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## Challenges of Public Health Education in the former Soviet Union: Example of Ukraine

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**BACKGROUND:** Many former Soviet Union (fSU) countries face a high burden of disease and a much lower life expectancy compared to western countries. Many of the underlying causes are amenable to public health interventions, but the prevailing Soviet approach to prevention has largely failed to address the new and more complex public health issues these countries face. This study looks at public health challenges in Ukraine, in particular at those related to public health education.

**METHODS:** The research is based on a small-scale, qualitative analysis of information collected through i) review of literature related to public health and public health education in the former Soviet Union and Ukraine, as well as curricula and training material for epidemiology students in Ukrainian medical schools, ii) observations during workshops for epidemiology students and teachers from Ukrainian medical schools and iii) semi-structured interviews with epidemiology students and teachers from Ukrainian medical schools. The collected data was interpreted using the method of thematic discourse analysis, which allowed identifying major areas challenging public health education in the country.

**RESULTS:** The main challenges identified were seen in the outdated conceptual understanding of public health, particularly in epidemiology. These challenges underlie further problems including limited hours and narrow content of epidemiology training, lack of training in research skills, inadequate training material and conservative attitudes among teachers and students towards prevailing ideas and development.

**DISCUSSION AND CONCLUSION:** There is urgent need for a wider definition of public health, moving towards the "New Public Health" approach and subsequently a series of changes to education curricula and materials. Curricula reform should provide additional hours for covering non-communicable diseases, non-medical topics such as health policy and health promotion and ensure linkage between training and research. Critical evaluation of current approaches, their impact and performance is essential for reforming public health education programmes and strengthening health systems.

**KEYWORDS:** public health; preventive medicine; epidemiology; soviet approach to prevention; former Soviet Union countries; Ukraine.

## Проблемы подготовки кадров в области общественного здравоохранения в бывшем Советском Союзе: пример Украины

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**АКТУАЛЬНОСТЬ:** Многие страны бывшего Советского Союза характеризуются большей заболеваемостью и меньшей продолжительности жизни в сравнении с западными странами. Значительная часть причин этой ситуации может быть устранена посредством интервенций общественного здоровья, но преобладающий советский подход к профилактике не справляется с новыми и более сложными проблемами общественного здоровья, возникающими в этих странах. Данное исследование рассматривает проблемы общественного здоровья в Украине, в особенности те, которые имеют отношение к подготовке кадров в общественном здоровье.

**МЕТОДЫ:** Исследование основано на анализе небольшого объема качественных данных, собранных посредством (а) обзора литературы, посвященной общественному здоровью и соот-

ветствующему образованию в бывшем СССР и Украине, а также учебных курсов и материалов по эпидемиологии для медицинских учебных заведений, (б) наблюдений во время семинаров для студентов и преподавателей-эпидемиологов из украинских медицинских университетов и (в) полуструктурированных интервью со студентами и преподавателями-эпидемиологами из украинских медицинских университетов. Собранные данные проанализированы с использованием метода тематического дискурс-анализа, который позволил выявить важнейшие трудности подготовки кадров в области общественного здоровья в стране.

**РЕЗУЛЬТАТЫ:** Главная обнаруженная проблема состоит в сохранении устаревших представлений, касающихся общественного здоровья и, в частности, эпидемиологии. Это предопределяет дальнейшие трудности, включая недостаток

времени и неполное раскрытие содержания эпидемиологии, отсутствие навыков проведения исследований, несоответствующие времени учебные материалы и консервативное отношение преподавателей и студентов к преобладающим идеям и возможному развитию.

**ОБСУЖДЕНИЕ И ЗАКЛЮЧЕНИЕ:** Существует острая необходимость использования более широкого определения общественного здоровья, подхода «Нового общественного здравоохранения» и, следовательно, внесения ряда изменений в учебные планы и материалы. Учебные курсы должны предоставлять дополнительное время для освещения темы неинфекционных за-

болеваний и немедицинских вопросов, касающихся политики здравоохранения и содействия здоровью, а также обеспечивать связь между обучением и исследованиями. Критическая оценка нынешних подходов, а также их влияния и реализации является необходимой для реформирования образования в области общественного здоровья и укрепления системы здравоохранения.

**КЛЮЧЕВЫЕ СЛОВА:** общественное здоровье; профилактическая медицина; эпидемиология; советский подход к профилактике; страны бывшего Советского Союза; Украина.

## Проблеми освіти в галузі охорони громадського здоров'я в колишньому Радянському Союзі: приклад України

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**АКТУАЛЬНІСТЬ:** В багатьох країнах колишнього Радянського Союзу захворюваність суттєво вища, а очікувана тривалість життя нижча, ніж у західних країнах. Багато з причин цих проблем можна подолати заходами громадського здоров'я, проте широко застосований радянський підхід до профілактики не здатний вирішити нові та складніші проблеми громадського здоров'я, з якими стикаються ці країни. Це дослідження розглядає проблеми громадського здоров'я в Україні, зокрема проблеми, пов'язані з освітою в охороні громадського здоров'я.

**МЕТОДИ:** Дослідження базується на аналізі невеличкого обсягу інформації, зібраної через (а) огляд літератури, що стосується громадського здоров'я та освіти в цій галузі в колишньому Радянському Союзі та Україні, та навчальних програм та матеріалів з епідеміології з медичних університетів, (б) спостереження під час семінарів для студентів та викладачів з епідеміології з українських медичних університетів, (в) напівструктуровані інтерв'ю зі студентами та викладачами епідеміології з українських медичних університетів. Зібрані дані було інтерпретовано із застосуванням тематичного дискурс-аналізу, який дозволив визначити важливіші галузі, що ускладнюють освіту з охорони громадського здоров'я в країні.

**РЕЗУЛЬТАТИ:** Головна знайдена проблема стосується застосування застарілих концепцій охорони громадського здоров'я, зокрема епідеміології. Це лежить в основі подальших проблем, включаючи нестачу часу і обмежений зміст курсів з епідеміології, відсутність навчання навичкам проведення досліджень, неадекватні навчальні матеріали та консервативні погляди викладачів та студентів щодо превалюючих думок та можливого розвитку.

**ОБГОВОРЕННЯ ТА ВИСНОВКИ:** Існує нагальна потреба у застосуванні ширшого визначення громадського здоров'я, просування у напрямі підходу «Нового громадського здоров'я» з подальшою низкою змін навчальних програм та матеріалів. Реформування навчальних курсів має надати додаткові години для обговорення неінфекційних захворювань та немедичних тем, включаючи політику охорони здоров'я та сприяння здоров'ю, а також забезпечити зв'язок навчання із дослідженнями. Критична оцінка сучасних підходів, їхнього впливу та реалізації є важливою для реформування навчальних програм з охорони громадського здоров'я та посилення систем охорони здоров'я.

**КЛЮЧОВІ СЛОВА:** охорона громадського здоров'я; профілактична медицина; епідеміологія; радянський підхід до профілактики; країни колишнього Радянського Союзу; Україна.

## INTRODUCTION

Despite impressive health gains over the last few decades, the challenges facing public health on the global level are great. In Europe, the considerable gradient in life expectancy between Western European countries and fSU countries is

observed with premature deaths largely caused by preventable conditions.

A major difference between these two groups of countries may be found in public health practices. While public health in the Western world is approached through health promotion and reducing health in-

equalities, practices targeting population health in most former Soviet Union countries take the form of a specific approach implemented through a network of sanitary-epidemiological stations. Sanitary-epidemiological stations were established throughout the Soviet Union to address the most pertinent

population health issues at the time, namely communicable diseases, environmental and occupational hazards, sanitation and hygiene. Although the approach has undergone significant reforms in some countries, Ukraine has held on to the model with only minimal structural changes. Subsequently, the increasing presence of non-communicable diseases has posed considerable challenges for its health system. Ukraine has a very low life expectancy compared to Western Europe, 62.3 and 73.8 years for men and women respectively in 2010, with over 80% of mortality attributable to non-communicable diseases (Lekhan et al., (2010), p. 9.).

In other words, the understanding of what the society should do to address health issues in the population (what was in the West shaped as 'public health') is substantially different in the fSU as compared to that in the US and western Europe. Not to confuse the two ideas, we will label one the 'Soviet approach to prevention', and the other 'public health'. Authors of earlier papers devoted to this subject have used the term 'public health' for both approaches with the inevitable consequence that they end up asking themselves why one 'public health' is so different from the other.

One crucial area for improving performance of health systems is public health education. The World Health Report in 2006 titled *Working Together for Health underscores the importance of public health workforce development* for strengthening health systems and addressing present and future national and global population challenges. For this it is essential to assure educational quality (WHO (2006), p. xv). In Ukraine, training of professionals involved in prevention is organized around the pri-

orities defined by the Soviet approach. It is integrated as a part of medical education, with a clinical focus primarily on prevention of infectious diseases. With regard to the situation in Ukraine, a recent report by Tarantino (2011) notes: "*Training of health cadres follows primarily teaching of clinical practices, although typically in an overly theoretical and didactic manner, with very little exposure of students to public health*" (Tarantino et al. (2011), p. 62). The recent establishment of the first Ukrainian School of Public Health (SPH) within the National University of Kyiv-Mohyla Academy, which provides graduate education, is an important achievement, but introducing contemporary public health approaches in undergraduate training programmes is still crucial to ensure that the country's health workforce is trained to adequately address its public health challenges.

Overall, little research has been devoted to the composition, training and performance of public health workers and hence the available evidence to shed light on development barriers and inform policy is limited. A number of rather general, regional level studies of public health challenges and education have been published, yet there is very little evidence of the current situation, particularly in Ukraine.

This study examines public health education in Ukraine. More specifically, it aims to give an overview of the undergraduate training of future professionals in the country, identify some of the main challenges and contribute to the evidence base for the need for intervention in this area. It raises the questions: How is public health understood in Ukraine? How is this understanding reflected in education? What are the implications of the education approaches applied

in Ukraine? What are the perceptions of students and professors about approaches used in education? To answer these research questions, information was collected through a review of published literature, existing curricula and training material, observations, and semi-structured interviews. The method of thematic discourse analysis was used to interpret the data, allowing identifying the major themes in which the challenges for public health education are found.

### **The Historical Context of Public Health Education in Ukraine**

To fully understand public health thinking and practice in Ukraine it is necessary to first give a brief overview of the historical context in which it has taken form.

The sanitary-epidemiological stations and their specific preventive approach were initially shaped in the context of ongoing epidemics, such as cholera and typhus, which constituted the most serious threats to public health in the Soviet Union in the 1920-30s. Therefore, the main purpose was to protect the health of the population from infectious diseases and epidemics, as well as occupational and environmental health hazards, through hygienic and sanitary control measures (Maier & Martin-Moreno (2011), p. 19). The sanitary-epidemiological services were carried out as a part of a larger, highly centralized health system that consisted of hospitals, polyclinics and specialized treatment facilities. Indeed, the system became internationally recognized due to its success in achieving universal access to prevention and curative care and consequently control of infectious disease (Tulchinsky & Varavikova (1996), p. 313-314)

Meanwhile, prevention of non-communicable diseases was entirely neglected. Even after the epidemiological transition and the sharp rise in cardiovascular and other chronic diseases during the 1960s, the national health strategy strongly prioritized infectious diseases, medical care, improvement of healthcare facilities through building more specialized hospitals, diagnostics and treatment technology. The situation was aggravated by the limited availability of epidemiological information to inform about new developments and risk factors affecting the health of the population, as statistical and epidemiological data were regarded as state secrets in the Soviet Union (Tulchinsky & Varavikova (1996), p. 316; Gotsadze et al. (2010), p. 1-2). While the operation of sanitary-epidemiological services had already weakened in the years prior to independence, the abrupt switch from communism to capitalism followed by substantial deterioration of population health and collapse of the social relations put the system under severe pressure. It became evident that sanitary-epidemiological services were extremely underfunded and ineffective, incapable of coping with complex emerging epidemics such as TB, HIV/AIDS and sexually transmitted diseases, and with the rising numbers of chronic diseases (Maier & Martin-Moreno (2011), p. 20).

Education for disease prevention in the Soviet Union was organized along the lines of this system. “Hygiene doctors” and “epidemiology doctors”, most of whom were to be employed in sanitary-epidemiological stations, received training within medical schools focusing specifically on surveillance and control of communicable diseases and sanitary issues (e.g. food, water and air safety, immunization,

environmental and occupational health and safety etc.) (Djibuti et al. (2010), p. 8; Adany et al. (2010), p. 107). Epidemiological research was encouraged only in the officially permitted knowledge domains and exclusively devoted to infectious diseases. Access to international, professional contacts and western scientific literature was limited. Information and knowledge sharing was prevented by centralism and isolation from outside, which limited the ability to respond adequately to prevailing health problems (Tillinghast & Tchernjavski (1996), p. 476).

Since the 1990s, a few former Soviet Union countries have taken noteworthy initiatives to modernize the health system. Like most, however, Ukraine has held on to the sanitary-epidemiological service as the main structure responsible for disease prevention in the country, without major organizational or structural changes, largely retaining the focus on control of communicable diseases and enforcements of sanitary controls (Gotsadze et al. (2010), p. 4). The ways in which this approach shapes the current public health workforce education in Ukraine will be assessed in the remainder of the paper.

## METHODS

### Literature review

A literature review was conducted to provide information related to the general background and the context of the study. The review included literature and documents published between 1991 and 2012, such as journal articles, working papers and textbooks relevant to public health and public health education in Ukraine.

The reviewed material was found through iterative searching on the internet, mainly utilizing search en-

gines such as Google and PubMed. Information was also searched through websites of relevant ministries and government agencies, medical schools, international, regional and national organizations concerned with public health and epidemiology. The key words used included “public health training”, “epidemiology training”, “public health and education challenges”, “sanitary-epidemiological training” etc. As it proved difficult to find information specifically on Ukraine, the search was widened to include “former Soviet countries”, “USSR”, “CIS” and “Central and Eastern Europe”. The reviewed literature and the key words used were exclusively in English language. In addition, a review of epidemiology curricula and training materials provided by one of the Ukrainian medical universities was conducted to get further insight into the structure and content of epidemiology training for undergraduate students.

### Observations

Additional information was gathered through observations during two workshops for researchers conducted on the 4-5th and the 19th-20th of July 2012 at the School of Public Health (SPH), National University of Kyiv-Mohyla Academy (NaUKMA) in Kiev. A total of nine persons participated in the workshops. Five of the participants attended the two-day “Workshop for Young Researchers”, aimed at students and graduates in epidemiology from a selection of medical universities in the country. The remaining four participated in the two-day “Workshop for Teachers of Epidemiology Departments”.

The workshops were a joint initiative by the WHO Country Office in Ukraine and the SPH NaUKMA, with the objective to provide an in-

sight into modern approaches and research methods in epidemiology and share information on experiences in publishing work in international journals.

Prior to the workshops, the participants were provided with a preliminary agenda and structure for the two days. During the opening sessions, however, the participants were given the opportunity to select the topics to be focused on according to what they felt was most pertinent to them. The "Workshop for Young Researchers" covered study designs and methodologies in epidemiologic research, how to write reports and articles according to international standards and how to publish research and conduct effective literature search. The main topics at the "Workshop for Epidemiology Teachers and Researchers" included publishing, peer reviewing, international cooperation and medical education in Ukraine. An average of 7 hours per workshop day was spent on these topics.

While the researcher participated in the workshop sessions, the observations were conducted covertly so as to avoid problems of observer effect. For the same reason and due to the long duration of the workshops the discussions were recorded exclusively through note-taking. All sessions were conducted in English with simultaneous translation into Russian by a professional interpreter.

### **Semi-structured interviews**

To supplement the information gathered from observations, semi-structured interviews were conducted for a more in-depth discussion with students and teachers about their experiences and opinions of public health and epidemiology training in Ukraine. Interviews were held with a total of

four graduate students and two teachers of epidemiology from different medical universities in Ukraine. The interviews lasted on average 1.5 hours. At the beginning of each session, the purpose of the interview was explained to each participant, informed consent was obtained and confidentiality was ensured.

The questions were focused around the participants' understanding of public health, organization of "public health training", in particular epidemiology, the structure and content of the curricula, the training material and the participants own perceptions of the training quantity and quality. All interviews were held in English language. As in the case of the workshop observations, the interviews were recorded through note-taking to avoid potential biases arising from anxiousness caused by using tape recorder.

### **Analysis of Data**

Notes obtained during the interviews and observations were analyzed and harmonized with findings from the literature review. Utilizing the method of thematic discourse analysis allowed identifying regularities and recurrences in the reviewed texts and workshop and interview participants' accounts. The findings were coded and recurrent opinions, topics, statements etc. were grouped into "themes" which are presented in the 'results' section as the main challenges for public health education in the country.

## **RESULTS**

The themes that emerged through the data analysis, include inadequate organization and content of epidemiology training, outdated conceptual understanding of public health and epidemiology, outdated

training material and limited research skills and access and motivation to publish and conservative attitudes towards own system and change.

### **Inadequate organization and limited content of epidemiology training**

At present, medical education is provided by 18 state medical universities and faculties. In addition, there are four licensed and accredited private institutions providing higher medical education (Tarantino et al. (2011), p. 61). Undergraduate medical education in the country usually follows a five or six-year curricula, the structure and content of which varies depending on whether students specialize in general medicine, pediatrics, dentistry, or preventive medicine and sanitation (Lekhan et al. (2010), p. 106). The specialization in disease prevention and sanitation is intended for those students who seek to be employed in the sanitary-epidemiological stations or other institutions focusing on population health and disease prevention. The preventive medicine and sanitation curriculum typically includes courses such as epidemiology, general, communal, work and food hygiene, in addition to more medically oriented courses (Goodman et al. (2008), para. 2).

Epidemiology training in medical undergraduate (pre-diploma) institutions is integrated into the curricula for medical students, with differing duration and content, depending on the specialization. Students of dentistry are offered 18 hours of theoretical and practical training on dentistry-related diseases prevention. Students of general medicine receive 30 hours of theoretical and practical training, predominantly in etiology, transmission routes and measures to

prevent further transmission of infections. Students specializing in preventive medicine and sanitation have the most comprehensive offer of courses covering 90 hours of theoretical and practical training, related mainly to surveillance and control of infectious diseases as well as the structure, function and organization of sanitary-epidemiologic stations and departments. The curricula are developed and approved by the Ministry of Health and Ministry of Education and apply to all medical universities in the country (Curricula for Epidemiology, Kyiv National Medical University).

One of the most frequently mentioned issues with regard to organization and structure of epidemiology training was the number of hours dedicated to essential topics. There was a common consensus that there is not enough time to comprehensively cover all topics foreseen in the curricula and sufficiently prepare students for their post-graduation tasks and roles. Study participants explained that the hours were severely cut since Ukraine officially joined the Bologna Convention in 2005. The biggest concern mentioned was the limited time assigned for practical training. At present, students of preventive medicine and sanitation are offered only 6 months praxis at post-diploma level, after which they become certified epidemiologists.

Looking at the content of the present curricula for epidemiology, the approach is notably narrow, lacking or underemphasizing such topics that would be seen in western epidemiology curricula. Most prominently, there is a heavy emphasis on communicable diseases, with chronic diseases being nearly excluded. According to one of the interviewed epidemiology teachers, the current programmes “discuss”

epidemiology of non-infectious diseases within different topics, during around 6 hours of classes in total. Training in research skills, e.g. study designs, methods, analysis etc. is negligible. Although “epidemiologic method” is mentioned under at least one topic (1-2 hours) in each curriculum, one of the interviewed teachers confirmed that in reality there is no time for comprehensive training in conducting research. Other public health related topics such as epidemiological methods to evaluating health promotion and disease prevention interventions, as well as social and psychosocial aspects of epidemiology are also absent in the training programme.

The teachers of epidemiology attributed the narrow approach mainly to time constraints, but the influence of the differing conceptual understanding of public health and epidemiology in Ukraine as opposed to that in western countries also became evident. These contrasts are outlined in the next chapter.

### **Outdated conceptual understanding of Public Health and Epidemiology**

Observations and interviews underline that the current structure and content of preventive medicine and epidemiology training programmes i.e. the limited exposure of medical students to “modern” epidemiologic approaches is strongly related to the historically shaped differences in public health thinking in Ukraine as opposed to that in the West.

One fundamental difference lies in the relationship between clinical medicine and public health. The approach to public health in Ukraine remains more medically oriented than in western countries, as reflected in the fact that preven-

tive medicine and sanitation training is for doctors and housed within medical academies and universities. The medicalization of the training is most evident in lacking inclusion of non-medical dimensions fundamental for public health e.g. psychosocial or sociological aspects, organizations of health systems, health policy and health promotion or other topics not directly related to biomedical or clinical schemes. Although students and teachers alike defined epidemiology as “*the study of population level health*” or “*prevention of spread of disease on population level*”, the understanding of this appears to be limited to control of infectious disease through diagnostics, isolation and treatment within the medical care system, rather than targeting health awareness and health behaviour on the community or population level. One of the interviewees also pointed out that “*epidemiology in Ukraine is not understood as a part of public health but of medicine*” and that anything associated to non-infectious diseases and non-medical topics related to health should be covered by the departments of social medicine, psychology etc. While it is certainly true that many key areas of modern public health must be given attention also outside of epidemiology, this statement gives further indication of the contrasting conceptual understanding of public health in Ukraine.

Treatment of epidemiology as equivalent to prevention of infectious diseases is another persisting legacy of the Soviet system. A glance in the textbooks and current teaching material for Ukrainian medical students reveals that epidemiology is indeed defined as “*an independent branch of medicine studying aetiology and spreading of infectious diseases in a human*”

community and is aimed at prevention, control, and final eradication of these diseases". The rationale of the study of epidemiology is described as grounded in infectious diseases remaining "the leading cause of death worldwide, new diseases are emerging, old diseases are reemerging, and antimicrobial resistance is emerging as a major problem" (Methodological Recommendations Ukraine, Kyiv National Medical University (English version)). Observations and interviews revealed analogous thinking among teachers and students, with comments including "epidemiology is about prevention of infectious diseases on the population level" and "infectious diseases are the most serious threat to health of the population in Ukraine", while the latter belief is not in concordance with the surveillance data.

### Outdated training material

Another challenge for epidemiology training in Ukraine is the quality and relevance of training material. Many epidemiology textbooks in use are severely outdated, dating several decades back. As revealed during the workshop for teachers of epidemiology institutions still utilize the old textbook by Beliakov, which dates back to 1989. Hence, the content is based on the same, antiquated approach that has shaped the prevailing "public health" ideas and practices in the country.

One epidemiology teacher also confirmed a tendency to start using or recommending western epidemiology textbooks to students. However, these textbooks are direct translations from their original English version and do not include case-studies or other references to the local context. Hence, they lack the specificity of local issues relevant to students' understanding of

applied public health in their own setting. Interviewees also expressed concern over differing terminology used in "western epidemiology", as compared to the "soviet school".

### Limited research skills and access and motivation for publishing

As established by a number of authors, a serious challenge for public health in fSU overall is the low quantity and quality of scientific publications in the field (Müller-Nordhorn et al. (2012), p. 7-9; Tulchinsky & Varavikova (1996), p. 316, 318-319; Powles, et al. (2005), p. 4). A study by Chenet and Telishevskaya (2000), which reviewed 10 studies in Russian and Ukrainian languages on death certificate reliability published between 1963 and 1991, found that a feature common to the papers was the poor quality of reporting. Study designs and methodologies were poorly stated if at all and although a majority of the studies presented their results in percentages, some of them did so only in absolute numbers (Chenet & Telishevskaya (2000), p. 722). Another study by the WHO reviewed operational research on HIV, AIDS and STIs conducted between 1998 and 2006 in Ukraine. It revealed that researchers in Ukraine are poorly trained in development of study design, data collection and analysis (WHO/UNAIDS/UNDP (2010), p. 20). The study noted that most of the reviewed research articles published in Ukrainian scientific journals would have never been accepted for publication in peer-reviewed journals (Ibid., p. 9).

Insufficient research skills emerged as matter of concern in the context of this study. One of the topics covered at the "Workshop for Young Researchers" was study designs.

According to the workshop facilitators, a considerable difference between epidemiology training in the US and the former Soviet Union countries is the absence of training in study designs in the latter. Indeed, the study designs presented at the workshop were not known to the participants, who subsequently had difficulties determining the design of their ongoing studies. The workshop for epidemiology teachers revealed that even more experienced epidemiologists had not been exposed to these. "We also need to learn these (study designs) before we can improve our training course", said one teacher. Furthermore, there appeared to be no knowledge of methods for data analysis. None of the students had used statistical packages such as SPSS and none of them were aware if such software could be accessed in their universities. Some workshop participants were not able to justify their research topics, indicating scientific research is not always based on current gaps in knowledge and need for evidence.

Given the conceptual differences between public health in the west and in Ukraine, the lack of academic research activity in the area of non-communicable diseases is not surprising. A study by Powles et al. (2005) on the contribution of leading diseases on the deterioration of health in Eastern Europe, noted the low rates of published research on chronic diseases in Ukraine. Based on Medline indexed publication rates on cardiovascular diseases between 1991 and 2001, the study calculated the publications rates to be on average 14 times lower in the group of countries including Ukraine, Belarus, Estonia, Hungary, Kazakhstan, Latvia, Lithuania, Republic Moldova and Russia than in Western Europe (Powles et al. (2005), p. 4).

The limited range of research topics, utilized designs and methodologies, means of analysis may also be directly related to the limited opportunity to conduct research of significant scope. A vast majority of scientific studies in Ukraine are therefore based on routinely collected data in medical records. An outcome of this is that epidemiological studies are often clinical; emphasizing a medically defined population, as opposed to statistically formulated disease trends derived from examination of larger population categories.

Limited access to foreign publications and journal articles reinforce the low quality of research as many authors are unable to refer to foreign publications and only cite studies in Ukrainian and Russian language (WHO/UNAIDS/UNDP (2010), p. 20). The lack of research databases in university libraries, the National Library and other relevant sources of information and high cost of articles was a concern expressed by many during the two workshops.

A further fundamental problem in Ukraine is the uncondusive environment for publishing. Firstly, the number of trustworthy journals devoted to epidemiological research, public health and/or medicine in the region is low, limiting the possibilities for publishing. Until recently, Ukraine did not have a single journal devoted to epidemiological research, whose standards would equal that of western epidemiological journals. In addition, workshop participants were congruent about the main limitations in research and publishing in Ukraine: firstly, lack of funding limits the scope and quality of conducted research and secondly, journals in the region often charge author fees, limiting scientist opportunities to publish in them.

None of the workshop participants had published in international journals, the main barriers mentioned being English language, differences in epidemiologic terminology, research requirements and standards and not knowing how to approach or interact with editors.

### **Conservative attitudes towards prevailing system and need for change**

Another notable observation was the general acceptance of the prevailing theories, ideas and practices pertinent to the soviet approach to disease prevention among the study subjects. Although some were aware of the differences between the post-Soviet approach to prevention and public health concept in the west, the common belief is that the approach followed in Ukraine is the most effective for the prevailing health situation in the country.

With regard to the clinical orientation of training in preventive medicine and sanitation, epidemiology in particular, the interviewees and workshop participants unanimously perceived this as an appropriate approach. Several study subjects said: *“this is normal, since epidemiology is meant for medical students”*. The opinion held by one interviewed student was that *“it might in fact be a better approach that epidemiology is dealt with by doctors with a specialized orientation rather than people with a non-medical background”*. One of the interviewed epidemiology teachers was of the opinion that *“non-medical topics should in any case be dealt with by other departments; they do not belong in epidemiology”*. There was also a very defensive attitude towards the foci on communicable diseases observed among the study subjects and it was clear that prevention of infectious diseases was seen as a priority. The post-Soviet

approach to prevention is held in high regard and as expressed by one of the interviewees: *“the Soviet system should be given more credit and used as an example abroad.”*

These attitudes and opinions imply that not only is there a lack of understanding of contemporary concepts and practice, but also that the benefits of the post-Soviet approach to prevention are strongly ingrained even among the younger generation of specialists and its disadvantages are not fully accepted. They also indicate that there may be reluctance towards promoting any development of the system.

Notwithstanding the above observations, some components of the current preventive medicine and epidemiology education were seen as limited by the study participants. The short time dedicated to practical training in any topic was a matter of great concern among students and teachers alike. One of the interviewed students also expressed dissatisfaction with regard to *“lack of health promotion and health policy in the context of epidemiology and prevention of some specific diseases, such as tuberculosis”*. The suggestion was *“...to have separate classes on global problems and political issues of health”*. One of the teachers desired *“more international cooperation between Ukrainian and western medical Universities, public health schools and institutions etc. to enable intercultural experiences and exchange of knowledge...”* and asked for advice on how to establish relationships with international institutions.

## **DISCUSSION AND CONCLUSIONS**

This study has aimed to point out some of the main challenges for public health education in Ukraine. The findings confirm that the dis-



ease prevention approach that was adapted in the Soviet times is strongly reflected in contemporary public health thinking and education in Ukraine and the system has not been adequately reconciled with new and more complex public health challenges. Emphasizing medical approaches at the cost of population-based health promotion and neglecting epidemiology of non-communicable diseases are an example of the legacy of the soviet model and a persistent feature of public health training in today's Ukraine, the consequences of which have been detrimental to health practices in the country. A factor that seriously aggravates these limitations and impedes development is the conservative mindset among students as well as academic staff.

One major limitation for the research was the general lack of studies on public health education specifically in Ukraine. Thus it had to rely predominantly on regional studies for a background on the situation. Hence, the results are inevitably a simplification of the complex issues that have an impact on the public health thinking and education in the country and generalizations should only be made with caution. Moreover, the research was limited to sources in English language, which constrained the literature review and may have influenced the accuracy of information collected from workshops and interview participants, all of whom were native Ukrainian and/or Russian speakers.

Nevertheless, the findings do provide some important insights into the main problems and intervention areas and hopefully give impetus for further, in-depth and larger-scale research in this area. This study was limited to mainly looking at epidemiology training, as the cornerstone of public health educa-

tion. A future study might apply a wider focus, including the integration of preventive medicine throughout all departments of medical education e.g. social medicine, psychology etc. Post-graduate studies should also be taken into account. Moreover, it could be useful to explore the linkages and causal relationship between structure and organization of public health education and the performance of health system in more detail. A compilation of best-practices in reforming the current model of public health, including workforce education in other former Soviet Union countries is also needed.

Improving the health system in Ukraine will require a vast change in thinking on all levels, including government, academia and the public. A wider definition of population health and subsequently a series of changes in public health workforce development are sorely needed. In the West, contemporary public health approaches have been increasingly influenced by the so called "New Public Health" (NPH) concept, described by Tulchinsky and Varavikova (2010) as "*a contemporary application of a broad range of evidence-based scientific, technological and management systems implementing measures to improve the health of individuals and populations. Its main objectives are the political and practical application of lessons learned from past successes and failures in disease control and the promotion of preventive measures to combat existing, evolving and re-emerging health threats and risks*" (Tulchinsky & Varavikova (2010), p. 25). Essentially NPH may be seen as an extension of earlier public health thinking, moving from a focus on individual behaviour and risk-factors to a more comprehensive approach, which stresses the protection and promotion of health

of the individual *in addition* to the health of populations. In line with this, the approach seeks to address contemporary health issues such as equitable access to health services, the environment, political governance and social and economic development. This has invariably meant a more multidisciplinary approach to public health, involving in addition to physicians also sociologists, health economists, and health promotion specialists (Tulchinsky & Varavikova (2009), p. xxiv).

The relevance of this approach to Ukraine is without doubt significant and would certainly offer an appropriate model for development of its public health workforce. It should, however, be emphasized that whether change means expanding the content of courses in preventive medicine and epidemiology training in medical schools to add more of "New Public Health", or introducing separate training programmes, such as post-diploma or master-level degree in public health in different settings, this does not imply the need for a wholesale elimination of the post-Soviet prevention approach. While modern societies require that public health takes non-medical dimensions i.e. social determinants into account, contemporary public health thinking also emphasizes that rising levels of chronic disease requires close interaction between medicine and public health. This thinking has become prevailing in western countries and manifested itself in comparatively advanced health literacy and health systems.

Specifically, a curricula reform in Ukrainian medical universities would need to involve an increase in hours dedicated to epidemiology and other public health related topics, or a more appropriate balance of study topics at the very least. Additional hours would be best

used for covering more contemporary public health issues in Ukraine, such as non-communicable diseases, and non-medical topics like health policy and health promotion etc. Moreover, current training materials need to be reviewed and brought up to contemporary standards. Curriculum reform would also need to ensure a linkage between training and research, include much stronger emphasis on epidemiologic research and research skills. At the same time opportunities for publishing nationally, regionally and internationally must be greatly enhanced, to enable wide dissemination of national data. Critical evaluation and rigorous internal and external research of current approaches, their impact and performance is essential for informing decision makers and the public about the need for reforming public health workforce development and strengthening health systems. Without quantitatively and qualitatively meaningful research, there will be little scope for evidence-based planning and programming for health system improvements and stemming the present premature loss of life through preventable diseases in the country.

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## REFERENCES

- Adany, A., Villerusa, A., Bislimovska, J. & Kulzhanov, M. (2011). Public Health Education in Central and Eastern Europe, and Central Asia. *Public Health Reviews*. 33. 1. 105-133. URL: <http://www.publichealthreviews.eu/>
- Chenet, L. & Telishevskaya, M. (2000): Epidemiology, medical demography and data quality issues in the former Soviet Union. *Journal of Epidemiology & Community Health* 2000.54.722-723. doi:10.1136/jech.54.10.722
- Djibuti, M., Gotsadze, G., Mataradze, M. & Menabde, G. (2010): Human resources for health challenges of public health system in Georgia. *Human Resources for Health*. 2008; 6.8.1-7. doi:10.1186/1478-4491-6-8
- Goodman, J., Overall, J. & Tulchinsky, T. (2008): Public Health Workforce Capacity Building. Lessons Learned from "Quality Development of Public Health Teaching Programmes in Central and Eastern Europe". ASPHER Publication No.3. URL: <http://2011.aspher.org>
- Gotsadze, G., Chikovani, I., Gogvadze, K., Balabanova, D. & McKee, M. (2010). Reforming sanitary-epidemiological service in Central and Eastern Europe and the Former Soviet Union: an exploratory study. *BMC Public Health*. 10.440. 1-10. doi:10.1186/1471-2458-10-440
- Lekhan, V., Rudi, V. & Richardson, E. (2010). Ukraine: Health System Review. Health Systems in Transition. 12(9). Copenhagen, Denmark: WHO Press. URL: <http://www.euro.who.int>
- Maier, C. & Martin-Moreno, J (2011). Quo vadis SANEPID? A cross-country analysis of public health reforms in 10 post-soviet states. *Health Policy*. 102. 18-25. doi:10.1016/j.healthpol.2010.08.025
- Müller-Nordhorn, J., Holmberg, C., Dokova, K.G., Milevska-Kostova, K., Chicin, G., Ulrichs, T., Rechel, B., Willich, S.N., Powles, J. & Tinnemann, P. (2012). Perceived challenges to public health in Central and Eastern Europe: a qualitative analysis. *BMC Public Health*. 12.311.1-8. doi:10.1186/1471-2458-12-311
- Powles, J., Zatonksi., Vandeer Hoorn, S. & Ezzati, M.(2005). The contribution of leading diseases and risk factors to excess losses of healthy life in eastern Europe: burden of disease study. *BMC Public Health*. 5.116.1-6. doi:10.1186/1471-2458-5-116
- Tarantino, L., Chankova, S., Preble, E., Rosenfeld, J. & Routh, S. (2011). Ukraine Health System Assessment 2011. Health Systems 20/20 Project. Bethesda, MD, US: Abt Associates
- Tillinghast, J.S. & Tchernjavskii, V.E. (1996). Building health promotion into health care reform in Russia. *Journal of Public Health Medicine*. 18.4.473-477. doi:10.1093/oxfordjournals.pubmed.a024547
- Tulchinsky, T.H. & Varavikova, E.A. (1996): Addressing the epidemiologic transition in the former Soviet Union: strategies for health system and public health reform in Russia. *American Journal of Public Health*. 86.3.313-20. doi:10.2105/AJPH.86.3.313
- Tulchinsky TH, Varavikova EA (2009): The New Public Health.2nd Edition. Burlington, MA, US: Elsevier Academic Press.
- Tulchinsky TH, Varavikova EA (2010): What is the "New Public Health"? *Public Health Reviews*. 32.1.25-53. URL: <http://www.publichealthreviews.eu/>
- Paccaud, F., Weihofen, A., & Nocera, S. (2011): Public Health Education in Europe: Old and New Challenges. *Public Health Reviews*. 33.1.66-86. <http://www.publichealthreviews.eu/>
- WHO (2006). World Health Report 2006. Working Together for Health. Geneva, Switzerland: WHO Press. URL: <http://www.who.int>
- WHO/UNAIDS/UNDP (2010): A systematic review of operational research into HIV, AIDS and STIs conducted in Ukraine in 1998-2006 and development of an operational research strategy in the context of implementation of national goals towards Universal Access to Prevention, Treatment, Care and Support by 2010. (unpublished)