



## National Framework – Scotland

**Dr Scott G Cunningham – Technical Consultant  
University of Dundee/NHS Scotland**

# Introduction

- Background
- Diabetes exemplar
- Secondary data use
- EUBIROD activities

# National eHealth Programme

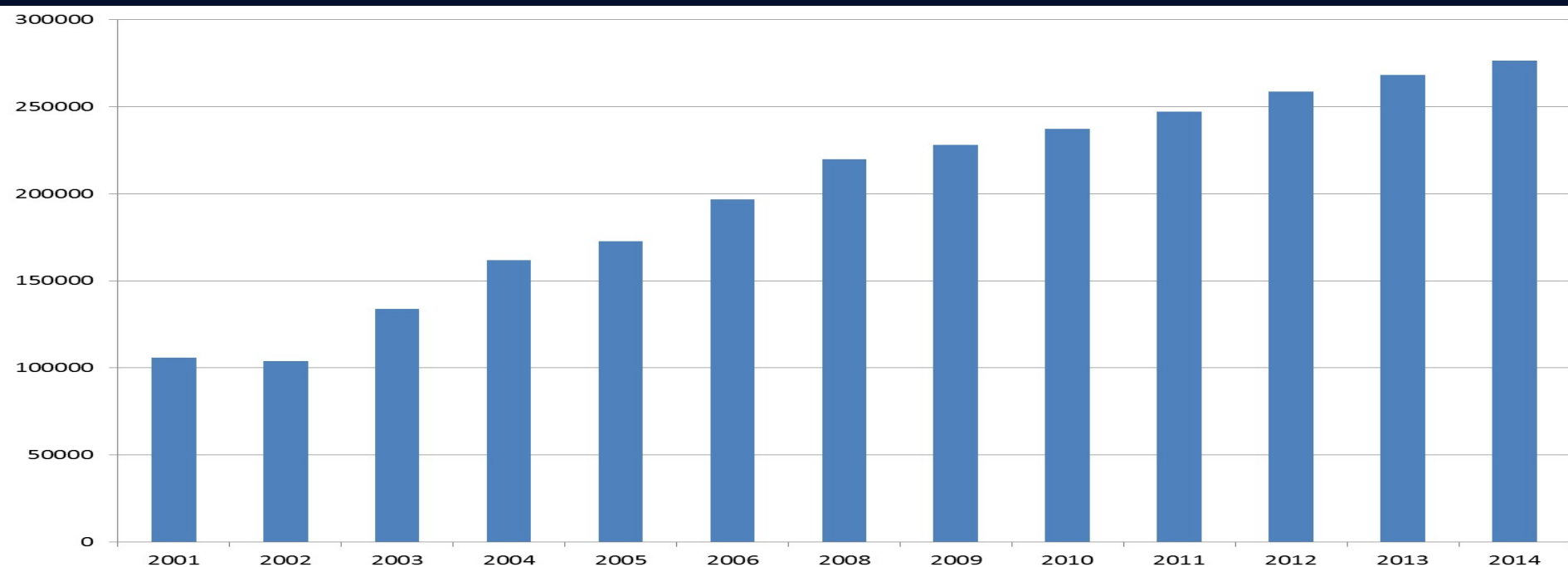
- eHealth strategy
  - Health and social care integration
  - Citizen access
- Standardisation of infrastructure
  - Master Patient Index - CHI
  - Laboratories – SCI-Store
  - Inpatient/outpatient management – TRAK
  - Digital dictation – WinScribe
  - Primary care – EMIS/Vision

# Diabetes in Scotland

- Scottish Diabetes Group
- Diabetes Improvement Plan
  - Setting priority areas for improvement
- SCI-Diabetes

# Diabetes in Scotland

- Scotland's diabetes prevalence
  - 2002: 103,835 (2%)
  - 2014: 276,430 (5.2%)
  - Type 1: 10.8%; Type 2: 88.3%; Other types: 0.9%



SCI-Diabetes - Clinical Summary - Microsoft Internet Explorer provided by NHS Tayside

http://scidc-ph3-web.tnhs.tayside.scot.nhs.uk/Phase3/overview/Type2/Gms.aspx

Google

SCI-Diabetes - Clinical Summary

SCI-Diabetes

Tayside  
(Tayside Practice 3)

Username: CUNNINGHAM, Scott  
Designation: Computing Staff

Main MenuUserHelpContactFormsSavePrintResetUndo ResetDefaultLogout

GORDON, AdamBorn 23-Mar-1961 (52y)Gender MalePatient ID/CHI 2303610065

Address An AddressPhone and EmailDiagnosis Type 2 Diabetes Mellitu...Treatment Oral Agents (Glitazone...Allergies not recorded

Population Overview : Type 2 Diabetes - Population Overview : Patient Record : Clinical SummaryRefresh Page

Clinical SummaryHelp

Diabetic Diagnosis/status

Diabetes Type: Type 2 Diabetes MellitusDate of Diagnosis: 16-Jun-2001

Next Specialist Clinic Review Date: 21-Oct-2013 3 MonthsOther:

Diabetes Education: Click on Patient Education History to view and enter detailed education information for this patient

Latest Education Record: 31-Aug-2011 Level 3

Diabetic Complications

CHD NoCKD No

Cerebrovascular Disease NoNeuropathy Yes

PVD NoEye Disease No

Erectile Dysfunction No

Biochemistry:

HbA1c: 02-Jul-2012 82 mmol/mol

Total Cholesterol: 27-Apr-2012 50 mmol/L

LDL Cholesterol:

Renal Function:

Creatinine: 02-Jul-2012 85 µmol/L

estimated GFR: 26-Apr-2012 50 ml/min

Urinary Protein Status

Microalbumin Concentration:

ACR: 07-Apr-2011 50 mg/mmol

PCR: 26-Apr-2012 50 mg/mmol

Urinary Protein Status: Abnormal

ACE Inhibitor: ACE Not Prescribed

ACE CI'd/ Intolerant:

AT2 Antagonist: AT2 Not Prescribed

AT2 CI'd/ Intolerant:

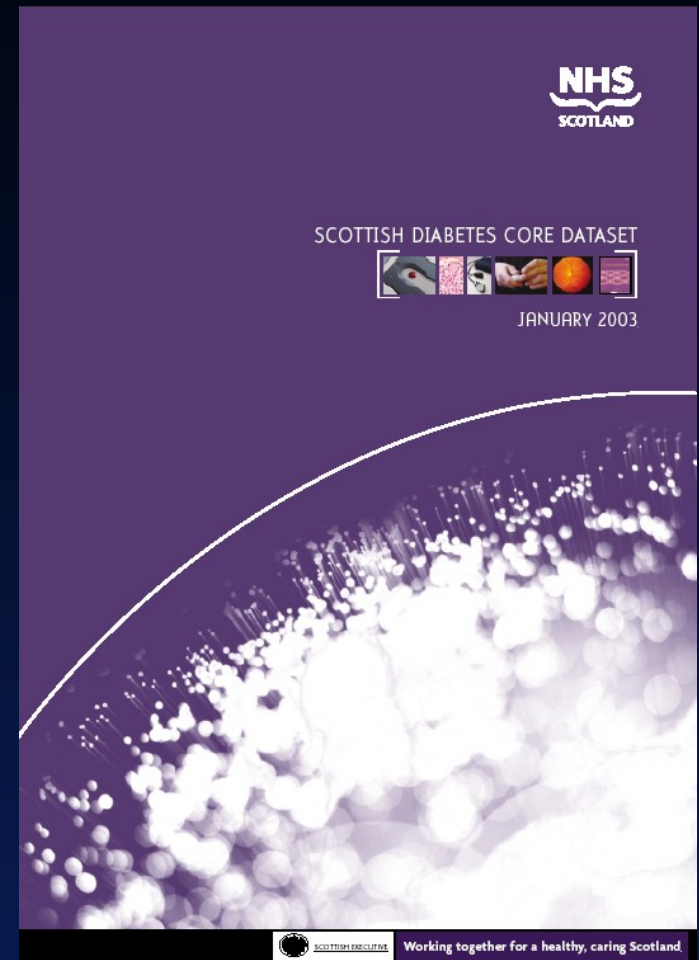
Cardiovascular:

BP: 08 Feb 2013 124 / 67

DoneInternet | Protected Mode: Off100%

# Common language

- Standardised dataset of terms
- Clear and unambiguous clinical definitions

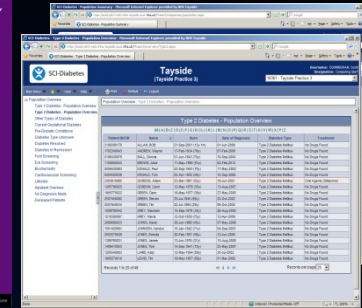
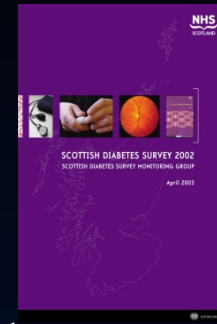




Laboratory Results



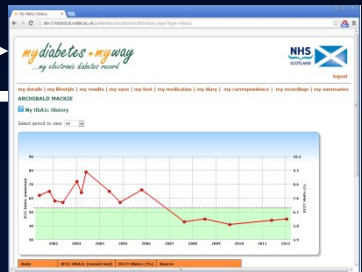
Community Health Index



Audit and Reporting



Primary Care Systems



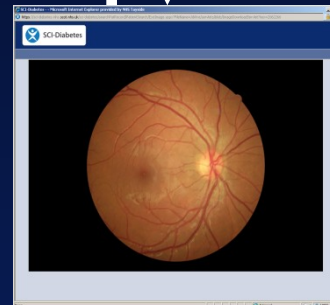
Scottish Diabetes Research Network



Secondary Care Systems



Inpatient Linkage

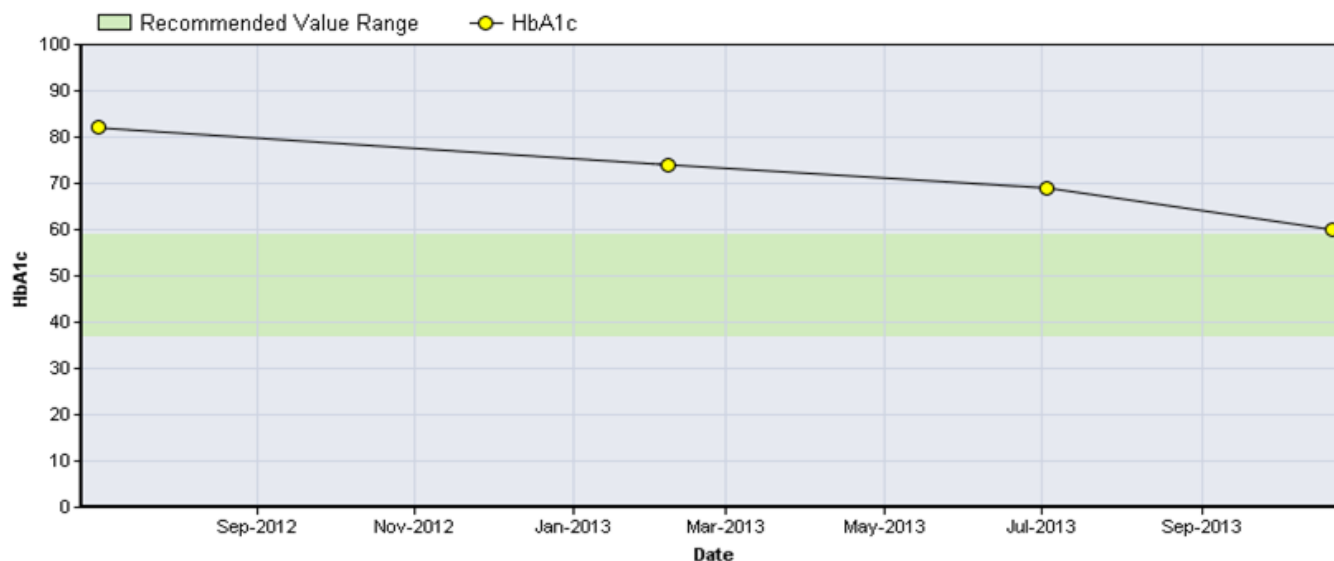


Diabetic Retinopathy Screening





## HbA1c History for 2303610065 - Gordon, Adam



ChartDirector (unregistered) from www.advsofteng.com

2 Years 5 Years All

Green highlight = value on summary page

☐ Show excluded data

Date	HbA1c (mmol/mol)	Source	
21-Oct-2013	60	Gms Summary - Tayside Practice 3 (Tayside)	✗
03-Jul-2013	69	Gms Summary - Tayside Practice 3 (Tayside)	✗
07-Feb-2013	74	Gms Summary - Tayside Practice 3 (Tayside)	✗
02-Jul-2012	82	Gms Summary - Tayside Practice 3 (Tayside)	✗

Records 1 to 4 of 4

◀ ◀ ▶ ▶

Records per page 20

ACE Inhibitor: ACE Not Prescribed

ACE CI'd/ Intolerant:



## Tayside (Tayside Practice 3)

Username: CUNNINGHAM, Scott  
Designation: Computing Staff

Main Menu User Help Contact Forms Save Reset Undo Reset Cancel Logout

CROSS, Catherine

Born 13-Jun-1966 (47y)

Gender Male

Patient ID/CHI 1306660020

Address An Address

Phone and Email

Diagnosis Type 1 Diabetes Mellitu...

Treatment No Drugs Found

Allergies recorded

### Patient Record

#### Patient Facilitation

Demographics  
Clinical Summary

#### Paediatrics

#### Specialist Clinic Support

#### Detailed Clinical Record

##### Treatment/Medication

Medical History

##### Diagnostic Admin Form

##### Patient Contacts

Laboratory Results

Lifestyle

Glycaemic Control

Cardiovascular System

##### Foot Care

Foot Summary

Foot Screening History

#### Foot Screening

Ulcer Management

##### Dietetics

Renal Care

##### Eye Care

Neuropathy

Sexual Health

Acute Complications

Inpatient Episodes

Diagnostic Information

#### Patient Support

Regional Comparison : Foot Screening Summary : Patient Record : Detailed Clinical Record : Foot Care : Foot Screening History : Foot Screening Tool (Risk Stratification)

Refresh Page

Significant Ulceration: ☐ Present - Side Unspecified ☒ Absent

Previous Ulceration: ☐ Yes - Side Unspecified ☒ No

Significant Callus: ☐ Present - Side Unspecified ☒ Absent

Able To or Has Help To Self Care: ☒ Yes ☐ No

Active Ulcer: ☐ Yes - Side Unspecified ☒ No

Other Risk (Specify): ☐ Yes

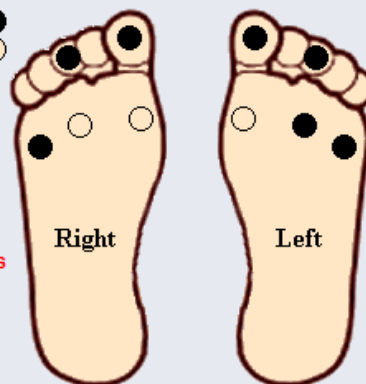
### Vascular Screening

	Right		Left	
Peripheral Pulses (Posterior Tibial or Dorsalis Pedis):	<input type="radio"/> Either Present	<input checked="" type="radio"/> Both Absent	<input checked="" type="radio"/> Either Present	<input type="radio"/> Both Absent
Intermittent Claudication:	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Previous Vascular Intervention:	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Yes	<input checked="" type="radio"/> No

### Neurological Screening

10 Gram Monofilament Sites

Present = ●  
Absent = ○



Loss of Protective Sensation = Yes  
Feeling in Less Than: 8 Sites?

Neurothesiometer Assessment:  mV

Painful Neuropathy:

☐ Present

☐ Absent

### Risk Category

Current Risk Category: ☹️

Predicted Risk Category: **High Risk** 😊

Recommended Action:

Annual screening/assessment by a specialist podiatrist.

Agreed and tailored management/treatment plan by specialist podiatrist according to patient needs.

Provide written and verbal education with emergency contact numbers.

Referral for specialist intervention required if/when required

SCI-Diabetes - Glycaemic Control Summary - Microsoft Internet Explorer provided by NHS Tayside

http://scidc-ph3-web.tnhs.tayside.scot.nhs.uk/Phase3/comparison/glycaemic.aspx

Google

SCI-Diabetes - Glycaemic Control Summary

Home RSS Email Print Page Safety Tools

SCI-Diabetes

Tayside

(Tayside Practice 3)

Username: CUNNINGHAM, Scott

Designation: Computing Staff

10361 - Tayside Practice 3

Main Menu

★

User

Help

Print

Default

Logout

Regional Comparison

Population Summary

Eye Screening Summary

Glycaemic Control Summary

Blood Pressure Summary

Body Mass Index & Smoking

Macrovascular Outcomes Summary

Foot Screening Summary

Regional Comparison : Glycaemic Control Summary

Regional Comparison - Glycaemic Control Summary

Click on a row to view the list of patients. The list will appear below.

		Tayside Practice 3 as at 21-Oct-2013 18:27:36		Tayside as at 11-Apr-2012 11:49:08	
		Number	Percentage	Number	Percentage
Number of Diabetics		168		504	
HbA1c	An HbA1c record in the last 15 months	28	16.7 %	56	11.1 %
	No HbA1c in the last 15 months	140	83.3 %	448	88.9 %
	Patients with any HbA1c record	62	36.9 %	75	14.9 %
	Patients with no HbA1c record	106	63.1 %	429	85.1 %
Based on the last result where record found	HbA1c < 53 mmol/mol (7.0 %)	35	20.8 %	49	9.7 %
	HbA1c 53 - 75 mmol/mol (7.0 - 9.0 %)	12	7.1 %	9	1.8 %
	HbA1c > 75 mmol/mol (9.0 %)	15	8.9 %	17	3.4 %
	Average last recorded HbA1c (mmol/mol)	52.05 mmol/mol		50.31 mmol/mol	

(4 items remaining) Waiting for http://scidc-ph3-web.tnhs.tayside.scot.nhs.uk/Phase3/comparison/glycaemic.aspx...

Internet | Protected Mode: Off

100%

# Secondary Data Use

- Regional reporting
- National reporting
- Research
- Patient access



**Tayside  
Diabetes  
MCN**



# **Improving treatment and care for people with diabetes in Tayside**

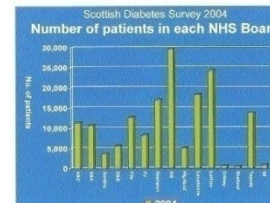
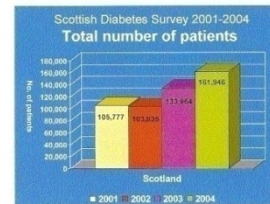
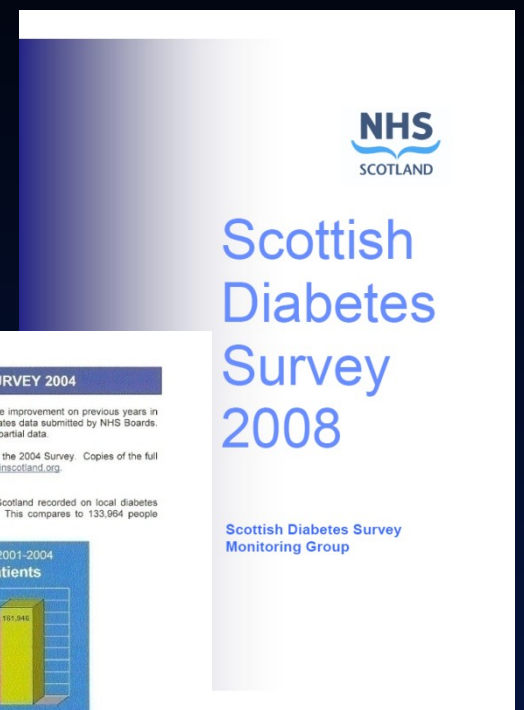
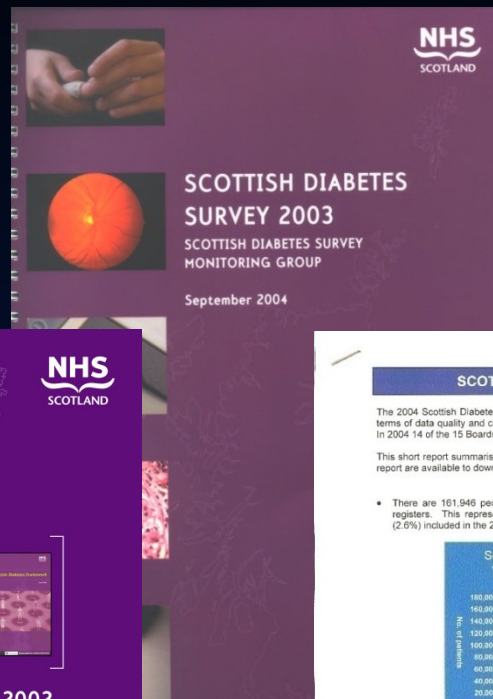
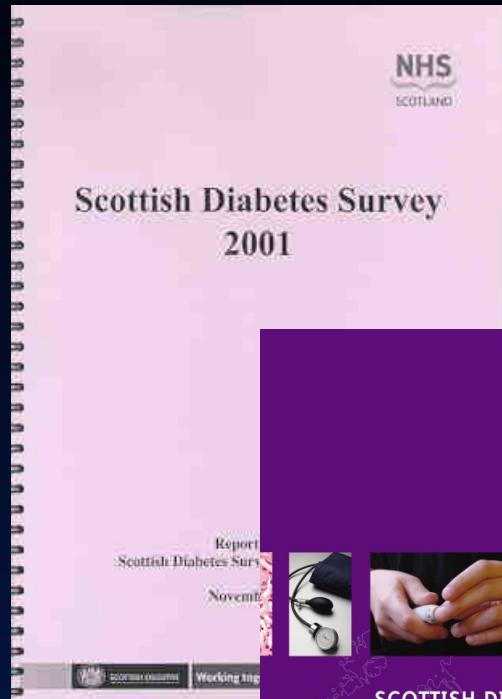
*The Annual Report of NHS Tayside  
Diabetes Managed Clinical Network*

**2009/10**

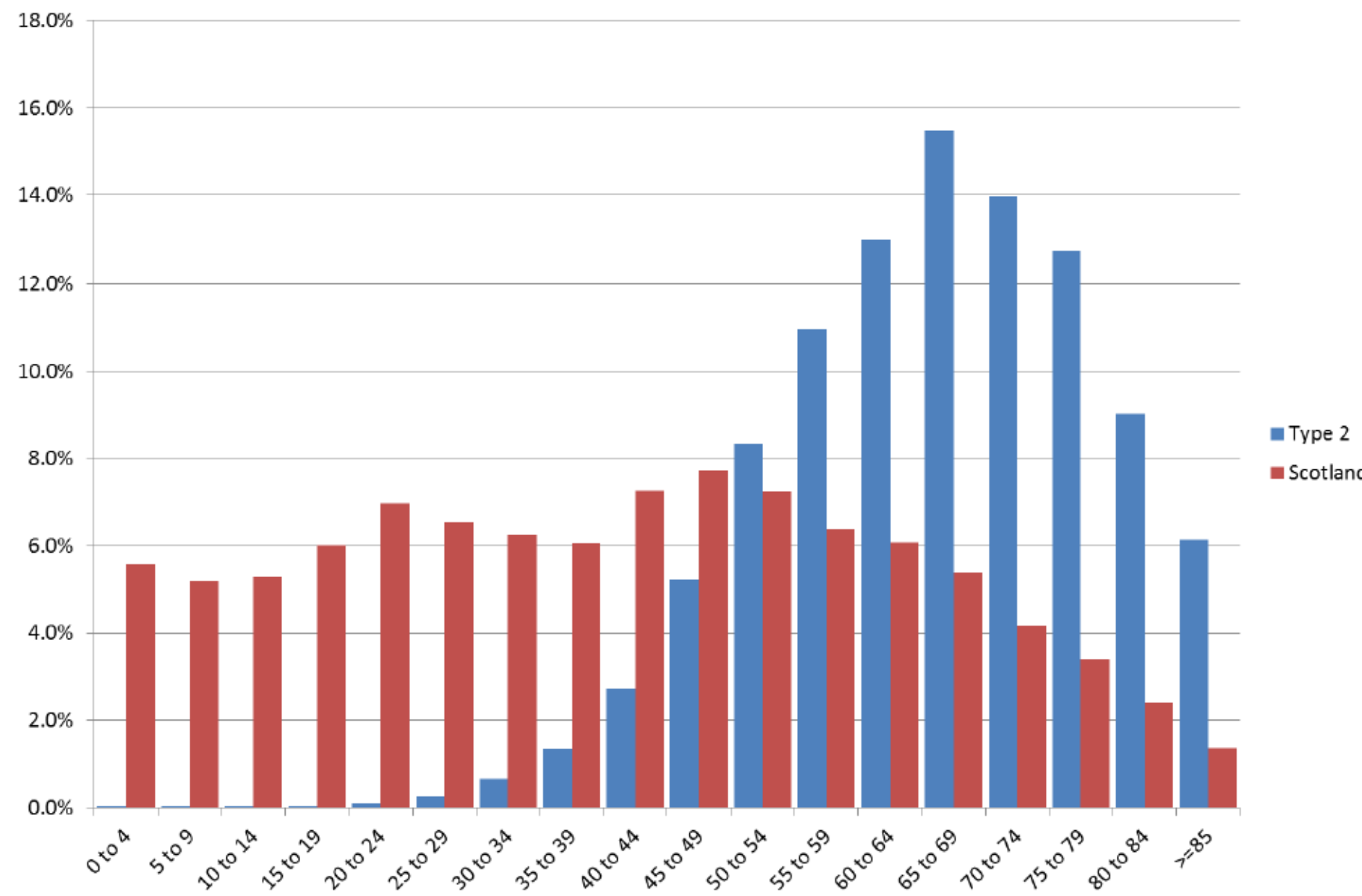
**[www.diabetes-healthnet.ac.uk](http://www.diabetes-healthnet.ac.uk)**



# Scottish Diabetes Survey



**Figure 6. Type 2 diabetes: age distribution of people recorded compared with age distribution of general population, Scotland, 2014.**







### User login

Username: \*

Password: \*

**Log in**

[Request new password](#)

### Contact

SDRN Office  
University of Dundee  
Diabetes Support Centre  
Level 8  
Ninewells Hospital  
Dundee  
DD1 9SY  
t 01382 660111 x 34594  
f 01382 740147  
admin[at]sdrn.org.uk

Search the web  
with Everyclick to  
support Diabetes UK



Everyclick is an internet search engine  
with a big difference - it donates half

## Information for Diabetes Patients Overview

The Scottish Diabetes Research Network (SDRN) has been established to speed up development and adoption into the clinic of better treatments to improve the lives of people with diabetes. We would like to invite you to consider giving your permission to be contacted about research studies which may affect the way in which patients with diabetes are treated in future.

Research may include measuring the effects on diabetes of:

- New medicines
- Lifestyle interventions such as diet or exercise
- Genetic make-up

## Research Register

We would like to ask if we can approach you about any research which is relevant to your individual medical history. By signing the Permission to Contact form, we will hold your contact details on a secured Research Register and write to you with details of any studies for which you may be a suitable participant. Access to this database is strictly limited to your normal healthcare provider (usually your GP or hospital consultant) and Scottish Diabetes Research Network (SDRN) staff. Sometimes pharmaceutical companies sponsor clinical research but your details will not be passed on unless you have agreed to take part in a study. Please feel free to discuss with family members or friends your decision before agreeing to join.

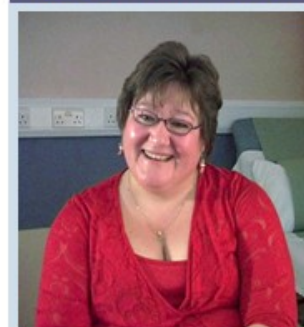
If you agree to join the Research Register you will be given general information about diabetes research in Scotland and a credit-card sized reminder which details how you can leave the register if you change your mind later. Withdrawal involves a simple

### Research Register



**Scotland wide permission  
to contact research  
register**  
[read more...](#)

### Patient Testimonials



**"I took part in a clinical**

ARTICLE

# Use of insulin glargine and cancer incidence in Scotland: a study from the Scottish Diabetes Research Network Epidemiology Group

H. M. Colhoun • SDRN Epidemiology Group

Received: 5 June 2009 / Accepted: 24 June 2009 / Published online: 15 July 2009

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## Abstract

**Aims/hypothesis** The aim of the present study was to examine whether patients with diabetes in Scotland using insulin glargine have a greater cancer risk than patients using other types of insulin.

**Methods** We used a nationwide diabetes clinical database that covers the majority of the Scottish population with diagnosed diabetes, and examined patients with diabetes who were exposed to any insulin therapy between 1 January 2002 and 31 December 2005. Among these we defined a fixed cohort based on exposure during a 4 month period in 2003 ( $n=36,254$ , in whom 715 cases of cancer occurred) and a cohort of new insulin users across the period ( $n=12,852$  in whom 381 cancers occurred). Records from these cohorts

$p=0.9$  in the fixed cohort) The subset of patients using insulin glargine alone ( $n=447$ ) had a significantly higher incidence of all cancers than those using other insulins only ( $n=32,295$ ) (HR 1.55, 95% CI 1.01–2.37,  $p=0.045$ ), and those using insulin glargine with other insulins ( $n=3,512$ ) had a slightly lower incidence (HR 0.81, 95% CI 0.55–1.18,  $p=0.26$ ). There were important differences in baseline characteristics between these three groups, although the risk ratios were broadly unaltered on adjustment for these. Overall, there was no increase in breast cancer rates associated with insulin glargine use (HR 1.49, 95% CI 0.79–2.83, though insulin glargine only users had a higher rate than those using non-glargine insulin only (HR 3.39, 95% CI 1.46–7.85,  $p=0.004$ ). Among type 2 diabetic

[my preferences](#) | [logout](#)[my details](#) | [my lifestyle](#) | [my results](#) | [my eyes](#) | [my feet](#) | [my medication](#) | [my diary](#) | [my correspondence](#) | [my recordings](#) | [my summaries](#)**ARCHIBALD MACKIE****My Test Results**[?](#) My target chart: [?](#) HbA1c: 36.0 mmol/mol (5.4%) on 17/11/2011 [?](#) Blood Glucose: 9.0 mmol/L on 12/09/2014 [?](#) Blood Pressure: 180/70 mmHg on 24/03/2014 [?](#) Total Cholesterol: 4.5 mmol/L on 29/11/2013 [?](#) HDL Cholesterol: 1.50 mmol/L on 31/01/2012 [?](#) LDL Cholesterol: 1.2 mmol/L on 30/01/2012 [?](#) Triglycerides: 1.3 mmol/L on 29/01/2012 [?](#) Creatinine: 88.0 umol/L on 17/11/2011 [?](#) Albumin/Creatinine Ratio: > 2 mg/mmol on 15/06/2005 [?](#) eGFR: > 68 ml/min on 05/06/2009 **My Links**

- [What Care to Expect](#)
- [Blood Sugar Testing](#)
- [Change in HbA1c Results](#)

**Print Options**

- [Create PDF](#)
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# EUBIROD

- Dataset
- Data dictionary
- Metadata registry
- Publication
  - Defining a European diabetes data dictionary for clinical audit and healthcare delivery: core standards of the EUBIROD project. *Methods of Information in Medicine*, In Press

# Dataset

BIRO003	TYPE_DM	Type Of Diabetes	Enumerated	1 = Type 1 2 = Type 2 3 = Other Types of Diabetes
BIRO004	SEX	Sex	Enumerated	1 = Male 2 = Female
BIRO005	DOB	Date of Birth	Date/Time	Range: ≥01/01/1900 - <Current Date
BIRO006	DT_DIAG	Date of Diagnosis	Date/Time	Range: ≥DOB - <Current Date
BIRO007	EPI_DATE	Episode Date	Date/Time	Range: ≥DOB - <Current Date
BIRO008	SMOK_STAT	Smoking Status	Enumerated	1 = Current Smoker 2 = Non-Smoker 3 = Ex-Smoker
BIRO009	CIGS_DAY	Cigarettes per day	Integer	Range: 0 – 100
BIRO010	ALCOHOL	Alcohol Intake	Integer	Range: 0 – 60
BIRO011	WEIGHT	Weight	Real	Range: 5 – 300
BIRO012	HEIGHT	Height	Real	Range: 0.3 – 3
BIRO013	BMI	Body Mass Index	Real	Range: 0.01 – 100
BIRO014	SBP	Systolic Blood Pressure	Integer	Range: 10 – 400
BIRO015	DBP	Diastolic Blood Pressure	Integer	Range: 10 – 300
BIRO016	HBA1C	HbA1c	Real	Range: 2.15 – 25.02
BIRO017	CREAT	Creatinine	Integer	Range: 3 – 1999
BIRO018	MA_TEST	Microalbumin	Enumerated	1 = MA Test Normal 2 = MA Test Abnormal 0 = No MA Test Recorded
BIRO019	CHOL	Total Cholesterol	Real	Range: 0.01 – 50
BIRO020	HDL	HDL	Real	Range: 0.01 – 5
BIRO021	TG	Triglycerides	Real	Range: 0.01 – 100
BIRO022	RETINAL_EXAM	Retinal Examination	Enumerated	1 = Yes 0 = No
BIRO023	RETINA	Retinopathy Status	Enumerated	1 = No Retinopathy 2 = Background Retinopathy 3 = Referable Retinopathy
BIRO024	MACULA	Maculopathy Status	Enumerated	1 = No Maculopathy 2 = Referable Maculopathy
BIRO025	FOOT_EXAM	Foot Examination	Enumerated	1 = Yes 0 = No
BIRO026	PULSES	Foot Pulses	Enumerated	1 = Present





# Meta Registry of Diabetes Data Sources



The **BIRO system** is a global solution for the international exchange of diabetes information.

The **"Meta Registry of Diabetes Data Sources"** is the central resource for BIRO user management. It allows EUBIROD partners to autonomously register and manage local data sources that will be used to produce the global report.

For each data source, the following **structural characteristics** are required:

- user details (name of the person entering information)
- site header (contact details of the institution managing data)
- site profile (data source type and structural characteristics of the catchment area)
- BIRO Unique Data Source Identifier (NUTS code of the catchment area)

Additionally, we request users to further specify:

- **local data items** (consistency/completeness of BIRO parameters at the local source)
- **privacy requirements**(privacy performance assessment)

Successful completion of these details allows using the BIRO software in **integrated mode** to submit aggregate data and produce standardized benchmarking reports in a completely autonomous way.

**Please login to access the secure area of the Meta-Registry:**

Username

Password

Login

To access a demo of the registration process, please login with these credentials:

USERNAME: user

PASSWORD: guest



# Meta Registry of Diabetes Data Sources

# EUBIROD



Welcome Scott Cunningham. You have a role of: DataSourceUser and you are displaying data for: Angus and Dundee City

[Logout](#) [Change Data Source](#) [Change your Password](#)

Data Source: UKM21.1

[Structure](#)[Local Data Items](#)[Privacy Questionnaire](#)[Download](#)[User Guide](#)

Active Foot Ulcer	✓
Activity End Date	✓
Activity End Reason	✓
Activity Start Date	✓
Activity Start Reason	✓
Alcohol Intake	✓
Alcohol Status	✓
Amputation	✓
Anti-Platelet Therapy	✓
Antihypertensive Medication	✓
Average Injections	✓
Blindness	✓
Body Mass Index	✓
Cigarettes per day	✓
Creatinine	✓
Date	✓
Date of Birth	✓
Diabetes Specific Education	✓
Diastolic Blood	✓

Click on one of the item from the left list to display the stored data

## BIRO DATA ITEM: BIRO032

Field name: **Active Foot Ulcer**

**Clinical Definition** Ulcer is defined as any break in the epithelium greater than a crack below the level of the malleoli. It is required as an indicator of possible risk of future amputation 1 = Yes: Ulcer field contains valid year 0 = No: Ulcer field is NULL or contains invalid numeric data

**Recorded** ☒ Yes ☐ No

**Mandatory/Routine** ☐ Mandatory ☒ Routine

**Consistency** Medium

**Quality Score** Medium

**Data Completeness** 70%

**Additional Comments** Arbitrary percentage as data inclusion from clinical systems is not vetted.

[Save](#)[Reset Fields](#)



You are not logged in. (Login)

## Navigation



### Home

 Site news

► Courses

## Site news



Welcome to the Eubirod E-learning platform

by Massimo Massi Benedetti - Friday, 17 February 2012, 01:28 PM

This portal contains self-administered tests and questionnaires to evaluate the effectiveness of the training activity.

If you wish to have a look at the available courses, please simply click on any of the courses listed below or in the "Courses" navigation link on your left.

Guests are able to access the Course content automatically, but not to attempt Course quizzes or assessments.

## Online users



(last 5 minutes)



Massimo Brillante



Massimo Massi Benedetti

## Courses

### ▼ Eubirod Core

-  Common Dataset
-  Customized Toolbox
-  EU Diabetes Report
-  International Diabetes Report
-  Privacy, Data Protection and Health Information Systems



Collapse all Expand all

Search courses:

You are not logged in. (Login)



*my diabetes ★ my way*

**Dr Scott G Cunningham, Technical Consultant**  
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