



B.I.R.O.

Best Information through Regional Outcomes

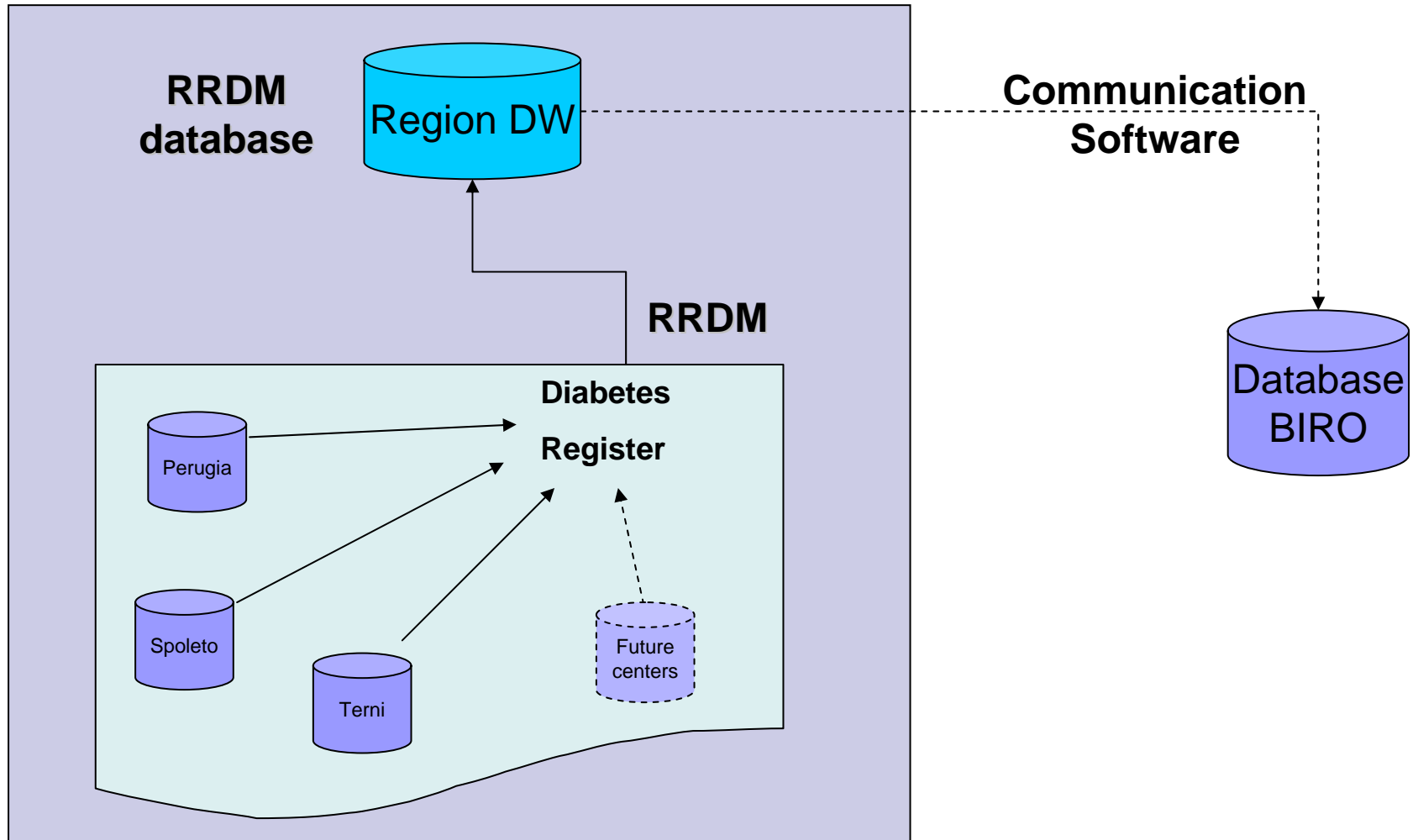
A European Public Health Project, DG-SANCO, 2005-2008

Building B.I.R.O. database

Application of B.I.R.O.
concepts on Umbria data

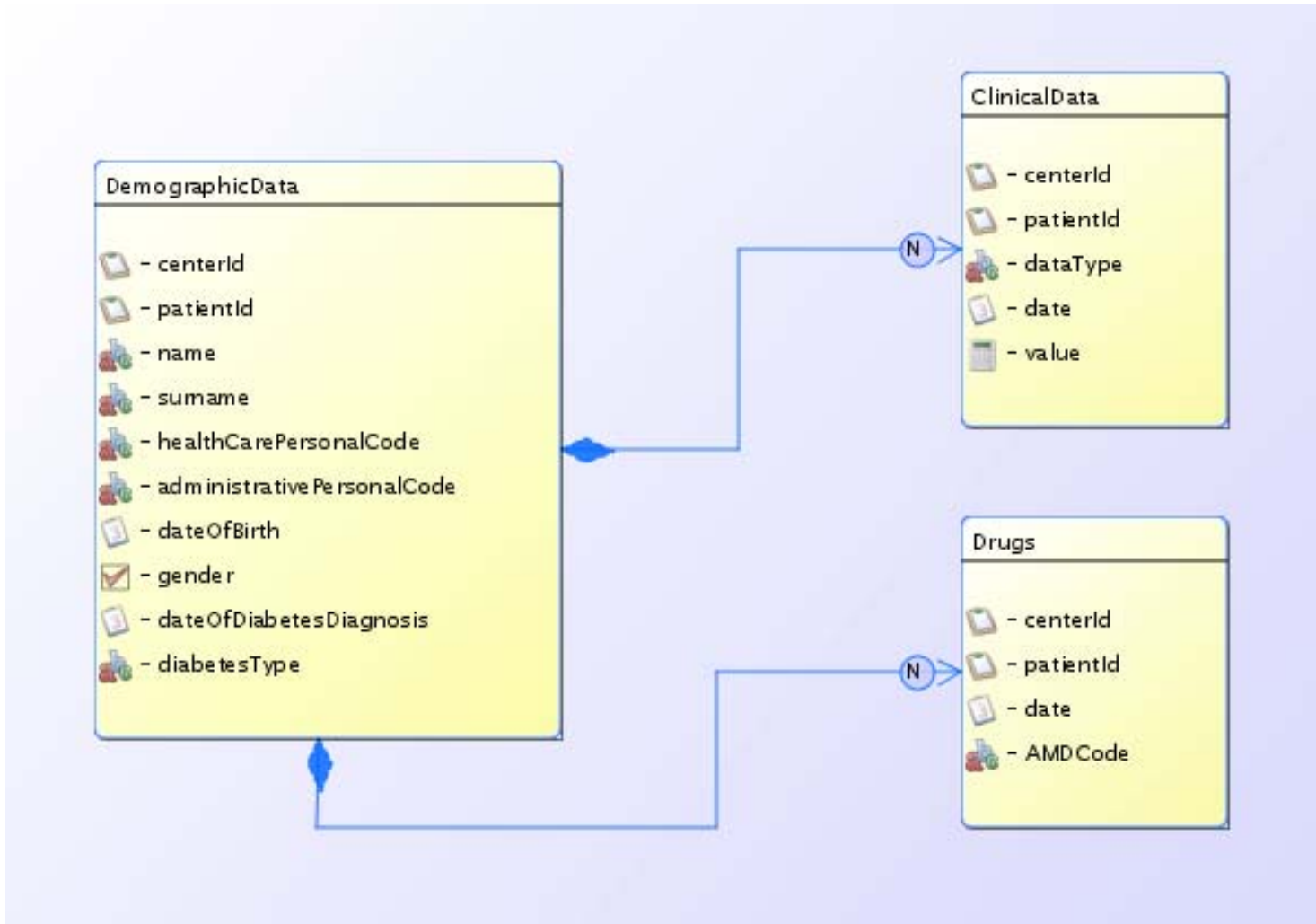


The Umbria architecture





The RRDM Database architecture





Database source

```
CREATE TABLE DemographicData (  
  centerId int4 NOT NULL,  
  patientId int4 NOT NULL,  
  name varchar,  
  surname varchar,  
  healthCarePersonalCode varchar,  
  administrativePersonalCode varchar,  
  dateOfBirth date,  
  gender char(1),  
  dateOfDiabetesDiagnosis date,  
  diabetesType varchar );
```

```
CREATE TABLE ClinicalData (  
  centerId int4 NOT NULL,  
  patientId int4 NOT NULL,  
  dataType varchar,  
  "date" date,  
  value float8 );
```

```
CREATE TABLE Drugs (  
  centerId int4 NOT NULL,  
  patientId int4 NOT NULL,  
  "date" date,  
  AMDCode char(8) );
```



Exported and merged data

idPaziente	dataDiNascita	seesso	DiagnosiDiab	Diab	data	Altezza	BMI	Peso	Colesterolo	Colesterolo_HDL	Colesterolo_LDL	Creatinina	Emoglob.Glicata	HBA1C	Glicemia_a_digiuno	Trigliceridi_post_12h_dig.	Insulina	Metformina	Ipo	glicemizzanti	
884	01/03/1918	M	01/01/1971	2	14/10/2002	170.00.00						0,067361111	6.10				True	False	False	False	
885	24/01/1938	M	01/01/1994	2	01/10/1999			89.00.00	229.00.00									True	True	False	False
885	24/01/1938	M	01/01/1994	2	01/12/1999	162.00.00		76.00.00	246.00.00	40.00.00			8.20		164.00.00	137.00.00	False	True	False	False	
885	24/01/1938	M	01/01/1994	2	06/06/2001			84.00.00	874.00.00				0,673611111		479.00.00	8720.00.00	False	True	False	False	
885	24/01/1938	M	01/01/1994	2	28/06/2001	162.00.00	32.00.00	84.00.00	154.00.00	32.00.00		1.00			166.00.00	285.00.00	False	True	False	False	
885	24/01/1938	M	01/01/1994	2	19/08/2003	162.00.00			210.00.00	33.00.00	155.00.00	1.02	8.10		210.00.00	108.00.00	False	True	False	False	
885	24/01/1938	M	01/01/1994	2	10/10/2003	162.00.00			152.00.00	33.00.00	103.00.00	1.02	7.20			79.00.00	False	True	False	False	
885	24/01/1938	M	01/01/1994	2	02/01/2004	162.00.00			117.00.00	27.00.00	66.00.00	1.02	0,305555556		152.00.00	119.00.00	False	True	False	False	
885	24/01/1938	M	01/01/1994	2	11/11/2005	162.00.00			116.00.00	40.00.00	60.00.00	1.29	7.30		140.00.00	81.00.00	False	True	False	False	
886	08/11/1912	M	01/01/1981	2	01/01/1997	172.00.00	22.10	65.50.00									False	False	False	False	
887	13/01/1924	F	01/01/1900	2	01/01/1997	153.00.00	35.70	83.50.00									False	False	False	False	
888	21/10/1946	M	01/01/1996	2	01/01/1997	166.00.00		75.00.00									False	True	True	True	
888	21/10/1946	M	01/01/1996	2	08/10/2000	166.00.00	27.20.00	75.00.00	210.00.00	47.00.00		0,0625	7.50		185.00.00	186.00.00	False	True	True	True	
888	21/10/1946	M	01/01/1996	2	11/04/2002	166.00.00	0.00	0.00	212.00.00	40.00.00	118.00.00	0,0625			169.00.00	279.00.00	False	True	True	True	
888	21/10/1946	M	01/01/1996	2	09/09/2003	166.00.00			207.00.00	56.00.00	120.00.00	0,058333333	0,298611111		139.00.00	153.00.00	False	True	True	True	
889	16/09/1937	F	01/01/1997	2	01/01/1997	165.00.00	31.80	86.50.00	208.00.00	55.00.00			0,472222222		246.00.00	191.00.00	False	False	True	True	
889	16/09/1937	F	01/01/1997	2	30/03/2004	165.00.00	32.30.00	88.00.00	133.00.00	240.00.00		0.55	7.20		154.00.00	51.00.00	False	False	True	True	
890	11/08/1930	F	01/01/1989	2	01/01/1997	156.00.00	31.60	77.00.00	226.00.00	49.00.00					123.00.00	236.00.00	True	True	False	False	
890	11/08/1930	F	01/01/1989	2	21/01/2003	156.00.00	28.40.00	69.00.00	295.00.00	44.00.00	200.00.00	1.00	0,298611111				True	True	False	False	
890	11/08/1930	F	01/01/1989	2	01/02/2004	156.00.00							0,354166667		156.00.00		True	True	True	False	
890	11/08/1930	F	01/01/1989	2	01/04/2004	156.00.00			221.00.00	44.00.00	141.00.00					179.00.00	True	True	False	False	
890	11/08/1930	F	01/01/1989	2	06/06/2004	156.00.00			200.00.00	45.00.00	127.00.00	1.33	0,347222222		142.00.00	142.00.00	True	True	False	False	
890	11/08/1930	F	01/01/1989	2	01/01/2005	156.00.00			189.00.00	48.00.00	106.00.00	1.13			138.00.00	176.00.00	True	True	False	False	
890	11/08/1930	F	01/01/1989	2	01/01/2006	156.00.00			235.00.00	51.00.00	144.00.00	1.03	8.40		164.00.00	242.00.00	True	True	False	False	
891	17/11/1934	F	01/01/1993	2	01/01/1997	157.00.00		71.00.00									False	True	False	False	
896	16/02/1918	F	01/01/1970	2	14/05/2002	157.00.00			205.00.00	57.00.00	117.00.00	0,0625	6.30			175.00.00	False	True	False	False	
896	16/02/1918	F	01/01/1970	2	26/03/2003	157.00.00			199.00.00	64.00.00	115.00.00					101.00.00	False	True	False	False	
896	16/02/1918	F	01/01/1970	2	06/10/2003	157.00.00						1.00			151.00.00		False	True	False	False	
896	16/02/1918	F	01/01/1970	2	12/12/2003	157.00.00			224.00.00	62.00.00	139.00.00	0,055555556	0,3125		111.00.00	115.00.00	False	True	False	False	
896	16/02/1918	F	01/01/1970	2	05/05/2005	157.00.00			221.00.00	70.00.00	124.00.00		7.50		155.00.00	137.00.00	False	True	False	False	
897	17/01/1944	M	01/01/1995	2	01/01/1997	178.00.00	27.80	88.00.00							146.00.00		False	True	False	False	
897	17/01/1944	M	01/01/1995	2	23/03/2002	178.00.00	23.40	74.00.00	150.00.00	28.00.00	102.00.00	1.10	5.30			103.00.00	False	True	False	False	
897	17/01/1944	M	01/01/1995	2	24/06/2003	178.00.00			151.00.00				5.10		123.00.00	198.00.00	False	True	False	False	
897	17/01/1944	M	01/01/1995	2	10/05/2004	178.00.00			150.00.00	29.00.00	98.00.00	0,056944444	0,270833333		142.00.00	114.00.00	False	True	False	False	
897	17/01/1944	M	01/01/1995	2	08/08/2005	178.00.00			177.00.00	36.00.00	100.00.00		6.10		150.00.00	365.00.00	False	True	False	False	
897	17/01/1944	M	01/01/1995	2	02/02/2006	178.00.00			168.00.00	33.00.00						274.00.00	False	True	False	False	
897	17/01/1944	M	01/01/1995	2	04/04/2006	178.00.00							5.30				False	True	False	False	
898	24/12/1948	M	01/01/1993	2	01/01/1997	180.00.00	27.80	90.00.00	141.00.00	30.00.00		0,066666667	0,229166667		141.00.00	244.00.00	False	True	True	True	
898	24/12/1948	M	01/01/1993	2	25/10/2002	180.00.00	27.50.00	89.00.00	160.00.00	43.00.00	94.00.00	1.10	0,270833333			113.00.00	False	True	True	True	
898	24/12/1948	M	01/01/1993	2	02/02/2004	180.00.00			182.00.00	38.00.00	86.00.00	0,064583333	7.00		224.00.00	289.00.00	False	True	True	True	
899	09/01/1938	M	01/01/1980	2	01/01/1997	176.00.00	27.00.00	83.50.00						0,375			False	False	False	False	
900	05/04/1927	M	01/01/1984	2	01/01/1997	164.00.00	19.00	51.00.00	151.00.00	46.00.00		0,048611111	8.40		172.00.00	98.00.00	False	False	False	False	