

APPENDIX 1

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APPENDIX 1 User's Guide to CheckRT: Software for Quality Control

This section describes the main features of *CheckRT* and their use starting from the main window of the application, which is shown in the following figure:



Importing the case file

The format required for the import is Microsoft Access (version 97 or higher). The necessary data, which must be included in a single table, are compatible with the protocol of the AIRTUM Database.

- case identifier;
- sex: in M/F or 1/2 format;
- date of birth or age at diagnosis in years;
- date of diagnosis;
- ICD-O-3 topography in Cxx.x or Cxxx format;
- ICD-O-3 morphology in xxxx/3 or xxxx3 format;
- ENCR code for basis of diagnosis: a value between 0 and 9;
- date or months of follow-up;
- life status: in the format: 1) alive, 2) deceased, 3) lost to follow-up.

After clicking the

button, you will be prompted to select the file containing the data to import:

Selezionare il f	'ile dei casi da i	mportare				?×
Cerca in:	🗀 Dati Registro		•	♦ E I I I		
Documenti recenti Desktop Documenti	AIRTum.mdb					
Risorse del computer						
	Nome file:	AIRTum.mdb	_		•	Apri
Risorse di rete	Tipo file:	File dei casi (*.mdb)			•	Annulla
		🦳 Apri in sola lettura				

Once the file is open, the importing cases window will be displayed:

🕫 Importazione file dei casi	
CORT INCIDENZA MORTALITÀ POPOLAZIONE	Selezionare la tabella dei casi da utilizzare. Selezionare "avanti" per continuare. Selezionare "esci" per interrompere.
	< <indietro avanti="">> Elabora Esci</indietro>

Please select the table containing the cases and click "Next":



Bind each required variable to the corresponding field in the table. Click "Process" to start the import.

Importing mortality data

The format required for the import is Microsoft Access (version 97 or higher). The necessary data, which must be included in a single table, are compatible with the protocol of the AIRTUM Database.

- number of cases (if the data is aggregated);
- sex: in M/F or 1/2 format;
- ◆ age in years or in 5-year class format (1=0-4, 2=5-9, ... 18=85+);
- year or date of death;
- ICD-9 cause of death in four-digit (xxx.x or xxxx) or three-digit (xxx) format.

After you click the button you will be prompted to select the file containing the mortality data to import:

Selezionare il file dei deceduti da importare						
Cerca in:	🗀 Dati Registro	.	·	+ E 💣		
Documenti recenti Desktop Documenti	AIRTum.mdb					
Risorse del computer						
	Nome file:	AIRTum.mdb			•	Apri
Risorse di rete	Tipo file:	File dei casi (*.mdb)			•	Annulla

Once the file is open, the importing mortality data window will be displayed:

Importazione file dei deceduti	$\overline{\mathbf{X}}$
cort incidenza MORTALTA POPOLAZIONE	Selezionare la tabella dei casi da utilizzare. Selezionare "avanti" per continuare. Selezionare "esci" per interrompere.
	< <iri>indietro Avanti >> Elabora Esci</iri>

Please select the table containing the mortality data and click "Next":

-004	Imp	portaz	ione file de	ei deceduti				X
	~	Num	ero di casi	CASI		•	Anno / Data di decesso	
			Sesso	SESSO		-	Causa ICD 9	CASI
		Eta	à / Fascia	CLETA		•	Aggiungi sintassi SQL	CAUSE CLETA IDRT
ſ		IDRT	Anno	Cause	cleta	Casi	sesso	SESSO
11	17	75	2001	1570 - 1579	14	2	2	-
	7	75	2001	1570 - 1579	13	1	2	
	7	75	2000	1570 - 1579	18	2	2	
	7	75	2000	1570 - 1579	17	1	2	
	7	75	2000	1570 - 1579	13	1	2	
	7	75	2000	1570 - 1579	16	3	2	
1 1	7	75	2000	1570 - 1579	15	4	2	
	7	75	2001	1570 - 1579	12	1	2	
	7	75	2000	1570 - 1579	14	2	2	
I L	7	75	2001	1580 - 1589	10	1	1	*
	vi T v	sualiz verifica	ta prime 10 I anche la c	0 righe <u>aggiorna</u> odifica ICD 9 (importazio] ne più ler	nta)		
							< Indietro	wanti >> Elabora Esci

Bind each required variable to the appropriate field in the table. Click "Process" to start the import.

Importing the population

The format required for the import is Microsoft Access (version 97 or higher). The necessary data, which must be included in a single table, are compatible with the protocol of the AIRTUM Database.

number of cases;

- sex: in M/F or 1/2 format;
- ◆ age in years or in 5-year class format (1=0-4, 2=5-9, ... 18=85+);
- reference year.

After you click the button you will be prompted to select the file containing the population to import:



Once the file is open, the importing population window will be displayed:

Importazione file della popolazione		×
CORT INCIDENZA MORTALITÀ POPOLAZIONE	Selezionare la tabella dei casi da utilizzare. Selezionare "avanti" per continuare. Selezionare "esci" per interrompere.	
	<< Indietro Avanti >> Elabora	Esci

Please select the table containing the population and click "Next":

🕫 Importazione fil	e della popola	zione					×
Numero di casi	NUMERO		•	Età / Fascia			•
Sesso			•	Anno			•
ANNO 1986	ANNO CLETA IDRT NUMERO		ERC	Aggiungi sintassi SQL			-
1986 1986 1986 1986 1986 1986 1986 1986	SESSO 10 10 10 10 10 10 10 10 10 10	1 03 1 04 1 04 1 06 1 06 1 07 1 06 1 06 1 05 1 05	19402 3 20759 4 24517 5 26077 6 25056 7 22167 3 24070 9 23253 0 25899				
visualizza prime	100 righe	aggiorna]	< Indietro	Avanti >>	Elabora	Esci

Bind each required variable to the appropriate field in the table. Click "Process" to start the import.

Other import features and advanced settings

As a guide, the import windows display a sample of the first 100 records listed in the table.

You can change the number of the displayed lines by changing the reset value in "Display First" and clicking "Update".

In addition, you can filter case records on a condition written in the T-SQL language by clicking "Add SQL syntax". A few examples of filters are listed below:

Example 1 – Import only those records in which the COMRES field text is 036023:
SQL syntax: COMRES = '036023'

Example 2 − Import only those records in which the COMRES field contains the number 36023: SQL syntax: *COMRES* = 36023

Example 3 – Import only those records in which the ETA field contains a number between 0 and 14 and in which the TOPOGRAF field starts with C64:

SQL syntax: $[(ETA \ge 0 \text{ and } ETA \le 14) \text{ or } TOPOGRAF \text{ like 'C64%'}]$

Example 4 – Import only those records in which the DATADIAG field is between 1/1/1999 and 12/31/2001: ◆ SQL syntax: *DATADIAG* ≥ #1/1/1999# and *DATADIAG* ≤ #31/12/2001#

or:

SQL syntax: year(DATADIAG) ≥ 1999 and year(DATADIAG) ≤ 2001

Analyzing the data

Once the three tables containing the case records, mortality, and population *f* are loaded, click to display the main window and analyze the imported data:

🕈 Analisi dei dati		X
Elabo	razioni:	Anno/i di diagnosi da valutare:
Topo	grafia (IV cifra)	dal 1998 al 2002
Sedi	mal definite	dai jiooo ai jiooo
Casi	D.C.O.	Anni di diagnosi da utilizzare per
Casi	con verifica microscopica	i trend (min: 3-max: 5):
Distri	ibuzione delle morfologie	dal 1998 al 2002
Morfa	ologie generiche	
Valor	re del rapporto M/I	Correzione per zona:
Trene	d del rapporto M/I	Nord
📃 🔽 Stabi	ilità del rapporto M/I	
Tass	o di incidenza standardizzato	
Rapp	oorto maschi/femmine	
Tass	o di incidenza età-specifico	
📃 🔽 Stabi	ilità delle verifiche microscopiche	
🗌 🔽 Incid	enza dei tumori infantili	
Sopr	awivenza a 1 anno	
Anali	si dei S.I.R. per anno	
Perce	entuale di incongruenze sede-morfologia	
Selez	ziona tutti Deseleziona tutti	
		Ok Annulla

You can clear the controls you do not wish to run by clicking the corresponding check mark. Then, select the year(s) of diagnosis you want to evaluate and the years you want to use for trend calculation. The latter must coincide with, or include, the first period and must include between 3 and 5 consecutive years.

After that, select the most appropriate correction by region (the default selection is "Italy").

Once you have correctly set up the preceding parameters for processing, you can start the analysis by clicking "Ok".

You will be prompted for the name of the output file and for the target path. When the analysis is complete, the following window will be displayed:

🕅 Anali	si dei o	lati	X
		Elaborazioni:	Anno/i di diagnosi da valutara
178	13	 ✓ Topografia (IV cifra) ✓ Sedi mal definite 	dal 1998 al 2002
146 150 88	0 0 7	 ✓ Casi D.C.O. ✓ Casi con verifica microscopica ✓ Distribuzione delle morfologie 	Anni di diagnosi da utilizzare per i trend (min: 3-max: 5): dal 1998 al 2002
46 56 56	0 2 2	Morfologie generiche Valore del rapporto M/I Trend del rapporto M/I	Correzione per zona:
54 71 37	4	Stabilità del rapporto M/I Tasso di incidenza standardizzato Rapporto maschi/femmine	Esito: 10771 / 11457 Acquiratetara: 02 1996
68	4	Tasso di incidenza età-specifico Stabilità delle verifiche microscopiche Incidenza dei turnori infantili	Completezza: 97.02% Valori fuori limiti: 1 Valori fuori limiti gravi: 0
72 73 57		 ✓ Soprawivenza a 1 anno ✓ Analisi del S.I.R. per anno ✓ Percentuale di incongruenze sede-morfologia 	
1319	41	Seleziona tutti Deseleziona tutti	

The number of checks that had a positive outcome (in green) and a negative outcome (in red) will be indicated for each group. A summary of the overall outcome of the analysis will be displayed on the right side of the window. Specifically, the following items will be displayed:

- obtained score/maximum score;
- percentage of accuracy points obtained vs. maximum accuracy points;
- percentage of completeness points obtained vs. maximum completeness points;
- number of checks that failed and have a value exceeding CheckRT limits;
- number of checks that failed and have a value grossly exceeding CheckRT limits;
- alert for DCO values that exceed CheckRT limits (if any);
- indicative outcome for the purpose of AIRTUM accreditation.

Detailed results are provided in the output file. To access this file, simply click the button that appears under the summary of the results. The structure of the output file is shown in the following figure:

🗈 Output.txt - Blocco note	X
File Modifica Formato Visualizza ?	
<pre>! 030) Ovaic: % neoplasia NAS (21, 3% - 4.4%) p-value: 0.014 031) Prostat: % neoplasia NAS (0, 3% - 0.6%) p-value: 0.753 032) Testicolo: % neoplasia NAS (1, 9% - 1.2%) p-value: 0.753 033) Nestica: % neoplasia NAS (0, 1% - 1.4%) p-value: 0.75 033) Nestica: % neoplasia NAS (0, 1% - 1.4%) p-value: 0.003 036) Octio: % neoplasia NAS (0, 1% - 1.4%) p-value: 0.003 036) Octio: % neoplasia NAS (0, 1% - 1.4%) p-value: 0.034 037) Encefalo & SWC: % neoplasia NAS (3, 5% - 2.2%) p-value: 0.5 038) Octio: % neoplasia NAS (3, 5% - 2.2%) p-value: 0.5 039) Oftomaioia surrenale: % neoplasia NAS (4, 5% - 3.3%) p-value: 0.5 110400 Linfoma non nodghin: % linfoma ANS (4, 5%) p-value: 0.75 042) Leucemia linfatica: % linfatica NAS (1% - 1.4%) p-value: 0.75 043 Leucemia linfatica: % linfatica NAS (1% - 1.4%) p-value: 0.75 044 Leucemia Ninfatica: % linfatica NAS (3, 5% - 4.3%) p-value: 0.5 110401 Totale (M): % neoplasia NAS (3, 3% - 1.6%) p-value: 0 11045 Totale (M): % neoplasia NAS (5, 2% - 1.4%) p-value: 0 044 Leucemia (1% SK) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 3% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 110405 Totale (M): % neoplasia NAS (5, 2% - 1.6%) p-value: 0 11045 Totale (M): % neoplasia NAS (5,</pre>	
Test superati: 38/46 (benchmark: 588/884)	
ANALTSI DEL VALDAE DEL BAPPORTO M/T: 001) Ebitro (M+F): Rapporto M/T (28.6% - 37.9%) p-value: 0.161 003) Lingua (M+F): Rapporto M/T (28.6% - 37.9%) p-value: 0.425 003) Cavitá orale (M+F): Rapporto M/T (35.8% - 42.5%) p-value: 0.425 004) Ghiandole salivari (M+F): Rapporto M/T (35.8% - 42.5%) p-value: 0.502 005) Faringe (M+F): Rapporto M/T (36.1% - 60.2%) p-value: 0.502 006) Esofago (M+F): Rapporto M/T (36.1% - 60.2%) p-value: 0.575 007) Stomaco (H): Rapporto M/T (36.1% - 60.2%) p-value: 0.575 008) Intestino tenue (M+F): Rapporto M/T (31.6% - 33.3%) p-value: 0.587 009) Intestino tenue (M+F): Rapporto M/T (31.6% - 33.3%) p-value: 0.587 009) Intestino tenue (M+F): Rapporto M/T (31.6% - 33.3%) p-value: 0.587 010) Colon (H): Rapporto M/T (38.9% - 41.7%) p-value: 0.388 013) Retto (F): Rapporto M/T (38.9% - 41.7%) p-value: 0.388 014) Retto (F): Rapporto M/T (38.9% - 41.7%) p-value: 0.384 015 Performed (M): Rapporto M/T (38.9% - 41.7%) p-value: 0.385 016 Performed (M): Rapporto M/T (38.9% - 41.7%) p-value: 0.386 017 Retto (F): Rapporto M/T (38.9% - 41.7%) p-value: 0.385 018 Performed (M): Rapporto M/T (38.9% - 41.7%) p-value: 0.385 019 Performed (M): Rapporto M/T (38.9% - 41.7%) p-value: 0.385 010 Performed (M): Rapporto M/T (38.9% - 41.7%) p-value: 0.385 011 Performed (M): Rapporto M/T (38.9% - 41.7%) p-value: 0.385 012 Performed (M): Rapporto M/T (38.9% - 41.7%) p-value: 0.385 013 Performed (M): Rapporto M/T (37.9% - 43.9%) p-value: 0.371 014 Performed (M): Rapporto M/T (37.9% - 43.9%) p-value: 0.372 015 Performed (M): Rapporto M/T (37.9% - 43.9%) p-value: 0.453 016 Performed (M): Rapporto M/T (37.7% - 74.9%) p-value: 0.453 017 Performed (M): Rapporto M/T (37.7% - 74.9%) p-value: 0.453 018 Performed (M): Rapporto M/T (37.7% - 74.9%) p-value: 0.453 019 Performed (M): Rapporto M/T (37.7% - 74.9%) p-value: 0.453 019 Performed (M): Rapporto M/T (37.7% - 74.9%) p-value: 0.453 010 Performed (M): Rapporto M/T (37.7% - 74.9%) p-value: 0.453 011 Performed (M): Rapporto M/T (37.7% - 74.9%) p-value	
	2

The typical format used for presenting results is as follows: [Outcome] CheckNumber) CheckDescription (RegistryValue – ExpectedValue) p-value: Value [Alert] Where:

Data field	Description			
Outcome	Is "!" when the check fails with a confidence of 95% but not of 99% and "!!!" when the check fails with a confidence of			
	both 95% and 99%. Otherwise, the check is considered as passed.			
CheckNumber	The sequential value of the check in the group of checks.			
CheckDescription	A brief text describing the portion of the case records being checked in the form of Denominator: Numerator.			
RegistryValue	The value of the check in the Registry.			
ExpectedValue	The value of the check in the reference population.			
Value	The significance of differences according to Fisher's exact test.			
Alert	If present, indicates that a check with an outcome of "!" or "!!!" also exceeds CheckRT limits.			

For more information, please refer to the "Technical Support" topic in the program's Help system.

Restrictions and system requirements

CheckRT is the property of AIRTUM-CCM: its use is limited to the cancer registries associated with AIRTUM and the resale or copying thereof, even partial, is not allowed without the explicit permission of AIRTUM.

The minimum requirements for using *CheckRT* are as follows:

- operating system: Microsoft Windows 98 SE or higher (Windows XP recommended);
- memory: 256Mb or more (512Mb or more recommended);
- disk space: 60Mb or more.