



**EUropean Best Information  
through Regional Outcomes in Diabetes**

# **MASTER DATA DICTIONARY**

## **DOCUMENT V1.1**

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## Document Change History

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Version	Date	Author	Reason for Update
1.0	September 2011	Scott Cunningham	First version
1.1	September 2011	Scott Cunningham	Added Data Dictionary content. Renamed document.

## EUBIROD Clinical Dataset

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This section describes the clinical parameters of the EUBIROD dataset. A short summary can be viewed in [Appendix 1](#).

### **Patient Profile**

<b>Parameter:</b>	Patient ID
<b>BIRO Ref:</b>	BIRO001
<b>Field Name:</b>	PAT_ID
<b>Data Type:</b>	String(200)
<b>Definition:</b>	Unique patient identification number assigned by centre (data source)
<b>Mandatory:</b>	Yes
<b>Validity:</b>	High

<b>Parameter:</b>	Data Source ID
<b>BIRO Ref:</b>	BIRO002
<b>Field Name:</b>	DS_ID
<b>Data Type:</b>	String(10)
<b>Definition:</b>	Unique centre identification number (Regional NUTS Code – see: <a href="http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP_PUB_WELC">http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP_PUB_WELC</a> )
<b>Mandatory:</b>	Yes
<b>Validity:</b>	High

<b>Parameter:</b>	Type Of Diabetes	
<b>BIRO Ref:</b>	BIRO003	
<b>Field Name:</b>	TYPE_DM	
<b>Data Type:</b>	Enumerated (1, 2, 3)	
<b>Definition:</b>	1 = Type 1	WHO 1999 revised classification: WHO Department of Noncommunicable Disease Surveillance. Definition, Diagnosis and Classification of Diabetes Mellitus and its Complications. Geneva: WHO; 1999. Available from URL <a href="http://whqlibdoc.who.int/hq/1999/who_ncd_ncs_99.2.pdf">http://whqlibdoc.who.int/hq/1999/who_ncd_ncs_99.2.pdf</a> . Type 1 diabetes includes all diabetes due to absolute insulin deficiency caused by a) autoimmune pancreatic destruction and b) idiopathic where there is no evidence of autoimmunity or other identifiable cause.
	2 = Type 2	WHO 1999 revised classification: WHO Department of Noncommunicable Disease Surveillance. Definition, Diagnosis and Classification of Diabetes Mellitus and its Complications. Geneva: WHO; 1999. Available from URL <a href="http://whqlibdoc.who.int/hq/1999/who_ncd_ncs_99.2.pdf">http://whqlibdoc.who.int/hq/1999/who_ncd_ncs_99.2.pdf</a> . Type 2 diabetes includes those forms of diabetes with insulin resistance and an insulin

		secretory defect.
	3 = Other	Other types of Diabetes Mellitus, not specifically Type 1 or Type 2
<b>Mandatory:</b>	Yes	
<b>Validity:</b>	High	
<b>Data Mapping:</b>	IDDM: Patients marked as having Insulin-Dependent Diabetes Mellitus should be classified as having Type 1 Diabetes  NIDDM: Patients marked as having Non Insulin-Dependent Diabetes Mellitus should be classified as having Type 2 Diabetes	

<b>Parameter:</b>	Sex	
<b>BIRO Ref:</b>	BIRO004	
<b>Field Name:</b>	SEX	
<b>Data Type:</b>	Enumerated (1, 2)	
<b>Definition:</b>	1 = Male	Male Phenotype at birth
	2 = Female	Female Phenotype at birth
<b>Mandatory:</b>	Yes	
<b>Validity:</b>	High	

<b>Parameter:</b>	Date of Birth	
<b>BIRO Ref:</b>	BIRO005	
<b>Field Name:</b>	DOB	
<b>Data Type:</b>	Date/Time	
<b>Definition:</b>	Date of birth of subject (ccyy-01-01) Range: ≥01/01/1900 - <Current Date	
<b>Upper Range:</b>	Current Date	
<b>Mandatory:</b>	Yes	
<b>Validity:</b>	High	
<b>Data Mapping:</b>	Only year of birth is necessary in order to maintain anonymity. As such all dates of birth should be stored as 'ccyy-01-01' so that only the year of birth is known. This will also allow the full data of birth to be stored without changing the dataset in future.	

<b>Parameter:</b>	Year of Diagnosis	
<b>BIRO Ref:</b>	BIRO006	
<b>Field Name:</b>	DT_DIAG	
<b>Data Type:</b>	Date/Time	
<b>Definition:</b>	Year of Diagnosis of Diabetes Mellitus (ccyy-mm-dd) Range: ≥DOB - <Current Date	
<b>Upper Range:</b>	Current Year	
<b>Mandatory:</b>	Yes	
<b>Validity:</b>	High	
<b>Data Mapping:</b>	Data stored in date format to allow future refinement. At present, year of diagnosis must be recorded as '01/01/ccyy'	

### ***Episode Identification***

<b>Parameter:</b>	Date
<b>BIRO Ref:</b>	BIRO007
<b>Field Name:</b>	EPI_DATE
<b>Data Type:</b>	Date/Time
<b>Definition</b>	Date when information recorded - Every clinical field has an associated date of recording or event Range: ≥DOB - <Current Date
<b>Upper Range:</b>	Current Date
<b>Mandatory:</b>	Yes
<b>Validity:</b>	High
<b>Data Mapping:</b>	For datasets such as DiabCare where a date of result is not recorded for each individual data item, but it is known that the result was recorded in the last year, the associated date will be recorded as the review date. This is to allow these datasets to contribute to indicators detailing results “recorded in the last 12 months”.

### ***Lifestyle Factors***

<b>Parameter:</b>	Smoking Status
<b>BIRO Ref:</b>	BIRO008
<b>Field Name:</b>	SMOK_STAT
<b>Data Type:</b>	Enumerated (1, 2, 3)
<b>Definition:</b>	Smoking status at date of contact
	1 Current Smoker
	2 Non-Smoker
	3 Ex-Smoker
<b>Mandatory:</b>	No
<b>Validity:</b>	High

<b>Parameter:</b>	Cigarettes per day
<b>BIRO Ref:</b>	BIRO009
<b>Field Name:</b>	CIGS_DAY
<b>Data Type:</b>	Integer
<b>Definition:</b>	Number or estimate of cigarettes smoked each day – 1 pipe/cigar = 3 cigarettes
<b>Lower Range:</b>	0
<b>Upper Range:</b>	100
<b>Mandatory:</b>	No
<b>Validity:</b>	Medium
	Not recorded in SDCD

<b>Parameter:</b>	Alcohol Status	
<b>BIRO Ref:</b>	BIRO047	
<b>Field Name:</b>	ALC_STAT	
<b>Data Type:</b>	Enumerated (1, 2, 3)	
<b>Definition:</b>	Alcohol status at date of contact	
	1	Current Drinker
	2	Non-Drinker
	3	Ex-Drinker
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	

<b>Parameter:</b>	Alcohol Intake	
<b>BIRO Ref:</b>	BIRO010	
<b>Field Name:</b>	ALCOHOL	
<b>Data Type:</b>	Integer	
<b>Definition:</b>	Alcohol intake per average week. Recording of a numerical value is preferred since recommended consumption limits are subject to periodic revision and may differ for pregnant women.	
<b>Units:</b>	g/week	
<b>Lower Range:</b>	0	
<b>Upper Range:</b>	5000	
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	
	FQSD Definition: Amount or Estimate (Range: <1000 or empty) 50g / week = occasionally 100g / week = some 200g / week = moderate 300g / week = chronic alcoholism	
<b>Data Mapping:</b>	1 unit of alcohol = 10g	

<b>Parameter:</b>	Weight	
<b>BIRO Ref:</b>	BIRO011	
<b>Field Name:</b>	WEIGHT	
<b>Data Type:</b>	Real (nnn.n)	
<b>Definition:</b>	Body-weight of the patient in kilograms	
<b>Units:</b>	Kg	
<b>Lower Range:</b>	5	
<b>Upper Range:</b>	300	
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	



<b>Parameter:</b>	Height
<b>BIRO Ref:</b>	BIRO012
<b>Field Name:</b>	HEIGHT
<b>Data Type:</b>	Real (nnn.nn)
<b>Definition:</b>	Height in metres - measured without shoes. It is particularly important to measure regularly the height of children. In adults a single recording will usually be sufficient.
<b>Units:</b>	Metres
<b>Lower Range:</b>	0.3
<b>Upper Range:</b>	3
<b>Mandatory:</b>	No
<b>Validity:</b>	High
<b>Data Mapping:</b>	Height measured in m = height in cm/100

<b>Parameter:</b>	Body Mass Index
<b>BIRO Ref:</b>	BIRO013
<b>Field Name:</b>	BMI
<b>Data Type:</b>	Real (nnn.nn)
<b>Definition:</b>	$BMI = \text{weight(kg)}/\text{height(m)}^2$
<b>Units:</b>	kg/ m <sup>2</sup>
<b>Lower Range:</b>	0.01
<b>Upper Range:</b>	100
<b>Mandatory:</b>	No
<b>Validity:</b>	High
	Not an explicitly listed field in DiabCare, but can be easily calculated using weight and height
<b>Data Mapping:</b>	$\text{weight(kg)}/\text{height(m)}^2$

<b>Parameter:</b>	Systolic Blood Pressure
<b>BIRO Ref:</b>	BIRO014
<b>Field Name:</b>	SBP
<b>Data Type:</b>	Integer
<b>Definition:</b>	Patient's blood-pressure in mmHg after 5 minutes rest in seated position with arm elevated/supported
<b>Units:</b>	mmHg
<b>Lower Range:</b>	10
<b>Upper Range:</b>	400
<b>Mandatory:</b>	No
<b>Validity:</b>	High

<b>Parameter:</b>	Diastolic Blood Pressure
<b>BIRO Ref:</b>	BIRO015
<b>Field Name:</b>	DBP
<b>Data Type:</b>	Integer
<b>Definition:</b>	Patient's blood-pressure in mmHg after 5 minutes rest in seated position with arm elevated/supported
<b>Units:</b>	mmHg
<b>Lower Range:</b>	10
<b>Upper Range:</b>	300
<b>Mandatory:</b>	No
<b>Validity:</b>	High

<b>Parameter:</b>	Self Monitoring
<b>BIRO Ref:</b>	BIRO044
<b>Field Name:</b>	SELF_MON
<b>Data Type:</b>	Enumerated(1, 2, 3)
<b>Definition:</b>	Self monitoring refers to use of reagent strips for monitoring blood or urinary glucose (at least 1 test per week).
	1   Urine
	2   Blood Glucose
	3   Both
<b>Mandatory:</b>	No
<b>Validity:</b>	High

<b>Parameter:</b>	Diabetes Specific Education
<b>BIRO Ref:</b>	BIRO045
<b>Field Name:</b>	EDUCATION
<b>Data Type:</b>	Enumerated(0, 1)
<b>Definition:</b>	Non-specialist diabetes-related education which may be delivered in verbal, written or multimedia format. Topics of education may include: healthy eating and diet, illness, renal, hypoclycaemia, exercise, pregnancy
	1 = Yes   Date of diabetes specific education is valid
	0 = No   Date of diabetes specific education is NULL or contains invalid date
<b>Mandatory:</b>	No
<b>Validity:</b>	Low – Vague detail

<b>Parameter:</b>	Diabetes Disease Management Programme
<b>BIRO Ref:</b>	BIRO048
<b>Field Name:</b>	ENROL_DMP
<b>Data Type:</b>	Enumerated(0, 1)
<b>Definition:</b>	Patient enrolment in a structured educational programme for diabetes, managed by a diabetes specialist health care professional
	1 = Yes   Date of record of patient enrolment in structured Diabetes Disease Management Programme
	0 = No   Date of record of patient enrolment in structured Diabetes Disease Management Programme is NULL or contains invalid date
<b>Validity:</b>	Low
<b>Data Mapping:</b>	Enrolment in Disease Management Programme not recorded on DiabCare Basic Information sheet or Umbria Dataset

### **Laboratory Tests**

<b>Parameter:</b>	HbA1c
<b>BIRO Ref:</b>	BIRO016
<b>Field Name:</b>	HBA1C
<b>Data Type:</b>	Real (nnn.nn)
<b>Definition:</b>	Current Glycated haemoglobin value in %
<b>Units:</b>	%
<b>Lower Range:</b>	2.15
<b>Upper Range:</b>	25.02

<b>Mandatory:</b>	No
<b>Validity:</b>	High

<b>Parameter:</b>	Creatinine
<b>BIRO Ref:</b>	BIRO017
<b>Field Name:</b>	CREAT
<b>Data Type:</b>	Integer
<b>Definition:</b>	Serum creatinine value in $\mu\text{mol/l}$
<b>Units:</b>	$\mu\text{mol/l}$
<b>Lower Range:</b>	3
<b>Upper Range:</b>	1999
<b>Mandatory:</b>	No
<b>Validity:</b>	High
	SDCD defines creatinine in $\mu\text{mol/l}$ . FQSD defines creatinine in mg/dl – Values can be mapped.
<b>Data Mapping:</b>	To convert mg/dl to $\mu\text{mol/l}$ , divide by 0.0131

<b>Parameter:</b>	Microalbumin
<b>BIRO Ref:</b>	BIRO018
<b>Field Name:</b>	MA_TEST
<b>Data Type:</b>	Enumerated (0, 1, 2)
<b>Definition:</b>	1 = MA Test Normal
	2 = MA Test Abnormal
	0 = No MA Test Recorded
<b>Mandatory:</b>	No
<b>Validity:</b>	High
	In Scotland, urinary albumin testing is acceptable using urine albumin (mg/l), albumin:creatinine ratio (mg/mmol), overnight albumin excretion rate ( $\mu\text{g/min}$ ) or 24hr albumin excretion rate. Decided at Graz meeting only to record test recorded Y/N. Decided in Cyprus to record Normal / Abnormal.

<b>Parameter:</b>	Total Cholesterol
<b>BIRO Ref:</b>	BIRO019
<b>Field Name:</b>	CHOL
<b>Data Type:</b>	Integer
<b>Definition:</b>	Serum total cholesterol can be either fasted or unfasted
<b>Units:</b>	mmol/L
<b>Lower Range:</b>	0.01
<b>Upper Range:</b>	50
<b>Mandatory:</b>	No
<b>Validity:</b>	High
	FQSD also allows total cholesterol in mg/dl.
<b>Data Mapping:</b>	To convert mg/dl to mmol/L, divide by 38.61

<b>Parameter:</b>	HDL
<b>BIRO Ref:</b>	BIRO020
<b>Field Name:</b>	HDL
<b>Data Type:</b>	Integer
<b>Definition:</b>	Serum HDL cholesterol can be either fasted or unfasted
<b>Units:</b>	mmol/L
<b>Lower Range:</b>	0.01

<b>Upper Range:</b>	5
<b>Mandatory:</b>	No
<b>Validity:</b>	High
<b>Data Mapping:</b>	To convert mg/dl to mmol/L, divide by 38.61

<b>Parameter:</b>	LDL
<b>BIRO Ref:</b>	BIRO046
<b>Field Name:</b>	LDL
<b>Data Type:</b>	Integer
<b>Definition:</b>	Serum LDL cholesterol can be either fasted or unfasted
<b>Units:</b>	mmol/L
<b>Lower Range:</b>	0.01
<b>Upper Range:</b>	15
<b>Mandatory:</b>	No
<b>Validity:</b>	High
<b>Data Mapping:</b>	To convert mg/dl to mmol/L, divide by 38.61

<b>Parameter:</b>	Triglycerides
<b>BIRO Ref:</b>	BIRO021
<b>Field Name:</b>	TG
<b>Data Type:</b>	Integer
<b>Definition:</b>	Serum triglycerides can be either fasted or unfasted
<b>Units:</b>	mmol/L
<b>Lower Range:</b>	0.01
<b>Upper Range:</b>	100
<b>Mandatory:</b>	No
<b>Validity:</b>	High
<b>Data Mapping:</b>	To convert mg/dl to mmol/L, divide by 38.61

### **Screening Events**

<b>Parameter:</b>	Retinal Examination	
<b>BIRO Ref:</b>	BIRO022	
<b>Field Name:</b>	RETINAL_EXAM	
<b>Data Type:</b>	Enumerated (0, 1)	
<b>Definition:</b>	1 = Yes	Fundus Examination Performed
	0 = No	Year of Fundus Examination field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	

<b>Parameter:</b>	Retinopathy Status	
<b>BIRO Ref:</b>	BIRO023	
<b>Field Names:</b>	RETINA	
<b>Data Type:</b>	Enumerated(0, 1, 2)	
<b>Definition:</b>	0 = No Retinopathy	No Diabetic retinopathy
	1 = Background Retinopathy	Background diabetic retinopathy
	2 = Referable Retinopathy	Pre-Proliferative Retinopathy / Proliferative Retinopathy
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	



<b>Parameter:</b>	Maculopathy	
<b>BIRO Ref:</b>	BIRO024	
<b>Field Names:</b>	MACULA	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	0 = No Maculopathy	No Diabetic maculopathy
	1 = Referable Maculopathy	Diabetic Maculopathy
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	

<b>Parameter:</b>	Foot Examination	
<b>BIRO Ref:</b>	BIRO025	
<b>Field Name:</b>	FOOT_EXAM	
<b>Data Type:</b>	Enumerated (0, 1)	
<b>Definition:</b>	1 = Yes	Foot Examination Performed
	0 = No	Year of Foot Examination field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	

<b>Parameter:</b>	Foot Pulses	
<b>BIRO Ref:</b>	BIRO026	
<b>Field Name:</b>	PULSES	
<b>Data Type:</b>	Enumerated (0, 1)	
<b>Definition:</b>	1 = Present	Foot pulses should be recorded as present if either one or both of the two major arteries (dorsalis pedis and posterior tibial) of the foot are felt upon physical palpation. The presence of pulses by Doppler ankle pressure should be interpreted with caution since normal readings may be recorded in the presence of medial arterial calcification and could be misleading.
	0 = Absent	Foot Pulses Absent
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	

<b>Parameter:</b>	Foot Sensation	
<b>BIRO Ref:</b>	BIRO027	
<b>Field Name:</b>	FTSENS	
<b>Data Type:</b>	Enumerated (0, 1)	
<b>Definition:</b>	1 = Normal	Normal foot sensation
	0 = Abnormal	Foot Sensation can be considered abnormal if monofilament and/or vibration sensation are impaired as defined below.
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	
<b>Data Mapping:</b>	<p>Monofilament Testing: Test for detection of monofilament of 10 gram weight. Apply monofilament to 1st, 3rd &amp; 5th metatarsal heads and plantar surface of great toe and 3rd toe. Failure to detect two or more out of five stimuli represents abnormal sensation.</p> <p>Vibration Sensation: Test for perception of vibration of a 128 Hz tuning fork over the medial malleolus for 5 seconds or more.</p>	

## Clinical Outcomes

<b>Parameter:</b>	End Stage Renal Failure	
<b>BIRO Ref:</b>	BIRO028	
<b>Field Name:</b>	ESRF	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	Year that either serum creatinine was chronically greater than 300umol/l (i.e. >300 umol/l on two occasions three months apart) or the patient was placed on permanent dialysis or received a renal transplant.	
	1 = Yes	Year of ESRF field contains valid year number
	0 = No	Year of ESRF field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	
<b>Data Mapping:</b>	For datasets where only the year is recorded, the data must be recorded as '01/01/ccyy' Where year unknown, but event confirmed, record '01/01/1900'	

<b>Parameter:</b>	Renal Dialysis	
<b>BIRO Ref:</b>	BIRO029	
<b>Field Name:</b>	DIALYSIS	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	Dialysis (Year)	
	1 = Yes	Year of Dialysis field contains valid year number
	0 = No	Year of Dialysis field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	
<b>Data Mapping:</b>	For datasets where only the year is recorded, the data must be recorded as '01/01/ccyy' Where year unknown, but event confirmed, record '01/01/1900'	

<b>Parameter:</b>	Renal Transplant	
<b>BIRO Ref:</b>	BIRO030	
<b>Field Name:</b>	TRANSPLANT	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	Transplantation (Year)	
	1 = Yes	Year of Transplant field contains valid year number
	0 = No	Year of Transplant field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	
<b>Data Mapping:</b>	For datasets where only the year is recorded, the data must be recorded as '01/01/ccyy' Where year unknown, but event confirmed, record '01/01/1900'	

<b>Parameter:</b>	Stroke
<b>Field Name:</b>	STROKE
<b>BIRO Ref:</b>	BIRO031
<b>Data Type:</b>	Enumerated(0, 1)
<b>Definition:</b>	Cerebrovascular accident (stroke) is defined as rapidly developing signs of focal (and/or global) disturbance of cerebral function lasting more than 24 hours or leading to death with no apparent cause other than vascular origin.
	1 = Yes   Stroke field contains valid year
	0 = No   Stroke field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No
<b>Validity:</b>	High
<b>Data Mapping:</b>	For datasets where only the year is recorded, the data must be recorded as '01/01/ccyy' Where year unknown, but event confirmed, record '01/01/1900'

<b>Parameter:</b>	Active Foot Ulcer
<b>BIRO Ref:</b>	BIRO032
<b>Field Names:</b>	ULCER
<b>Data Type:</b>	Enumerated(0, 1)
<b>Definition:</b>	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
<b>Mandatory:</b>	No
<b>Validity:</b>	High
<b>Data Mapping:</b>	For datasets where only the year is recorded, the data must be recorded as '01/01/ccyy' Where year unknown, but event confirmed, record '01/01/1900'

<b>Parameter:</b>	Myocardial Infarction
<b>BIRO Ref:</b>	BIRO033
<b>Field Name:</b>	MI
<b>Data Type:</b>	Enumerated(0, 1)
<b>Definition:</b>	Myocardial infarction proven by ECG, cardiac enzymes or heart perfusion scan or other reliable methodology, but not on clinical features alone.
	1 = Yes   MI field contains valid year
	0 = No   MI field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No
<b>Validity:</b>	High
<b>Data Mapping:</b>	For datasets where only the year is recorded, the data must be recorded as '01/01/ccyy' Where year unknown, but event confirmed, record '01/01/1900'



<b>Parameter:</b>	Laser	
<b>BIRO Ref:</b>	BIRO034	
<b>Field Name:</b>	LASER	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition</b>	Record of each episode of laser treatment on eye.	
	1 = Yes	Laser left/right field contains valid year number
	0 = No	Laser left/right field are NULL or contain invalid numeric data
<b>Mandatory:</b>	No	
<b>Validity:</b>	Medium	
	Only reference to laser in Diabcare documentation refers to Laser <3 months after diagnosis	
<b>Data Mapping:</b>	For datasets where only the year is recorded, the data must be recorded as '01/01/ccyy' Where year unknown, but event confirmed, record '01/01/1900'	

<b>Parameter:</b>	Hypertension	
<b>BIRO Ref:</b>	BIRO035	
<b>Field Name:</b>	HYPERTENSION	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition</b>	Systolic blood pressure over 140 AND Diastolic blood pressure over 90	
	1 = Yes	Hypertension field contains valid year number
	0 = No	Hypertension field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	
	FQSD Definition: Hypertension is defined by either hypertension treatment or blood pressure > 140/90	
<b>Data Mapping:</b>	For datasets where only the year is recorded, the data must be recorded as '01/01/ccyy' Where year unknown, but event confirmed, record '01/01/1900'	

<b>Parameter:</b>	Blindness	
<b>BIRO Ref:</b>	BIRO036	
<b>Field Name:</b>	BLIND	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	Permanent blindness is defined as permanent visual acuity corrected (i.e. wearing corrective lenses) of <3/60 (i.e. CF, HM, PL or NPL) in the better eye.	
	1 = Yes	Blindness field contains valid year number
	0 = No	Blindness field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No	
<b>Validity:</b>	Medium	
	Scottish definition specifies clinical status, FQSD concerns compensation payments.	
<b>Data Mapping:</b>	For datasets where only the year is recorded, the data must be recorded as '01/01/ccyy' Where year unknown, but event confirmed, record '01/01/1900'	

<b>Parameter:</b>	Amputation	
<b>BIRO Ref:</b>	BIRO037	
<b>Field Name:</b>	AMPUT	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	Removal of forefoot or part of the lower limb. Includes transfemoral and transtibial amputations.	
	1 = Yes	Amputation field contains valid year number
	0 = No	Amputation field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	
<b>Data Mapping:</b>	For datasets where only the year is recorded, the data must be recorded as '01/01/ccyy' Where year unknown, but event confirmed, record '01/01/1900'	

### **Medication**

<b>Parameter:</b>	Antihypertensive Medication	
<b>BIRO Ref:</b>	BIRO038	
<b>Field Name:</b>	HYPERT_MED	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	1 = Yes	Date of record of treatment using antihypertensive drugs is valid
	0 = No	Date of record of treatment using antihypertensive drugs is NULL or contains invalid date
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	
<b>Data Mapping:</b>	For NHS Scotland data, anti-hypertensive medication will be extracted using prescribed drug British National Formulae (BNF) Code	

<b>Parameter:</b>	Hypoglycaemic Drug Therapy	
<b>BIRO Ref:</b>	BIRO039	
<b>Field Name:</b>	DRUG_THERAPY	
<b>Data Type:</b>	Enumerated(1, 2,3, 4)	
<b>Definition:</b>	1	Insulin Only
	2	Tablet Only
	3	Insulin and Tablets
	4	None (Diet Only)
	Date of treatment is valid	
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	

<b>Parameter:</b>	Pump Therapy	
<b>BIRO Ref:</b>	BIRO041	
<b>Field Name:</b>	PUMP_THERAPY	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	1 = Yes	Date of record of treatment by insulin pump is valid
	0 = No	Date of record of treatment by insulin pump is NULL or contains invalid date
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	
<b>Data Mapping:</b>	For NHS Scotland data, pump therapy detail will be extracted using prescribed drug British National Formulae (BNF) Code21	

<b>Parameter:</b>	Inhaled Therapy	
<b>BIRO Ref:</b>	BIRO042	
<b>Field Name:</b>	INHALED_THERAPY	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	1 = Yes	Date of record of treatment by inhaled therapy is valid
	0 = No	Date of record of treatment by inhaled therapy is NULL or contains invalid date
<b>Mandatory:</b>	No	
<b>Validity:</b>	Medium	
	Inhaled therapy not recorded on DiabCare Basic Information sheet.	

<b>Parameter:</b>	Average Injections	
<b>BIRO Ref:</b>	BIRO043	
<b>Field Name:</b>	INJECTIONS	
<b>Data Type:</b>	Real (nn.nn)	
<b>Definition:</b>	Average number of insulin injections recorded per day	
<b>Mandatory:</b>	No	
<b>Validity:</b>	Low	
	Average injections per day not recorded in SDCD or Umbria Dataset.	

<b>Parameter:</b>	Lipid-Lowering Therapy	
<b>BIRO Ref:</b>	BIRO046	
<b>Field Name:</b>	LIPID_THERAPY	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	1 = Yes	Date of record of treatment using lipid lowering drugs is valid
	0 = No	Date of record of treatment using lipid lowering drugs is NULL or contains invalid date
<b>Mandatory:</b>	No	
<b>Validity:</b>	Medium	
<b>Data Mapping:</b>	Lipid-lowering therapy not recorded on DiabCare Basic Information sheet. For NHS Scotland data, lipid-lowering medication will be extracted using prescribed drug British National Formulary (BNF) Code	

<b>Parameter:</b>	Anti-Platelet Therapy	
<b>BIRO Ref:</b>	BIRO047	
<b>Field Name:</b>	ANTIPLATELET_THERAPY	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	1 = Yes	Date of record of treatment using anti-platelet drugs is valid
	0 = No	Date of record of treatment using anti-platelet drugs is NULL or contains invalid date
<b>Mandatory:</b>	No	
<b>Validity:</b>	Low	
<b>Data Mapping:</b>	Anti-platelet therapy not recorded on DiabCare Basic Information sheet or Umbria Dataset For NHS Scotland data, anti-platelet medication will be extracted using prescribed drug British National Formulary (BNF) Code	

In order to better support the core BIRO Box and statistical analysis, it was requested the all oral drug therapies were split into distinct data items. These have now been created as follows:

<b>Parameter:</b>	Sulphonylurea Therapy	
<b>BIRO Ref:</b>	BIRO055	
<b>Field Name:</b>	SUPHONYLUREAS	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	Patient recorded as receiving Sulphonylurea treatment	
	1 = Yes	Sulphonylurea therapy field contains valid year number
	0 = No	Sulphonylurea therapy field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No	
<b>Validity:</b>	Medium	
<b>Data Mapping:</b>	For NHS Scotland data, oral drug therapy will be extracted using prescribed drug British National Formulae (BNF) Code	

<b>Parameter:</b>	Biguanide Therapy	
<b>BIRO Ref:</b>	BIRO056	
<b>Field Name:</b>	BIGUANIDES	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	Patient recorded as receiving Biguanide treatment	
	1 = Yes	Biguanide therapy field contains valid year number
	0 = No	Biguanide therapy field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No	
<b>Validity:</b>	Medium	
<b>Data Mapping:</b>	For NHS Scotland data, oral drug therapy will be extracted using prescribed drug British National Formulae (BNF) Code	

<b>Parameter:</b>	Glucosidase Inhibitor Therapy	
<b>BIRO Ref:</b>	BIRO057	
<b>Field Name:</b>	GLUCOSIDASE_INHIBITOR	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	Patient recorded as receiving Glucosidase Inhibitor treatment	
	1 = Yes	Glucosidase Inhibitor therapy field contains valid year number
	0 = No	Glucosidase Inhibitor therapy field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No	
<b>Validity:</b>	Medium	
<b>Data Mapping:</b>	For NHS Scotland data, oral drug therapy will be extracted using prescribed drug British National Formulae (BNF) Code	

<b>Parameter:</b>	Glitazone Therapy	
<b>BIRO Ref:</b>	BIRO058	
<b>Field Name:</b>	GLITAZONES	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	Patient recorded as receiving Glitazone treatment	
	1 = Yes	Glitazone therapy field contains valid year number
	0 = No	Glitazone therapy field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No	
<b>Validity:</b>	Medium	
<b>Data Mapping:</b>	For NHS Scotland data, oral drug therapy will be extracted using prescribed drug British National Formulae (BNF) Code	

<b>Parameter:</b>	Glinide Therapy	
<b>BIRO Ref:</b>	BIRO059	
<b>Field Name:</b>	GLINIDES	
<b>Data Type:</b>	Enumerated(0, 1)	
<b>Definition:</b>	Patient recorded as receiving Glinide treatment	
	1 = Yes	Glinide therapy field contains valid year number
	0 = No	Glinide therapy field is NULL or contains invalid numeric data
<b>Mandatory:</b>	No	
<b>Validity:</b>	Medium	
<b>Data Mapping:</b>	For NHS Scotland data, oral drug therapy will be extracted using prescribed drug British National Formulae (BNF) Code	

### ***Patient Activity Data Items***

<b>Parameter:</b>	Activity Start Date	
<b>BIRO Ref:</b>	BIRO049	
<b>Field Name:</b>	AD_START_DATE	
<b>Data Type:</b>	Date/Time	
<b>Definition:</b>	Date of commencement of current period of patient activity	
<b>Mandatory:</b>	No	

<b>Parameter:</b>	Activity Start Reason	
<b>BIRO Ref:</b>	BIRO050	
<b>Field Name:</b>	AD_START_REASON	
<b>Data Type:</b>	Enumerated(1, 2, 3)	
<b>Definition:</b>	1 = Birth	Patient born with diabetes on start date
	2 = Diabetes Diagnosis	Patient diagnosed with diabetes on start date
	3 = Transferred In	Patient transferred in with diabetes diagnosis
<b>Mandatory:</b>	No	

<b>Parameter:</b>	Activity End Date	
<b>BIRO Ref:</b>	BIRO051	
<b>Field Name:</b>	AD_END_DATE	
<b>Data Type:</b>	Date/Time	
<b>Definition:</b>	Date of completion of current period of patient activity	
<b>Mandatory:</b>	No	

<b>Parameter:</b>	Activity End Reason	
<b>BIRO Ref:</b>	BIRO052	
<b>Field Name:</b>	AD_END_REASON	
<b>Data Type:</b>	Enumerated(1, 2, 3)	
<b>Definition:</b>	1 = Death	Patient with diabetes died on end date
	2 = Transferred Out	Patient with diabetes transferred out on end date
	3 = Lost to Follow-up	Patient with diabetes lost to follow
<b>Mandatory:</b>	No	

### ***Redundant Data Items***

The following items have been superseded or removed:

<b>Parameter:</b>	Oral Drug Therapy	
<b>BIRO Ref:</b>	BIRO040	
<b>Field Name:</b>	ORAL_THERAPY	
<b>Data Type:</b>	Enumerated(1, 2,3, 4, 5)	
<b>Definition:</b>	1	Sulphonylureas
	2	Biguanides
	3	Glucosidase Inhibitors
	4	Glitazones
	5	Glinides
	Date of treatment is valid	
<b>Mandatory:</b>	No	
<b>Validity:</b>	High	
<b>Data Mapping:</b>	For NHS Scotland data, oral drug therapy will be extracted using prescribed drug British National Formulae (BNF) Code	

## Clinical Site Data Items

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This section describes the clinical site parameters of the EUBIROD dataset. A short summary can be viewed in [Appendix 2](#).

### Site Demography

<b>Parameter:</b>	Data Source ID
<b>BIRO Ref:</b>	BIRO002
<b>Field Name:</b>	DS_ID
<b>Data Type:</b>	String(10)
<b>Definition:</b>	Unique centre identification number (Regional NUTS Code – see: <a href="http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP_PUB_WELC">http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP_PUB_WELC</a> )
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Country of Origin
<b>BIRO Ref:</b>	BIRO101
<b>Field Name:</b>	DS_COUNTRY
<b>Data Type:</b>	String(25)
<b>Definition:</b>	The country from which the clinical data originates
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Data Source Type
<b>Field Name:</b>	DS_TYPE
<b>BIRO Ref:</b>	BIRO102
<b>Data Type:</b>	Enumerated
<b>Definition:</b>	The type of source from which data has been extracted
	1 GP
	2 Hospital Clinic (Internal Medicine)
	3 Hospital Clinic (Diabetes)
	4 Regional Shared-data Register
	5 Regional Primary Care Project
	6 Disease Management Programme
	7 Hospital Discharge Information
	8 Insurance Programme
	9 Retinal Screening Programme
	10 Diabetes Specialist Nurse Clinic
	11 National Data – Complete
	12 National Data – Sample
	13 Regional Data – Sample
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Data Source Name
<b>BIRO Ref:</b>	BIRO103
<b>Field Name:</b>	DS_NAME
<b>Data Type:</b>	String(25)
<b>Definition:</b>	Name used to describe local data source
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Data Source Denominator
<b>BIRO Ref:</b>	BIRO104
<b>Field Name:</b>	DS_DENOM
<b>Data Type:</b>	Integer
<b>Definition:</b>	Current data source population
<b>Units:</b>	Patients (with or without diabetes)
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Geographical Area
<b>BIRO Ref:</b>	BIRO105
<b>Field Name:</b>	DS_AREA
<b>Data Type:</b>	Integer
<b>Definition:</b>	Area of coverage for data source
<b>Units:</b>	m <sup>2</sup>
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Website Address
<b>BIRO Ref:</b>	BIRO106
<b>Field Name:</b>	DS_WEBSITE
<b>Data Type:</b>	String(50)
<b>Definition:</b>	Internet address for Data Source
<b>Mandatory:</b>	No

<b>Parameter:</b>	Mailing Address 1
<b>BIRO Ref:</b>	BIRO107
<b>Field Name:</b>	DS_ADDRESS_1
<b>Data Type:</b>	String(25)
<b>Definition:</b>	First line of Data Source address
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Mailing Address 2
<b>BIRO Ref:</b>	BIRO108
<b>Field Name:</b>	DS_ADDRESS_2
<b>Data Type:</b>	String(25)
<b>Definition:</b>	Second line of Data Source address
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Mailing Address 3
<b>BIRO Ref:</b>	BIRO109
<b>Field Name:</b>	DS_ADDRESS_3
<b>Data Type:</b>	String(25)
<b>Definition:</b>	Third line of Data Source address
<b>Mandatory:</b>	No

<b>Parameter:</b>	Mailing Address 4
<b>BIRO Ref:</b>	BIRO110
<b>Field Name:</b>	DS_ADDRESS_4
<b>Data Type:</b>	String(25)
<b>Definition:</b>	Fourth line of Data Source address
<b>Mandatory:</b>	Yes



<b>Parameter:</b>	Post Code
<b>BIRO Ref:</b>	BIRO111
<b>Field Name:</b>	DS_POST_CODE
<b>Data Type:</b>	String(25)
<b>Definition:</b>	Post Code of Data Source
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Clinical Contact
<b>BIRO Ref:</b>	BIRO112
<b>Field Name:</b>	DS_C_CONTACT
<b>Data Type:</b>	String(25)
<b>Definition:</b>	Clinical representative from Data Source
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Clinical Contact Email Address
<b>BIRO Ref:</b>	BIRO113
<b>Field Name:</b>	DS_C_EMAIL
<b>Data Type:</b>	String(50)
<b>Definition:</b>	Email address of Data Source clinical representative
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Technical Contact
<b>BIRO Ref:</b>	BIRO114
<b>Field Name:</b>	DS_T_CONTACT
<b>Data Type:</b>	String(25)
<b>Definition:</b>	Technical representative from Data Source
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Technical Contact Email Address
<b>BIRO Ref:</b>	BIRO115
<b>Field Name:</b>	DS_T_EMAIL
<b>Data Type:</b>	String(50)
<b>Definition:</b>	Email address of Data Source technical representative
<b>Mandatory:</b>	Yes

## Site Profile

<b>Parameter:</b>	Hospital Beds
<b>BIRO Ref:</b>	BIRO116
<b>Field Name:</b>	DS_BEDS
<b>Data Type:</b>	Integer
<b>Definition:</b>	Total hospital beds within data source geographical area - not separated by category
<b>Units:</b>	Hospital Beds
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Physicians
<b>BIRO Ref:</b>	BIRO117
<b>Field Name:</b>	DS_PHYSICIANS
<b>Data Type:</b>	Integer
<b>Definition:</b>	Physicians within data source geographical area. National statistics can provide information on this indicator.
<b>Units:</b>	Physicians
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Diabetologists
<b>BIRO Ref:</b>	BIRO118
<b>Field Name:</b>	DS_DIABETOLOGISTS
<b>Data Type:</b>	Integer
<b>Definition:</b>	Diabetes Specialist Consultants within data source geographical area. Data should come from national Specialist Registers and can include "Diabetologists" and "Endocrinologists" but not "Internists" or "General Physicians".
<b>Units:</b>	Diabetes Specialist Consultants
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Doctors
<b>BIRO Ref:</b>	BIRO119
<b>Field Name:</b>	DS_DOCTORS
<b>Data Type:</b>	Integer
<b>Definition:</b>	Number of doctors who regularly take care of diabetic patients in diabetes clinics in primary or secondary care within data source geographical area.
<b>Units:</b>	Doctors
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Specialist Diabetes Nurses
<b>BIRO Ref:</b>	BIRO120
<b>Field Name:</b>	DS_DSN
<b>Data Type:</b>	Integer
<b>Definition:</b>	Specialist diabetes nurses within data source geographical area.
<b>Units:</b>	Specialist Diabetes Nurses
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Physicians Offering Disease Management Programmes (DMP's) for Diabetes
<b>BIRO Ref:</b>	BIRO122
<b>Field Name:</b>	DS_DMP_PHYSICIANS
<b>Data Type:</b>	Integer
<b>Definition:</b>	The number of Physicians offering and recruiting for structured Diabetes Disease Management Programmes
<b>Mandatory:</b>	Yes

## Aggregate Populations

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This section describes the data items used to collect the background population aggregates for the EUBIROD dataset.

### ***EUBIROD Population***

This data relates to the total population and includes total male and female population and death figures by calendar year:

Reference	BIRO Name	Parameter	Data Type	Enumerated Values
BIRO002	DS_ID	Data Source ID	Enumerated	See <a href="#">Appendix 1</a>
BIRO099	SUB_DS_ID	Sub Data Source ID	Enumerated	
BIRO300	YEAR	Year	Date/Year	
BIRO310	AGEBAND	Age band	Enumerated	1=0,14 2=15,24 3=25,34 4=35,44 5=45,54 6=55,64 7=65,74 8=75,84 9=85+
BIRO301	POP_M	Total Male Population	Integer	
BIRO302	POP_F	Total Female Population	Integer	
BIRO303	DEATHS_M	Total Deaths in Male Population	Integer	
BIRO304	DEATHS_F	Total Deaths in Female Population	Integer	

### ***EUBIROD Diabetic Population***

This data relates to the diabetic population and includes total males and females by calendar year

Reference	BIRO Name	Parameter	Data Type	Enumerated Values
BIRO002	DS_ID	Data Source ID	Enumerated	See <a href="#">Appendix 1</a>
BIRO099	SUB_DS_ID	Sub Data Source ID	Enumerated	
BIRO300	YEAR	Year	Date/Year	
BIRO310	AGEBAND	Age band	Enumerated	1=0,14 2=15,24 3=25,34 4=35,44 5=45,54

				6=55,64 7=65,74 8=75,84 9=85+
BIRO003	TYPE_DM	Type of Diabetes	Enumerated	1=Type 1 2=Type 2 3=Other
BIRO305	POP_D_M	Total Diabetic in Male Population	Integer	
BIRO306	POP_D_F	Total Diabetic in Female Population	Integer	

## Geographical Classification

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This section outlines the data items used to mark the geographical location of the partner site.

<b>Parameter:</b>	Level 0 Classification
<b>BIRO Ref:</b>	BIRO200
<b>Field Name:</b>	GC_CONTINENT
<b>Data Type:</b>	String
<b>Definition:</b>	Continent (BIRO Custom Level)
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Level 1 Classification
<b>BIRO Ref:</b>	BIRO201
<b>Field Name:</b>	GC_COUNTRY
<b>Data Type:</b>	String
<b>Definition:</b>	Country (NUTS Level 0)
<b>Mandatory:</b>	Yes

<b>Parameter:</b>	Level 2 Classification
<b>BIRO Ref:</b>	BIRO202
<b>Field Name:</b>	GC_MACRO_REGION
<b>Data Type:</b>	String
<b>Definition:</b>	Sub-National Area (NUTS Level 1)
<b>Mandatory:</b>	No

<b>Parameter:</b>	Level 3 Classification
<b>BIRO Ref:</b>	BIRO203
<b>Field Name:</b>	GC_REGION
<b>Data Type:</b>	String
<b>Definition:</b>	Region (NUTS Level 2)
<b>Mandatory:</b>	No

<b>Parameter:</b>	Level 4 Classification
<b>BIRO Ref:</b>	BIRO204
<b>Field Name:</b>	GC_HEALTH_AUTHORITY
<b>Data Type:</b>	String
<b>Definition:</b>	Local Health Authority (BIRO Custom Level)
<b>Mandatory:</b>	No

<b>Parameter:</b>	Level 5 Classification
<b>BIRO Ref:</b>	BIRO200
<b>Field Name:</b>	GC_PROVINCE
<b>Data Type:</b>	String
<b>Definition:</b>	Province (NUTS-3)
<b>Mandatory:</b>	No

<b>Parameter:</b>	Level 6 Classification
<b>BIRO Ref:</b>	BIRO200
<b>Field Name:</b>	GC_DISTRICT_UNIT
<b>Data Type:</b>	String
<b>Definition:</b>	District Health Unit (BIRO Custom Level)
<b>Mandatory:</b>	No

<b>Parameter:</b>	Level 7 Classification
<b>BIRO Ref:</b>	BIRO200
<b>Field Name:</b>	GC_POST_CODE
<b>Data Type:</b>	String
<b>Definition:</b>	Post Code (BIRO Custom Level)
<b>Mandatory:</b>	No

## Clinical Indicators

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This section of the document outlines the EUBIROD clinical indicators and highlights the contributing data items and the pseudo code calculations required to create the necessary figures.

<b>Reference No:</b>	1
<b>Indicator:</b>	Annual Incidence of Type 1 Diabetes in children between 0 – 14 years of age at diagnosis (clinical) per 100,000 children
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO005: DOB BIRO104: DS_DENOM
<b>Calculation:</b>	Total Patients (PAT_ID) / (Data Source Denominator (DS_DENOM) / 100000) With Type 1 Diabetes (TYPE_DM = 1) Grouped By Year of Birth (in DOB) and Data Source ID (DS_ID)
<b>Output:</b>	Number of Type 1 patients/100000 grouped by year and by data source. Reference to age bandings defined in section 8 of this document.
<b>Source:</b>	EUDIP

<b>Reference No:</b>	4
<b>Indicator:</b>	Prevalence of diabetes mellitus per 1,000
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO104: DS_DENOM
<b>Calculation:</b>	Total Patients (PAT_ID) / (Data Source Denominator (DS_DENOM) / 1000) With Any Type of Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Number of patients with diabetes per 1000 grouped by data source.
<b>Source:</b>	EUDIP



<b>Reference No:</b>	17
<b>Indicator:</b>	Age at diagnosis by 10 year age bands (incidence)
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO005: DOB BIRO006: DT_DIAG BIRO104: DS_DENOM
<b>Calculation:</b>	Total Patients (PAT_ID) / Data Source Denominator (DS_DENOM) With Any Type of Diabetes (TYPE_DM IN (1, 2, 3)) Grouped by 10 Year Age Band (compare DOB and DT_DIAG) and Data Source (DS_ID)
<b>Output:</b>	Number of patients and their age at diagnosis grouped by ten year age bands and data source.
<b>Source:</b>	EUDIP

<b>Reference No:</b>	19
<b>Indicator:</b>	Hospital beds per 100,000 population
<b>Contributing Data Items:</b>	BIRO002: DS_ID BIRO104: DS_DENOM BIRO116: DS_BEDS
<b>Calculation:</b>	Hospital Beds (DS_BEDS) / (Data Source Denominator (DS_DENOM) / 100000) Grouped by DataSource (DS_ID)
<b>Output:</b>	Number of hospital beds per 100000 of regional population grouped by data source.
<b>Source</b>	ECHI

<b>Reference No:</b>	20
<b>Indicator:</b>	Physicians employed per 100,000 population
<b>Contributing Data Items:</b>	BIRO002: DS_ID BIRO104: DS_DENOM BIRO117: DS_PHYSICIANS
<b>Calculation:</b>	Physicians (DS_PHYSICIANS) / (Data Source Denominator (DS_DENOM) / 100000) Grouped by DataSource (DS_ID)
<b>Output:</b>	Number of physicians employed per 100000 of regional population grouped by data source.
<b>Source:</b>	ECHI

<b>Reference No:</b>	21
<b>Indicator:</b>	Number of diabetologists per 100,000
<b>Contributing Data Items:</b>	BIRO002: DS_ID BIRO104: DS_DENOM BIRO118: DS_DIABETOLOGISTS
<b>Calculation:</b>	Diabetologists (DS_Diabetologists) / (Data Source Denominator (DS_DENOM) / 100000) Grouped by DataSource (DS_ID)
<b>Output:</b>	Number of diabetologists employed per 100000 of regional population grouped by data source.
<b>Source:</b>	Joanneum

<b>Reference No:</b>	22
<b>Indicator:</b>	Number of doctors who regularly take care of diabetic patients in diabetes clinics in primary or secondary care per 100,000
<b>Contributing Data Items:</b>	BIRO002: DS_ID BIRO104: DS_DENOM BIRO119: DS_DOCTORS
<b>Calculation:</b>	Doctors (DS_DOCTORS) / (Data Source Denominator (DS_DENOM) / 100000) Grouped by DataSource (DS_ID)
<b>Output:</b>	Number of diabetic doctors per 100000 of regional population grouped by data source.
<b>Source:</b>	BIRO

<b>Reference No:</b>	24
<b>Indicator:</b>	Number of diabetes nurses employed per 100,000
<b>Contributing Data Items:</b>	BIRO002: DS_ID BIRO104: DS_DENOM BIRO120: DS_DSN
<b>Calculation:</b>	Diabetes Specialist Nurses (DS_DSN) / (Data Source Denominator (DS_DENOM) / 100000) Grouped by DataSource (DS_ID)
<b>Output:</b>	Number of diabetes specialist nurses per 100000 of regional population grouped by data source.
<b>Source:</b>	ECHI

<b>Reference No:</b>	25
<b>Indicator:</b>	Number of structured Disease Management Programmes
<b>Contributing Data Items:</b>	BIRO002: DS_ID BIRO104: DS_DENOM BIRO121: DS_PROGS
<b>Calculation:</b>	Disease Management Programmes (DS_PROGS) Grouped by DataSource (DS_ID)
<b>Output:</b>	Number of disease management programmes active grouped by data source.
<b>Source:</b>	Joanneum

<b>Reference No:</b>	27
<b>Indicator:</b>	Percentage with one or more HbA1c tests during the last 12 months
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO016: HBA1C
<b>Calculation:</b>	Total Patients (PAT_ID) with valid HbA1c result (HBA1C) in last 12 months (EPI_DATE) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of diabetic patients with valid HbA1c result in last 12 months grouped by data source.
<b>Source:</b>	OECD

<b>Reference No:</b>	28
<b>Indicator:</b>	Percentage of patients with one or more Total cholesterol/HDL tests during the last 12 months
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO019: CHOL BIRO020: HDL
<b>Calculation:</b>	Total Patients (PAT_ID) with valid Total Cholesterol (CHOL) or HDL (HDL) result within the last 12 months (EPI_DATE) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of diabetic patients with valid Cholesterol or HDL result in last 12 months grouped by data source.
<b>Sources:</b>	EUDIP OECD

<b>Reference No:</b>	29
<b>Indicator:</b>	Percentage of patients with at least one test for microalbuminuria during the measurement year or who had evidence of medical attention for existing nephropathy
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO018: MA_TEST BIRO028: ESRF BIRO029: DIALYSIS BIRO030: TRANSPLANT
<b>Calculation:</b>	Total Patients (PAT_ID) with MA Test (MA_TEST = 1 or 2) within the last 12 months (EPI_DATE) and (having End Stage Renal Failure (ESRF) or having Renal Dialysis (DIALYSIS) or had Renal Transplant (TRANSPLANT)) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of diabetic patients with test for microalbuminuria in last 12 months who have evidence of existing nephropathy grouped by data source.
<b>Source:</b>	OECD

<b>Reference No:</b>	30
<b>Indicator:</b>	Percentage of diabetes patients who received a dilated eye examination or evaluation of retinal photography by a trained caregiver within the last 12 months
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO022: RETINAL_EXAM
<b>Calculation:</b>	Total Patients (PAT_ID) with eye examination (RETINAL_EXAM) result within the last 12 months (EPI_DATE) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients with a retinal examination within the last 12 months grouped by data source.
<b>Source:</b>	OECD, modified by BIRO

<b>Reference No:</b>	31
<b>Indicator:</b>	Percentage of diabetes patients receiving at least one foot examination within the last 12 months
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO025: FOOT_EXAM
<b>Calculation:</b>	Total Patients (PAT_ID) with foot examination (FOOT_EXAM) result within the last 12 months (EPI_DATE) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients with a foot examination within the last 12 months grouped by data source.
<b>Source:</b>	OECD

<b>Reference No:</b>	32
<b>Indicator:</b>	Percentage of diabetes patients whose smoking status was ascertained and documented within the last 12 months
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO008: SMOK_STAT
<b>Calculation:</b>	Total Patients (PAT_ID) with foot examination (SMOK_STAT = 1, 2 or 3) result within the last 12 months (EPI_DATE) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients with a smoking status record within the last 12 months grouped by data source.
<b>Source:</b>	OECD

<b>Reference No:</b>	34
<b>Indicator:</b>	Percent with serum creatinine tested in last 12 months
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO017: CREAT
<b>Calculation:</b>	Total Patients (PAT_ID) with creatinine (CREAT) result within the last 12 months (EPI_DATE) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients with a creatinine record within the last 12 months grouped by data source.
<b>Source:</b>	EUDIP

<b>Reference No:</b>	35
<b>Indicator:</b>	Percentage of patients with diabetes and one or more blood pressure measurements within the last 12 months
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO014: SBP BIRO015: DBP
<b>Calculation:</b>	Total Patients (PAT_ID) with blood pressure (SBP and/or DBP) result within the last 12 months (EPI_DATE) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients with a blood pressure record within the last 12 months grouped by data source.
<b>Source:</b>	EUDIP

<b>Reference No:</b>	36
<b>Indicator:</b>	Percentage of patients with hypertension who receive hypertensive medication
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO035: HYPERTENSION BIRO038: HYPERT_MED
<b>Calculation:</b>	Total Patients (PAT_ID) with hypertension (HYPERTENSION) who receive hypertension medication (HYPERT_MED) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients with hypertension who receive hypertension medication grouped by data source.
<b>Source:</b>	Joanneum

<b>Reference No:</b>	38
<b>Indicator:</b>	Percentage of patients with diabetes specific education at least once before
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO045: EDUCATION
<b>Calculation:</b>	Total Patients (PAT_ID) who have received diabetes specific education (EDUCATION) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients who have received diabetes education grouped by data source.
<b>Source:</b>	Joanneum

<b>Reference No:</b>	40
<b>Indicator:</b>	Type of oral therapy (distribution of agents) in patients with diabetes type 2
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO040: ORAL_THERAPY
<b>Calculation:</b>	Total Patients (PAT_ID) / Total Patients (PAT_ID) With Type 2 Diabetes (TYPE_DM = 2) Grouped by Type of Oral Therapy (ORAL_THERAPY) and Data Source (DS_ID)
<b>Output:</b>	Percentage of patients with Type 2 diabetes grouped by type of oral therapy and data source
<b>Source:</b>	Joanneum

<b>Reference No:</b>	41
<b>Indicator:</b>	Portion of patients treated with insulin among patients with diabetes
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO039: DRUG_THERAPY
<b>Calculation:</b>	Total Patients (PAT_ID) treated with insulin (DRUG_THERAPY = 1) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients treated with insulin grouped by data source
<b>Source:</b>	Joanneum



<b>Reference No:</b>	42
<b>Indicator:</b>	Portion of patients treated with insulin in combination with OADs among patients with diabetes
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO039: DRUG_THERAPY
<b>Calculation:</b>	Total Patients (PAT_ID) treated with insulin and tablets (DRUG_THERAPY = 3) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients treated with insulin and tablets grouped by data source
<b>Source:</b>	Joanneum

<b>Reference No:</b>	44
<b>Indicator:</b>	Percentage of insulin treated patients with pump therapy
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO039: DRUG_THERAPY BIRO041: PUMP_THERAPY
<b>Calculation:</b>	Total Patients (PAT_ID) treated with insulin (DRUG_THERAPY = 1 or 3) who receive Pump Therapy (PUMP_THERAPY = 1) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients treated with insulin who receive pump therapy grouped by data source
<b>Source:</b>	BIRO

<b>Reference No:</b>	45
<b>Indicator:</b>	Average number of insulin injections per day in insulin treated patients
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO039: DRUG_THERAPY BIRO043: INJECTIONS
<b>Calculation:</b>	Average Injections (INJECTIONS) with Patients (PAT_ID) treated with insulin (DRUG_THERAPY = 1 or 3)  / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Average number of injections amongst insulin treated patients, grouped by data source
<b>Source:</b>	BIRO

<b>Reference No:</b>	49
<b>Indicator:</b>	Portion of diabetes patients with anti hypertensive treatment
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO038: HYPERT_MED
<b>Calculation:</b>	Total Patients (PAT_ID) treated with hypertensive medication (HYPERT_MED)  / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients treated with hypertensive medication grouped by data source
<b>Source:</b>	Joanneum

<b>Reference No:</b>	51
<b>Indicator:</b>	Percent of patients with diabetes performing self-monitoring of blood glucose/ urine testing
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO044: SELF_MON
<b>Calculation:</b>	Total Patients (PAT_ID) performing self monitoring (SELF_MON = 1, 2 or 3) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients performing self monitoring grouped by data source
<b>Source:</b>	Joanneum

<b>Reference No:</b>	54
<b>Indicator:</b>	Percentage of patients with most recent HbA1c level >9.0% (poor control)
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO016: HBA1C
<b>Calculation:</b>	Total Patients (PAT_ID) with latest HbA1c result >9.0 (HBA1C and EPI_DATE) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of diabetic patients with latest HbA1c result greater than 9.0% grouped by data source.
<b>Source:</b>	OECD

<b>Reference No:</b>	55
<b>Indicator:</b>	Percentage of patients with most recent HbA1c level >7.5%
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO016: HBA1C
<b>Calculation:</b>	Total Patients (PAT_ID) with latest HbA1c result >7.5 (HBA1C and EPI_DATE) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of diabetic patients with latest HbA1c result greater than 7.5% grouped by data source.
<b>Source:</b>	OECD

<b>Reference No:</b>	57
<b>Indicator:</b>	Percentage of patients with Total-Chol / HDL-Chol < 4.5
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO019: CHOL BIRO020: HDL
<b>Calculation:</b>	Total Patients (PAT_ID) with latest Cholesterol (CHOL and EPI_DATE) or HDL (HDL and EPI_DATE) result < 4.5 / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of diabetic patients with latest cholesterol or HDL result less than 4.5% grouped by data source.
<b>Source:</b>	Dundee

<b>Reference No:</b>	58
<b>Indicator:</b>	Percentage of patients with most recent blood pressure <140/90 mmHg
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO014: SBP BIRO015: DBP
<b>Calculation:</b>	Total Patients (PAT_ID) with latest Blood Pressure (SBP, DBP and EPI_DATE) < 140/90 / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of diabetic patients with latest Blood Pressure result less than 140/90 grouped by data source.
<b>Source:</b>	OECD

<b>Reference No:</b>	60
<b>Indicator:</b>	Percentage of patients with BMI >= 30
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO013: BMI
<b>Calculation:</b>	Total Patients (PAT_ID) with latest Body Mass Index (BMI and EPI_DATE) >= 30 / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of diabetic patients with latest Boddy Mass index result greater than or equal to 30 grouped by data source.
<b>Source:</b>	EUDIP

<b>Reference No:</b>	61
<b>Indicator:</b>	Percentage of patients with waist circumference above IDF cut-offs
<b>Calculation:</b>	Waist circumference has not been included in the BIRO Common Dataset as it does not currently appear in either the Scottish or DiabCare datasets – to be reviewed.

<b>Reference No:</b>	62
<b>Indicator:</b>	Percentage of persons with diabetes mellitus with a fundus inspection in the last 12m, who have proliferative retinopathy and/or maculopathy
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO022: RETINAL_EXAM BIRO023: RETINA BIRO024: MACULA
<b>Calculation:</b>	Total Patients (PAT_ID) with proliferative retinopathy (RETINA = 2) and/or maculopathy (MACULA = 1) who have had an eye examination (RETINAL_EXAM) result within the last 12 months (EPI_DATE) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients with referable retinopathy and/or referable maculopathy who have had a retinal examination within the last 12 months, grouped by data source.
<b>Source:</b>	EUDIP

<b>Reference No:</b>	64
<b>Indicator:</b>	Percentage of patients with laser treatment ever
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO034: LASER
<b>Calculation:</b>	Total Patients (PAT_ID) with laser treatment (LASER = 1) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients with laser treatment ever, grouped by data source.
<b>Source:</b>	Joanneum

<b>Reference No:</b>	65
<b>Indicator:</b>	Percentage with microalbuminuria in last 12 months (among those who have been tested)
<b>Calculation:</b>	Total Patients (PAT_ID) with microalbuminuria (MA_TEST = 2) within the last 12 months (EPI_DATE) / Total Patients (PAT_ID) tested for microalbuminuria (MA_TEST = 1 or 2) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients with abnormal microalbuminuria test amongst those tested within the last 12 months, grouped by data source.
<b>Source:</b>	BIRO

<b>Reference No:</b>	66
<b>Indicator:</b>	Rate of current smokers amongst diabetes patients
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO008: SMOK_STAT
<b>Calculation:</b>	Total Patients (PAT_ID) whose latest smoking assessment (EPI_DATE) indicates that they smoke (SMOK_STAT = 1) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients who currently smoke, grouped by data source.
<b>Source:</b>	Joanneum

<b>Reference No:</b>	67
<b>Indicator:</b>	Rate of patients with current alcohol abuse/dependence
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO010: ALCOHOL
<b>Calculation:</b>	Total Patients (PAT_ID) whose latest alcohol intake assessment (EPI_DATE) indicates that they currently abuse alcohol (ALCOHOL > 30 units / week) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients who currently consume more than 30 units of alcohol per week, grouped by data source.
<b>Source:</b>	Joanneum

<b>Reference No:</b>	69
<b>Indicator:</b>	Former or current foot ulceration
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO032: ULCER
<b>Calculation:</b>	Total Patients (PAT_ID) with history of foot ulcer (ULCER = 1) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of patients with foot ulcer ever, grouped by data source.
<b>Source:</b>	Joanneum

<b>Reference No:</b>	71
<b>Indicator:</b>	Annual incidence of blindness in patients with diabetes (among those visited during the last 12 months)
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO036: BLIND
<b>Calculation:</b>	Total Patients (PAT_ID) with first recording of blindness (BLIND = 1 and EPI_DATE) in last 12 months / Total Patients (PAT_ID) who had an assessment within last 12 months (EPI_DATE) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by Data Source (DS_ID)
<b>Output:</b>	Percentage of diabetic patients who were diagnosed as being blind among those who visited within last 12 months, grouped by data source.
<b>Source:</b>	EUDIP, modified by BIRO



<b>Reference No:</b>	73
<b>Indicator:</b>	Annual incidence of dialysis and/or transplantation (renal replacement therapy) in patients with diabetes
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO029: DIALYSIS BIRO030: TRANSPLANT
<b>Calculation:</b>	Total Patients (PAT_ID) with renal dialysis (DIALYSIS = 1) or transplant (TRANSPLANT = 1) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by year of incidence (in EPI_DATE) and Data Source (DS_ID)
<b>Output:</b>	Percentage of diabetic patients who had renal dialysis or transplant, grouped by incidence year and data source.
<b>Source:</b>	Joanneum

<b>Reference No:</b>	74
<b>Indicator:</b>	ESRD in Persons with Diabetes
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO028: ESRF
<b>Calculation:</b>	Total Patients (PAT_ID) with End Stage Renal Failure (ESRF = 1) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by year of incidence (in EPI_DATE) and Data Source (DS_ID)
<b>Output:</b>	Percentage of diabetic patients who had end stage renal failure, grouped by incidence year and data source.
<b>Source:</b>	OECD

<b>Reference No:</b>	75
<b>Indicator:</b>	Annual incidence of amputations above the ankle
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO037: AMPUTATION
<b>Calculation:</b>	Total Patients (PAT_ID) with Amputation (AMPUTATION = 1) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by year of incidence (in EPI_DATE) and Data Source (DS_ID)
<b>Output:</b>	Percentage of diabetic patients who had an amputation, grouped by incidence year and data source.
<b>Source:</b>	OECD EUDIP

<b>Reference No:</b>	76
<b>Indicator:</b>	Annual incidence of stroke in patients with diabetes
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO031: STROKE
<b>Calculation:</b>	Total Patients (PAT_ID) with Stroke (STROKE = 1) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by year of incidence (in EPI_DATE) and Data Source (DS_ID)
<b>Output:</b>	Percentage of diabetic patients who had a stroke, grouped by incidence year and data source.
<b>Source:</b>	Joanneum

<b>Reference No:</b>	78
<b>Indicator:</b>	Annual Incidence of myocardial infarction in patients with diabetes
<b>Contributing Data Items:</b>	BIRO001: PAT_ID BIRO002: DS_ID BIRO003: TYPE_DM BIRO007: EPI_DATE BIRO033: MI
<b>Calculation:</b>	Total Patients (PAT_ID) with myocardial infarction (MI = 1) / Total Patients (PAT_ID) With Diabetes (TYPE_DM = 1, 2 or 3) Grouped by year of incidence (in EPI_DATE) and Data Source (DS_ID)
<b>Output:</b>	Percentage of diabetic patients who had a myocardial, grouped by incidence year and data source.
<b>Source:</b>	Joanneum

<b>Reference No:</b>	80
<b>Indicator:</b>	Annual death rate per 100,000 populations in the general population from all causes, adjusted for standard European population
<b>Calculation:</b>	Death not recorded in DiabCare – to be reviewed

## Appendix 1: Short Clinical Dataset

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### Patient Profile

Reference	Field Name	Parameter	Data Type	Enumerated / Boundary Values
BIRO001	PAT_ID	Patient ID	String(12)	
BIRO002	DS_ID	Data Source ID	String(10)	Regional NUTS Code – see: <a href="http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP_PUB_WELC">http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP_PUB_WELC</a>
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
BIRO099	SUB_DS_ID	Sub data source identifier (Related to DS_ID)	String(10)	

### Episode Identification

BIRO007	EPI_DATE	Episode Date	Date/Time	Range: ≥DOB - <Current Date
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### Lifestyle Factors

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 – 5000
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
BIRO044	SELF_MON	Self Monitoring	Enumerated	1 = Urine 2 = Blood Glucose 3 = Both
BIRO045	EDUCATION	Diabetes Specific Education	Enumerated	1 = Yes 0 = No
BIRO047	ALC_STAT	Alcohol Status	Enumerated	1 = Current Drinker 2 = Non-Drinker 3 = Ex-Drinker
BIRO048	DMP_ENROL	Patient Enrolment in DMP for Diabetes	Enumerated	1 = Yes 0 = No

### Laboratory Tests

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
BIRO046	LDL	LDL	Real	Range: 0.01 – 15

### Screening Events

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 0 = Absent

BIRO027	FTSENS	Foot Sensation	Enumerated	1 = Normal 0 = Abnormal
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### Clinical Outcomes

BIRO028	ESRF	End Stage Renal Therapy	Enumerated	1 = Yes 0 = No
BIRO029	DIALYSIS	Renal Dialysis	Enumerated	1 = Yes 0 = No
BIRO030	TRANSPLANT	Renal Transplant	Enumerated	1 = Yes 0 = No
BIRO031	STROKE	Stroke	Enumerated	1 = Yes 0 = No
BIRO032	ULCER	Active Foot Ulcer	Enumerated	1 = Yes 0 = No
BIRO033	MI	Myocardial Infarction	Enumerated	1 = Yes 0 = No
BIRO034	LASER	Laser	Enumerated	1 = Yes 0 = No
BIRO035	HYPERTENSION	Hypertension	Enumerated	1 = Yes 0 = No
BIRO036	BLIND	Blindness	Enumerated	1 = Yes 0 = No
BIRO037	AMPUT	Amputation	Enumerated	1 = Yes 0 = No

### Medication

BIRO038	HYPERT_MED	Antihypertensive Medication	Enumerated	1 = Yes 0 = No
BIRO039	DRUG_THERAPY	Hypoglycaemic Drug Therapy	Enumerated	1 = Insulin Only 2 = Tablet Only 3 = Insulin and Tablets 4 = None (Diet Only)
BIRO041	PUMP_THERAPY	Pump Therapy	Enumerated	1 = Yes 0 = No

BIRO042	INHALED_THERAPY	Nasal Therapy	Enumerated	1 = Yes 0 = No
BIRO043	INJECTIONS	Average Injections	Real	Range: 0 – 20
BIRO053	LIPID_THERAPY	Lipid Lowering Therapy	Enumerated	1 = Yes 0 = No
BIRO054	ANTIPLATELET_THERAPY	Anti-platelet Therapy	Enumerated	1 = Yes 0 = No
BIRO055	SULPHONYLUREAS	Sulphonylurea Therapy	Enumerated	1 = Yes 0 = No
BIRO056	BIGUANIDES	Biguanide Therapy	Enumerated	1 = Yes 0 = No
BIRO057	GLUCOSIDASE_INHIBITORS	Glucoseidase Inhibitor Therapy	Enumerated	1 = Yes 0 = No
BIRO058	GLITAZONES	Glitazone Therapy	Enumerated	1 = Yes 0 = No
BIRO059	GLINIDES	Glinide Therapy	Enumerated	1 = Yes 0 = No

### Patient Activity Status

BIRO049	AD_START_DATE	Data of commencement of period of patient activity	Date/Time	Range: ≥DOB - <Current Date
BIRO050	AD_START_REASON	Reason for the commencement of activity period	Enumerated	1 = Birth 2 = Diabetes Diagnosis 3 = Transferred In
BIRO051	AD_END_DATE	Data of completion of period of activity	Date/Time	Range: ≥DOB - <Current Date
BIRO052	AD_END_REASON	Reason for the completion of activity period	Enumerated	1 = Death 2 = Transferred Out 3 = Lost to Follow-up

**Redundant Data Items**

BIRO040	ORAL_THERAPY	Oral Drug Therapy	Enumerated	1 = Sulphonylureas 2 = Biguanides 3 = Glucosidase Inhibitors 4 = Glitazones 5 = Glinides
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BIRO040: ORAL\_THERAPY has been retired as there are now distinct data items for treatment using Sulphonylureas, Biguanides, Glucosidase Inhibitors, Glitazones and Glinides.



## Appendix 2: Short Clinical Site Dataset

Reference	Field Name	Parameter	Data Type	Enumerated Codes
BIRO002	DS_ID	Data Source ID	String(10)	Regional NUTS Code – see: <a href="http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP_PUB_WELC">http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP_PUB_WELC</a>
BIRO099	SUB_DS_ID	Sub data source identifier (Related to DS_ID)	String(10)	
BIRO101	DS_COUNTRY	Country of Origin	String(25)	
BIRO102	DS_TYPE	Data Source Type	Enumerated	1 = GP 2 = Hospital Clinic (Internal Medicine) 3 = Hospital Clinic (Diabetes) 4 = Regional Shared-data Register 5 = Regional Primary Care Project 6 = Disease Management Programme 7 = Hospital Discharge Information 8 = Insurance Programme 9 = Retinal Screening Programme 10 = Diabetes Specialist Nurse Clinic 11 = National Data – Complete 12 = National Data – Sample 13 = Regional Data – Sample
BIRO103	DS_NAME	Data Source Name	String(25)	
BIRO104	DS_DENOM	Data Source Denominator	Integer	
BIRO105	DS_AREA	Geographical Area	Integer	
BIRO106	DS_WEBSITE	Website Address	String(50)	
BIRO107	DS_ADDRESS_1	Mailing Address Field 1	String(25)	
BIRO108	DS_ADDRESS_2	Mailing Address Field 2	String(25)	
BIRO109	DS_ADDRESS_3	Mailing Address Field 3	String(25)	
BIRO110	DS_ADDRESS_4	Mailing Address Field 4	String(25)	
BIRO111	DS_POST_CODE	Post Code of Data Source	String(25)	
BIRO112	DS_C_CONTACT	Clinical Contact	String(25)	
BIRO113	DS_C_EMAIL	Clinical Contact Email Address	String(50)	
BIRO114	DS_T_CONTACT	Technical Contact	String(25)	

BIRO115	DS_T_EMAIL	Technical Contact Email Address	String(50)	
BIRO116	DS_BEDS	Hospital Beds	Integer	
BIRO117	DS_PHYSICIANS	Physicians	Integer	
BIRO118	DS_DIABETOLOGISTS	Diabetes Specialist Consultants	Integer	
BIRO119	DS_DOCTORS	Doctors	Integer	
BIRO120	DS_DSN	Specialist Diabetes Nurses	Integer	
BIRO122	DS_DMP_PHYSICIANS	Physicians Offering DMP's for Diabetes	Integer	