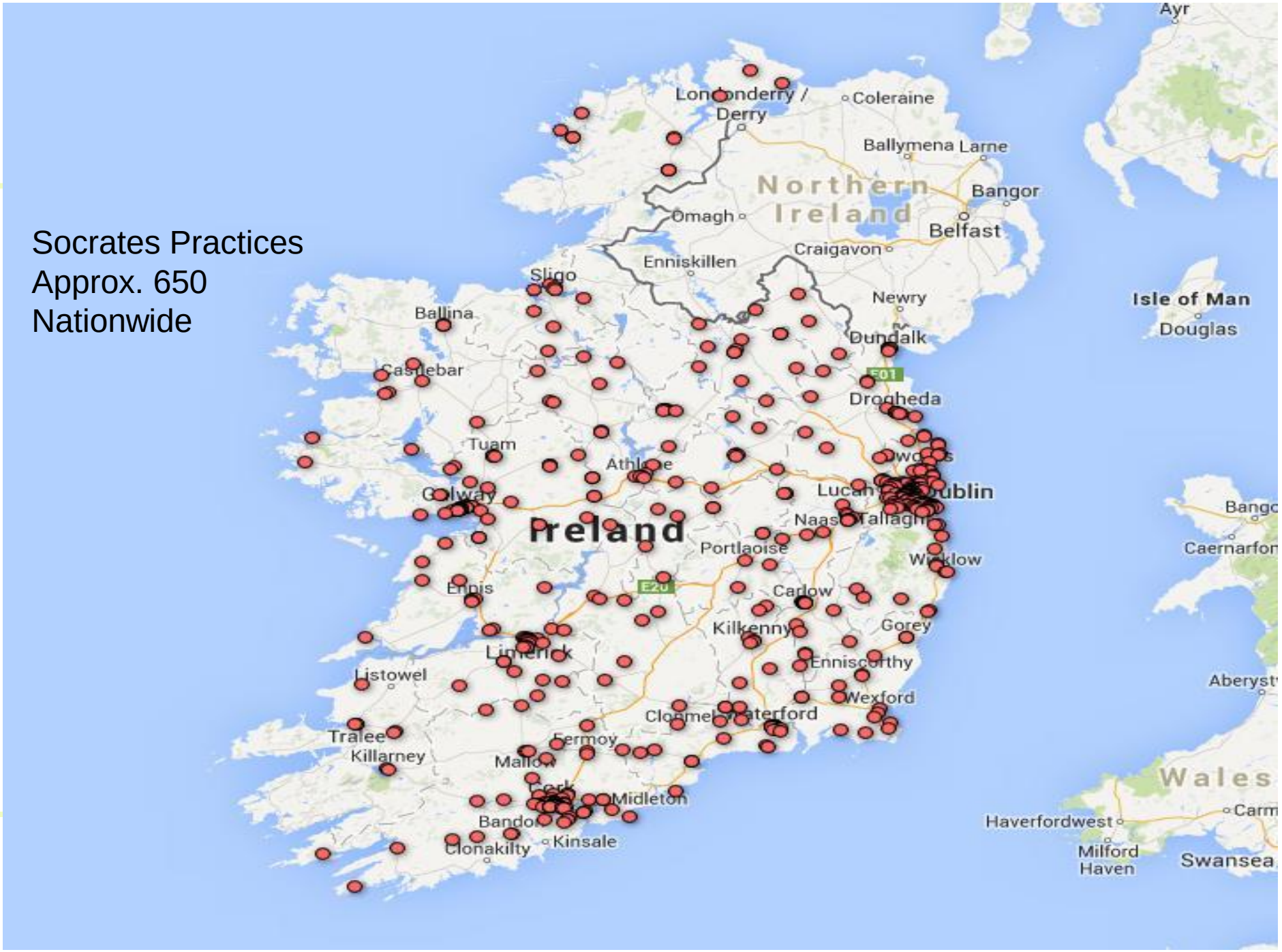
Socrates Practices
Approx. 650
Nationwide



# iPCRN Tools

## Local Tools

We work with vendors to create tools that run locally on your system

### Patient Finders

- Type I Diabetes
- Flu Finder
- CKD Finder
- Atrial Fibrillation

These help you find patients that haven't yet been 'coded'

### Local Registers

- Paeds Prescribing
- Maternity

These pull together coded patients into easy to manage registers

## Remote Tools

We analyse anonymised data to create Practice level and National reports

- Diabetes
- Maternity
- AFib
- Heart Failure

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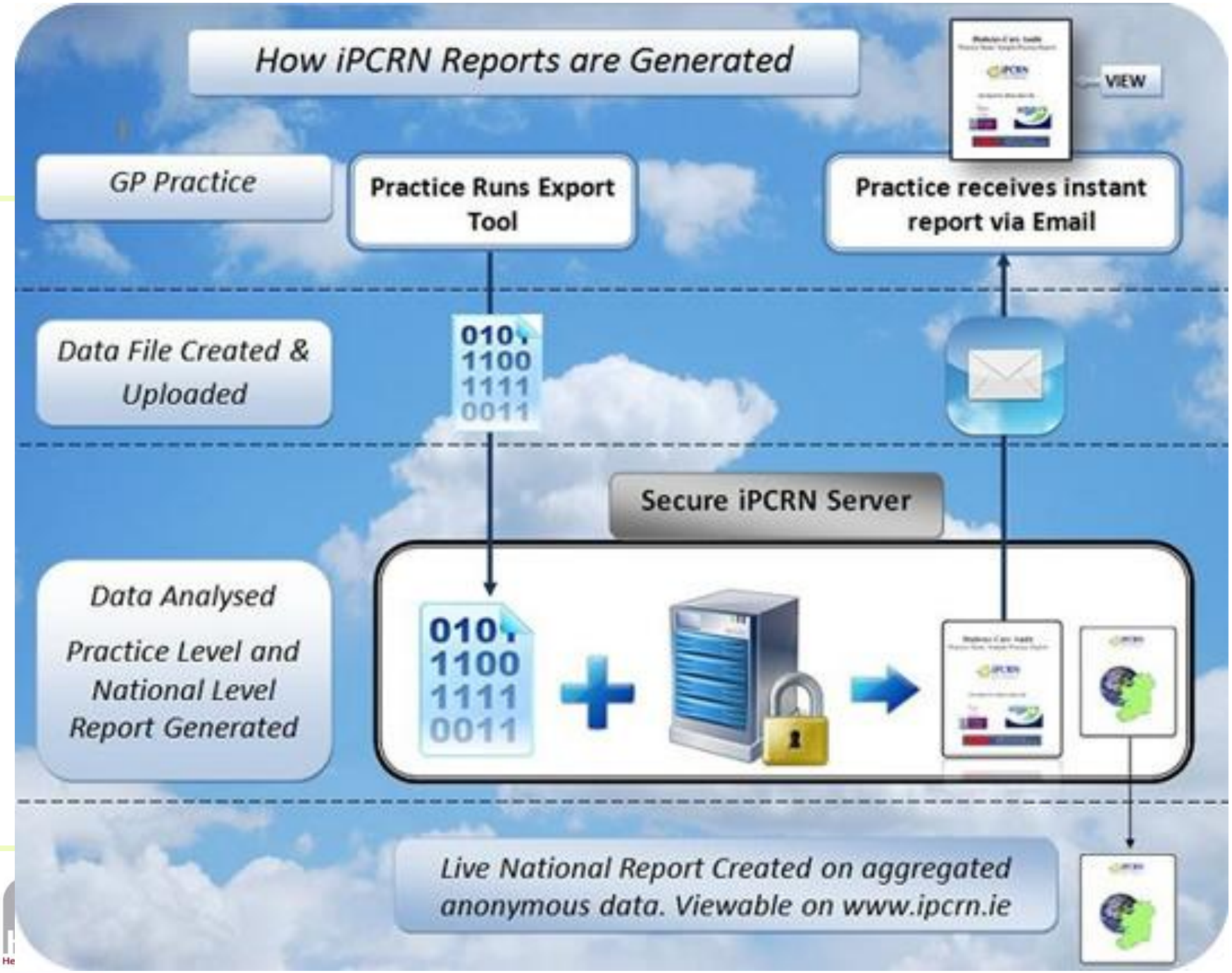
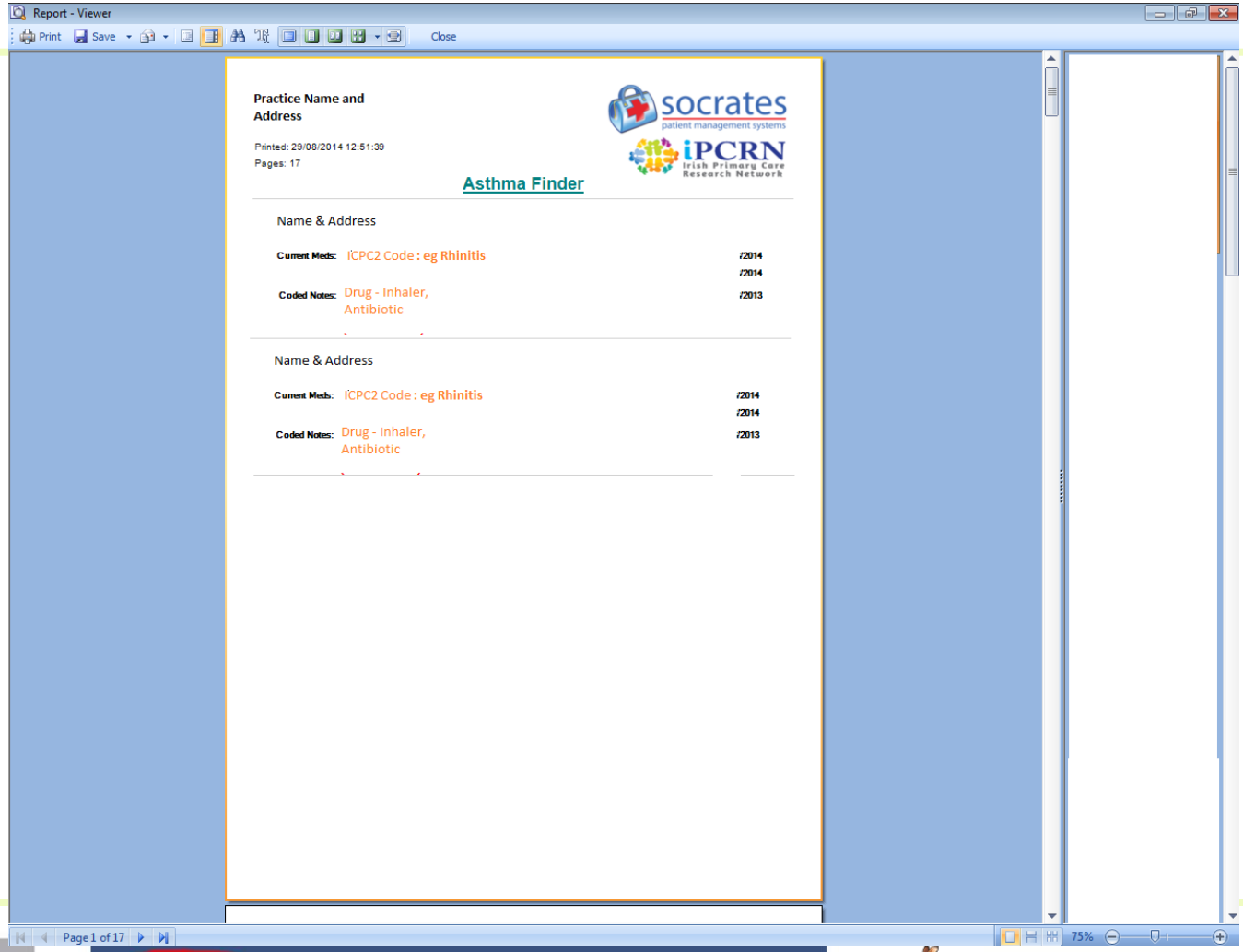

How iPCRN Reports are Generated
VIEW
GP Practice
Practice Runs Export Tool
Practice receives instant report via Email
Data File Created & Uploaded
0101
1100
1111
0011
Secure iPCRN Server
Data Analysed
Practice Level and National Level Report Generated
Live National Report Created on aggregated anonymous data. Viewable on www.ipcrn.ie

# Local Tool Use

- Data not collected on Local Tool Use.
- Approx. 25 Local Tools in operation.
- Most Commonly used – 'Flu Finder'.
- Socrates Estimate used in 75% of Practices at least once.

# Asthma Finder Report

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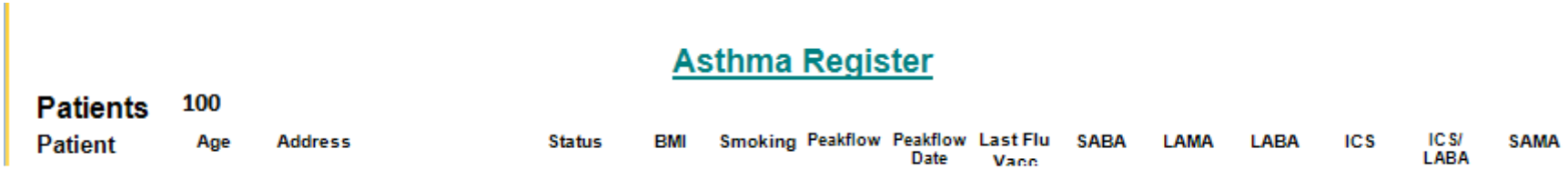
# Asthma Register Report



Asthma Register

Patients 100

| Patient | Age | Address | Status | BMI | Smoking | Peakflow | Peakflow Date | Last Flu Vacc | SABA | LAMA | LABA | ICS | ICS/ LABA | SAMA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

- Software analyses patient record
  - Drugs/diagnoses/consultations/tests
- List of patients in practice with Asthma.
- Information on BMI, Smoking, Peakflow, Flu etc.

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# Asthma Finder and Register

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- Finder - Helps GPs identify patients where practice data suggests they have Asthma, but are not coded with it.
- Register – Helps track all patients in practice with Asthma.
- Local tools - identifiable data so no data extraction or comparison to national data.

# Remote Audit Tools

- Remote Audit Tool - National Comparison of Anonymous Practice data
- 'Big' Conditions – Diabetes/AFib/Heart Failure
- Future work may look at antibiotic prescribing/resistance etc.

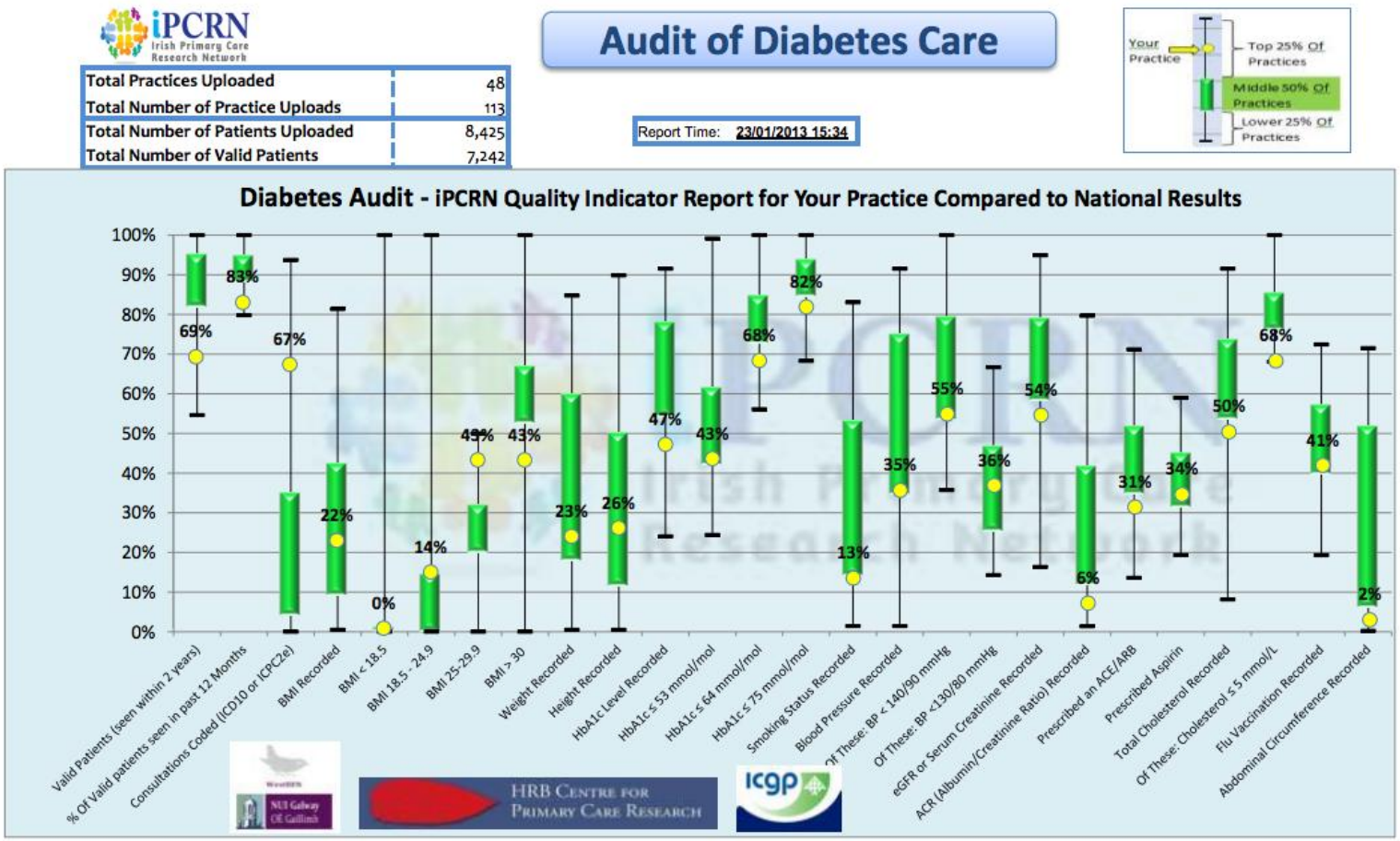
# Remote Audit Tools

- Data anonymised before uploading to IPCRN
- DOB becomes year of birth
- No 'freetext'
- No names, addresses, ethnicity, contact details
- Even practice information not stored (unique ID)

# Remote Audit Tools

- Practice can compare themselves against all other practices that have uploaded
  - Can only identify themselves!
  - National 'Quality Indicators'
- Aggregate data on their practice
  - No. of patients with condition
  - Visits/Drugs/Other related conditions

# Diabetes Management

- 

# Remote Audit Tools

- Widely used
  - More than 350 practices have used diabetes uploader
  - Developed in collaboration with national Clinical leads in each area
  - Constantly updated
  - Can be used for audit purposes
  - 95% of all practices

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Thank you!

Questions?

rmcdonnell@rcsi.ie

@ronanmcdonnell

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