Additional file 5: Comparison in fatal cases of study classification with vital statistics coding

Table: Outcome of neurological assessments of 315 events in persons known to have died by May 31, 2001 and for which death certificate coding was available: study classification versus assignment of underlying cause of death by the regional health statistics office; stratified by type of assessment within the study.

		Study classification			
		Stroke (FIL*)	Not stroke	Insuffic-ient info.	Total
1. Directly assessed fatal events† (n=91)					
Vital statistics coding	Stroke‡	64 (53)	3	3	70
	Not stroke	15 (12)	5	1	21
	Total	79 (65)	8	4	91
2. Indirectly assessed fatal events§ (n=79)					
Vital statistics coding	Stroke‡	59 (45)	3	1	63
	Not stroke	8 (6)	8		16
	Total	67 (51)	11	1	79
3. Fatal events lacking specialist assessment‖ (n=145)					
Vital statistics coding	Stroke‡	55 (26)	38	17	110
	Not stroke	14 (6)	17	4	35
	Total	69 (32¶)	55	21	145
4. Total assessed fatal events (n=315)**					
Vital statistics coding	Stroke‡	178 (124)	44	21	243
	Not stroke	37 (24)	30	5	72
	Total	215 (148)	74	26	315

* Of which, first ever in a lifetime.
† Events in which there was a clinical assessment before death by study neurologists
‡ ICD(9) codes 431.1-437.9.
§ Events where death occurred before a clinical assessment could be made by study neurologists but where a service neurologist or pathologist had made an assessment and these findings were available to the study.
‖ Includes only events detected by screening death certificates, usually before coding by vital statistics office and for which information from neurological assessments prior to death or from autopsy was not available. All of these had a stroke diagnosis in one of the cause of death fields of the death certificate.
¶ 23 of these 32 events were in persons aged 45-84 and thus contributed to the incidence estimates given in the paper.
** These data exclude 25 fatal cases (13 of them incident cases aged 45 to 84) for which death certificate coding was not available.

Comment

In the case of study classifications based on specialist assessments (the first 2 strata), the study classified 146 as stroke compared to 133 with stroke assigned as the underlying

cause of death by the vital statistics office. The direction of difference is consistent the with findings of other Bulgarian investigators[1] which suggest that the official vital statistics coding tends to under-attribute deaths to stroke.
In the case of the third group, information from clinical assessments prior to death by study or service neurologists (or from autopsy) was lacking. In these events, study protocol was to exercise conservatism before classifying them as probable stroke. Consistent with this policy, the study has classified a smaller number as stroke than have been assigned to stroke as the underlying cause of death by the vital statistics service (69 compared to 110 respectively). Furthermore, the proportion in this stratum classified as first in lifetime strokes is notably low, partly reflecting a policy of not classifying the stroke as incident in the face of uncertainty about whether or not it was the first in a lifetime.

Further analyses of the 145 assessments of fatal events lacking specialist assessment before death

'Sufficiency' of information for judgment as to whether stroke or not and whether first in lifetime or not	Outcome of assessment		Total
	First in lifetime stroke aged 45 to 84	Other	
Information from both GP and relatives judged 'sufficient'	0	3	3
Information from GP judged sufficient, information from relatives not judged 'sufficient'	7	16	23
Information from relatives judged 'sufficient', information from GP either missing or not judged sufficient	16	76	92
Other	0	27	27
Total	23	122	145

1. Tzoneva-Pencheva L, Mantchev I, Veltcheva I, Chervenko K. Validity of cerebrovascular disease mortality statistics in Bulgaria. Int.J.Epidemiol. 1997; 26 : 721-9.