Statistical card in death certificate as an important source of information in population health assessment

Karta statystyczna do karty zgonu jako ważny dokument do oceny stanu zdrowia populacji

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Epidemiologia jako nauka zajmująca się badaniem stanu zdrowia populacji, oprócz prowadzenia specjalnie zaplanowanych badań, może korzystać z tzw. wtórnych źródeł informacji, zbieranych do innych celów, ale niezmiernie przydatnych w analizie zdrowotności, np. informacji zawartych w rejestrach zgonów.

Dane dotyczące umieralności w Polsce są kompletne ze względu na prawny obowiązek zgłaszania zgonu; w 98% o zgonie orzekają lekarze. Zastrzeżenia może budzić jakość rozpoznań wyjściowej przyczyny zgonu. Według danych Narodowego Instytutu Zdrowia Publicznego – Państwowego Zakładu Higieny ponad 6% wszystkich zgonów w Polsce spowodowanych jest przyczynami niedokładnie określonymi lub nieznanymi. Prawidłowe orzekanie wyjściowej przyczyny z podaniem konkretnego typu nowotworu pierwotnego lub zaznaczeniem "ognisko pierwotne nieznane" na Karcie Statystycznej oraz karcie zgłoszenia nowotworu złośliwego, wypisywanej na podstawie danych z karty zgonu, mogłoby dać bardzo ważną informację, ile rozpoznań C80 wynikało wcześniej z błędów lekarzy wypisujących wyjściową przyczynę zgonu, a ile rzeczywiście stanowi odzwierciedlenie poważnego problemu onkologicznego.

Wojewódzcy orzecznicy mogą zweryfikować ewidentne błędy, część rozpoznań uściślić, ustalić okoliczności zgonów nagłych z przyczyn zewnętrznych, ale nie mogą podważać decyzji lekarza orzekającego o zgonie. Prawidłowe orzekanie o wyjściowej przyczynie zgonów stanowić powinno ważny element działalności lekarza. Studentom i młodym lekarzom należy także uświadomić fakt, że karty zgonów nie stanowią tylko dokumentów potrzebnych do pochowania zmarłego, ale mogą stanowić cenną podstawę do prowadzenia badań nad stanem zdrowia populacji i ewentualnych dalszych działań profilaktycznych oraz organizacyjnych w zakresie opieki zdrowotnej.

Epidemiology is a science assessing the health of a population. Apart from carrying out specially designed research it can also utilize the so-called secondary sources of information usually collected for other reasons but extremely useful in health analysis, e.g. information in death registers.

The data on mortality are complete in Poland as every death is legally required to be reported; 98% of deaths are pronounced by physicians. However, the quality of the primary causes of death on Death Certificate can raise doubts. According to the data of the National institute of Public Health – State Hygiene Department – for over 6% of all deaths in Poland the reasons given are insufficiently determined or unknown.

The correct identification of primary cause of death stating primary type or clearly stating: primary-unknown on the Statistical Card as well as on notification card (based on the data from Death Certificate) could give a very important information about how many C80 diagnoses were the result of erroneous primary cause of death and how many reflect a serious oncological problem.

The district expert clinical adjudicators are able to correct obvious errors, clarify some diagnoses, ascertain the circumstances of sudden deaths from external causes but they cannot undermine the certification of the clinician pronouncing death. Correct identification of primary cause of death should be an important element of the doctor's activity. Medical students as well as doctors need to be made aware that Death Certificates are not issued for the sole purpose of burial but can also provide valuable information towards the research on population's health, possible prophylactic measures and organizational change in health service.

Key words: death certificate, secondary source of information, cause of death, cancer mortality

Słowa kluczowe: karta zgonu, wtórne źródła informacji, przyczyna zgonu, umieralność na nowotwory

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Scientific research in medical sciences covers a particularly broad spectrum. Epidemiological analysis ascertains the natural course of diseases, causative relationship between risk factors and disease occurrence, population health and the effectiveness of prophylactic measures. Research in Epidemiology can be best divided into experimental and non-experimental (observational).

The recent economic crisis affects many aspects of social life including the reduction of funding in statutory as well as individual university research programs, also medical programs. At the same time there is an ongoing discussion how to optimize expenses on some medical services [1].

While hoping the situation is only temporary, one should concentrate on measures which do not generate high cost yet are very important in the assessment of public health. It is of special significance in Poland where general health, in male population in particular, is decidedly worse than in the rest of Western European countries. One should endeavor to improve the quality of population studies data.

On the one hand the development of Epidemiology as a scientific discipline provides methodological tools useful in the research in other medical fields. There they help to ascertain the relationship between various risk factors of genetic, biological, behavioral and social nature and the health status of the population. On the other, Epidemiology has been unappreciated and marginalized in many medical curricula. This can be in part blamed on medical profession as well as medical schools authorities who have never convincingly defended Epidemiology as an exclusively medical specialty.

According to professor Andrzej Zielinski, a longtime national consultant in Epidemiology "nonuse or misuse of epidemiological methods can lead to serious mistakes and sometimes abuse in practical activity" [2].

Epidemiology is a science assessing the health of a population. Apart from carrying out specially designed research it can also utilize the so-called secondary sources of information normally collected for other reasons yet extremely useful in analyzing health situations e.g. the information obtained from death registry. The data on mortality are full and complete in Poland as every death is legally required to be reported and is certified in 98% of cases by doctors. However, the quality of the primary causes of death on Death Certificate can raise doubts. According to the National Institute of Hygiene the data on more than 6% of all deaths in Poland have unknown or inaccurately defined causes [3].

In order to enhance the accuracy of Death Certificates at a district (voivodeship) level since 1997 a new position of doctors-encoders (expert clinical adjudicators) was opened. Their responsibility has been to verify the primary cause of death on the Certificate and - if required - correct it in accordance with The Tenth Revision of the International Classification of Diseases and Related Health Problems (ICD-10). This action has led to a greater precision in primary causes of death, particularly in the case of circulatory system diseases, which in turn has led to the increase in the diagnosis of ischemic heart disease as well as cerebro-vascular diseases in place of the all too common "generalized arteriosclerosis" [4]. The research, carried out by Wojtyniak, Jankowski, Zdrojewski and Opolski in 2007-2009 in 11 Polish provincial capital cities, on mortality from cardiovascular diseases classified in accordance with ICD-10, showed the above mentioned discrepancy. In no way can it be explained by geographical, demographic differences, economic development or lifestyle. For example, the standardized mortality rates due to atherosclerosis in Cracow and Wroclaw were 6-9 times higher than in Bialvstok, Katowice, Warsaw and Poznan. Unspecified stroke as a primary cause of all stroke-related deaths constituted 40% of diagnoses in the cities of Lodz and Lublin, even though 80% of the deaths occurred in hospitals [5]. The authors have demonstrated the need to develop and implement unified criteria in determining the primary cause of death as well as the demand for better training and education of doctors and medical students in this area [5].

The district expert clinical adjudicators are able to correct obvious errors, clarify some diagnoses, ascertain the circumstances of sudden deaths from external causes but they cannot undermine the certification of the clinician pronouncing death. It is feasible the quality of mortality data will deteriorate further as the introduction of computerized coding of deaths is going to be implemented in near future. In view of this the need to train doctors and medical students in identifying the correct primary cause of death becomes particularly important. Learning the skill should not create an additional burden for already overworked Polish doctors as writing the incorrect cause takes just as much time as the correct one. Medical students as well as doctors need to be made aware that Death Certificates are not issued for the sole purpose of burial but can also provide valuable information towards the research on population's health, possible prophylactic measures or organizational change in health service. Primary cause of death stated on the Statistical Card on occasion differs from the diagnosis supplied to National Health Fund (NHF) for the purpose of billing. Regrettably, the NHF can dictate providers (hospitals)

which services can and which cannot be reimbursed. It cannot however dictate patients what to die of. Malignant tumors with outstated definite site are not due for a refund. One is even tempted to purport the theory that the NHF authorities thus are attempting to improve on the quality of the register of malignancies. In spite of proper registration of malignant diseases in the National Cancer Register, the all too frequent diagnoses with no site stated compromise the quality of the Register data. In the 2013 study by Stawinska-Witoszynska on male over-mortality from malignant disease in the city of Poznan, which was based on primary cause of death as stated on the Statistical Card of Death Certificate, the malignancy with no specific site or location take a prominent place among malignant deaths especially in female population [6]. A statistically significant increase in mortality in 1991-2008 as seen in crude as well as age standardized rates means its actual increase. The reason are inappropriately filled Statistical Cards. Some may have been verified afterward by expert clinicians in such a way that they would not take into account the known location of primary and state "disseminated malignancy" instead. Some of the diagnoses may not have been corrected due to incomplete patient medical records. On the other hand one needs to acknowledge that patients in Poland regrettably do die of disseminated malignancy with no identifiable primary when they are investigated or treated too late either due to organizational failure or personal negligence. The correct identification of primary cause of death stating primary type or clearly stating: primary-unknown on the Statistical Card as well as on notification card (based on the data from Death Certificate) could give a very important information about how many C80 diagnoses were the result of erroneous primary cause of death and how many reflect a serious oncological problem.

Since 1951 in Poland the registration of malignant diseases morbidity has been obligatory. The data are collected in National Cancer Register and in sixteen Regional Offices. The database primary source document is Cancer Case Report Card (KZNZ).

Basic measures of the quality of the Cancer Register (in accordance with WHO guidelines) are: completeness (estimated percentage of registered malignant tumors), quality (the percentage of cases which were confirmed by pathology report) and the percentage of DCO (Death Certificate Only), that is the percentage of the Register entries based solely on Statistical Card [6]. The naming of malignancy as a primary cause of death often constitutes the only available item of information about the patient. The percentage of DCO should never exceed 5% of registered cases. Nevertheless this measure is a valuable source of additional information for the completeness of database of cancer patients [7]. Some doctors who identify malignancy as a primary cause of death unfortunately are not aware of the requirement to complete also the Cancer Case Report Card (KZNZ). The lack of the Card (KZNZ) accounts for the underestimation of the number of malignant deaths on the Cancer Register.

The need to improve the completeness of malignant deaths data in the Register on the basis of GUS (Central Statistical Office) database was stipulated by Dyzmann-Sroka in 2010 study [7]. The GUS database on cancer mortality, obtained from the Death Certificate Statistical Cards, comprises statistical data including the date of death, age and gender of the deceased and primary cause of death – as required by the International Statistical Classification of Diseases and Health-Related Problems (ICD-10). This database is also the foundation for the assessment of national and local cancer mortality. Therefore stating the correct primary cause of death should be in the best interest of doctors.

According to the "Programme of statistical surveys for 2009", annexed to the Regulation of the Government on 27th Nov. 2008 (Journal of Laws 2008, no. 221, item 1436 as amended), as from the 1st of January 2009 all Death Certificate Statistical Cards have been sent solely in digital form from local registry offices directly to the Statistical Office in Olsztyn [8]. The role of the district expert clinician has been reduced in favour of "centralized" coding. After the implementation of the computerized encoding of primary causes of death the quality of data on mortality in Polish population may deteriorate without simultaneous training of doctors and medical students in this field. These concerns are indeed supported by data from the Wielkopolska Cancer Registration Office (WBRN). In the decade of 2000-2010 the completeness of WBRN database increased from 93% to 99% whereas the quality from 68% to 87% in women and from 61% to 84% in men. As expected, the "unspecified malignancy" entries in the Cancer Register dropped from 2.4% in 2000 to 1.6% in 2010 in women and from 2.8% to 1.2% in men, respectively. It is unfortunate that during that time the percentage of deaths from malignancy with no clearly specified site increased from 5.4% to 8.7% in women and from 4.4% to 6.7% in men [9, 10].

Thus far the few publications advocating the need for suitable training of doctors and medical students in the correct identification of primary causes of death have brought about no response. Therefore it is the authors' considered opinion that the authorities monitoring public health and managing health services in Poland should jointly tackle the problem as well as apply to the Ministry of Health for suitable undergraduate and postgraduate training in this area.

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