

Co-funded by the  
Erasmus+ Programme  
of the European Union



## **ProInCa**

**Promoting the Innovation Capacity of Higher Education in Nursing during  
Health Services' Transition**

---

### **D2.2.1**

## **Gap analysis - identification of gaps in evidence based nursing education in Kazakhstan**

**WP2.2. Efficiency and quality by evidence based nursing**



Mateja Bahun, MSc (Nursing), BSc (educ), RN, Senior Lecturer, Sedina Kalender Smajlović, MSc (Nursing), RN, Senior Lecturer, Head of Nursing Department, Katja Pesjak, PhD, Assistant professor, Almira Akhmetova, MD, Head of Dermatovenerology and Cosmetology Department, Zhuldyz Zhetmecova, MSc (Nursing), Kassym Laura, MD, PhD

22.02.2019

# Table of Contents

|  |    |
|--|----|
| Summary .....  | 3  |
| 1 Theoretical background .....   | 3  |
| 2 Best practices of EBN implementation in Kazakhstan .....                                       | 11 |
| 2.1 Material and methods .....   | 11 |
| 2.2 Results .....  | 13 |
| 3 The analysis of SCES in Kazakhstan – competencies .....  | 16 |
| 4 Syllabuses analysis in academic bachelor and master levels of nursing education programs ..... | 23 |
| 5 Gap analysis in academic bachelor between the SCES and curriculum content .....                | 27 |
| 6 Gap analysis in master between the SCES and curriculum content .....                           | 33 |
| 7 Gap analysis in master degree between the SCES and curriculum content .....                    | 38 |
| 8 Advancement of EBN in education process and conclusions .....                                  | 40 |
| References .....   | 43 |

## Disclaimer:

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

## Summary

The gap analysis report presents knowledge and attitudes of academics towards EBN and already existing data on the subject (discipline) evidence based practice/nursing in all nursing departments in Kazakhstan Medical Universities on Bachelor and Master level of education. Part of the report are also recommendation for developing national educational materials on evidence based nursing (EBN) which are presented in the conclusion part.

The aim of gap analysis was to provide information on existing evidence based nursing competence condition in the curriculum, content of course descriptions, syllabus of academic and applied bachelor, master level in nursing. The content analysis of the curriculums and course descriptions (State educational standards-SCES) and syllabuses of academic and applied bachelor, master level and their comparison was done. In the analysis for Academic Bachelor level can be seen that in this moment and structure only 3 subjects in Kazakhstan everyday education practice respond to the National educational Standard demands/suggestions. SCES predicts 6 subjects connected to EBN. In the analysis for Master level can be seen that 2 faculties out of 4 include all 7 subjects that are demands/suggestions by SCES. Subjects do not have the content which would in full hours/credits respond to EBN. Though, the subjects have specific fragments of content that are directly/important linked to EBN content.

Further, major priorities for the advancement of EBP in education process for nursing students were determined.

## 1 Theoretical background

Evidence based practice is life-long problem-solving approach to the delivery of health care that integrates the best evidence from well- designed studies and integrates it with a patient's preferences and values and a clinician's expertise, which includes internal evidence gathered from patient data (Melnyk, et al., 2014). As the authors (Ely et al., 2005; Pravikoff, 2005; Titler, 2009; Melnyk, et al., 2012; Heikkila at al., 2016) establish, the main barriers for implementation of EBP are high time consumption, inadequate EBP knowledge and skills, rigorous teaching process,



organizational culture, lack of mentors and resources, resistance of leaders or colleagues, poor English skills, a heavy workload, a lack of internet access or databases access and insufficient time to read research, critically appraise evidence and implement new ideas in the workplace. The same Kamalbekova and Kalieva (2015) find out that in Evidence-Based Medicine let barriers are similar (lack of funding, access to reliable sources of information, websites, outdated research methodology skills, lack of skills in critical evaluation of information; tradition of authoritarian relationships, use of past experience,...). Knowledge of Evidence-Based Medicine, skills to perform searches for scientific data, to evaluate their validity and to transform scientific data into practical solutions are necessary for health workers in their daily activities. This culture needs to be rooted in modern medical education.

Even though multiple positive outcomes are the result of evidence-based care, including improvements in healthcare quality, safety, and costs, it is not consistently delivered by clinicians in healthcare systems throughout the world (Melnik et al., 2018a). Since becoming independent, Kazakhstan has undertaken major efforts in reforming its post-Soviet health system. Two comprehensive reform programmes were developed in the 2000s: the National Programme for Health Care Reform and Development 2005-2010 and the State Health Care Development Programme for 2011-2015 Salamatty Kazakhstan. Changes in health service provision included a reduction of the hospital sector and an increased emphasis on primary health care. However, inpatient facilities continue to consume the bulk of health financing. Partly resulting from changing perspectives on decentralization, levels of pooling kept changing. After a spell of devolving health financing to the rayon level in 2000-2003, beginning in 2004 a new health financing system was set up that included pooling of funds at the oblast level, establishing the oblast health department as the single-payer of health services. Since 2010, resources for hospital services under the State Guaranteed Benefits Package have been pooled at the national level within the framework of implementing the Concept on the Unified National Health Care System. Kazakhstan has also embarked on promoting evidence-based medicine and developing and introducing new clinical practice guidelines, as well as facility-level quality improvements. However, key aspects of health system performance are still in dire need of improvement. One of the key challenges is regional inequities in health financing, health care utilization and health outcomes, although some



improvements have been achieved in recent years. Despite recent investments and reforms, however, population health has not yet improved substantially (Katsaga, et al., 2012).

The quality of scientific research in Kazakhstan remains poor, which is partly due to years of underinvestment in facilities and equipment (Ministry of Health 2004). The National Programme of Health Care Reform and Development for 2005–2010 envisages the development of medical science through the following activities:

- development and application of modern technologies for disease prevention, early detection, treatment and rehabilitation;
- fundamental and applied medical research in areas identified by the Ministry of Health;
- strengthening the links between medical research and its practical applications in the health sector;
- development of international partnerships;
- integration of medical science, education and practice;
- monitoring and evaluation of health reform initiatives;
- implementation of evidence-based medicine ) (Kulzhanov, Rechel, 2007).

Kamalbekova and Kalieva (2015), conducted study at the Medical University of Astana, where the Scientific and Educational Center of Evidence-Based Medicine was established in 2010 with the help of the corresponding project of the World Bank. The participants of the study were the faculty trained in Evidence-Based Medicine at the workshop "Introduction to Evidence-Based Medicine" for the period of 2010-2015 years. There were a total of 16 workshops during the period, and 323 employees were trained. All participants were asked to complete questionnaire two times: before the training - pre-training (to determine the initial level of a listener) and after the training - post-training (to determine the acquired level and get the feedback). Questionnaires were prepared in such a way, that the majority of questions before and after training were identical. Thus, it provided a clear picture of the effectiveness of training. Questions in the survey were open-ended so that the respondents had the opportunity to freely and fully express their views. Only 30-35% of respondents gave correct answers to the questions on understanding EBM, understanding study designs, randomization. There were no correct or complete answers to the question on study classification. Again, 35% of respondents provided correct answer to the question about the stages of decision-making process from the perspective of EBM, 65% - provided no answer. One fourth (25%) of the respondents preferred using printed literature. Only very few respondents indicated Cochrane Library, Medline (PubMed), Tripdatabasa as preferred Internet sources of information,



with 40% indicating Google and 60% - other sources. The results of post-training survey showed that nearly 90% of the respondents gave correct answers to all the questions. 56% of the respondents answered that they had not encountered any difficulties. The other 44% faced the difficulties associated with implementation of Evidence-Based Medicine: lack of understanding by students, low knowledge survival rate among students, too many questions from the students, difficult disputes and discussions. To the question: «Have you encountered difficulties in implementing the principles of Evidence-Based Medicine in practical health-care?» only 37.5% of the respondents answered that they had not encountered difficulties. But the remaining 62.5% of the respondents faced the problems and difficulties in implementing the principles of evidence-based medicine in their practice. These were: failure in implementing, lack of understanding on the part of colleagues, commitment to traditional obsolete methods of treatment, discrepancy between some of the existing standards of diagnosis and treatment and principles of evidence-based medicine. 67% of the respondents answered that there were end products - mainly marked by the publication of articles and abstracts, including international publications, and participation in the working group on the revision and development of clinical protocols.

In an attempt to accelerate the implementation of evidence-based practice (EBP) across the United States, an invitational Interprofessional National EBP Forum to determine major priorities for the advancement of EBP was held during the launch of the newly established Helene Fuld Health Trust National Institute for Evidence-Based Practice in Nursing and Healthcare at The Ohio State University College of Nursing. Findings from a pre-Forum survey (n = 47) indicated ongoing low implementation of EBP in U.S. healthcare settings. These findings were shared with leaders from 45 organizations and agencies who attended the Forum. Breakout groups on practice, education, implementation science, and policy discussed the findings and responded to a set of standardized questions. High-priority action tactics were identified, including the need for: (a) enhanced reimbursement for EBP, (b) more interprofessional education and skills building in EBP, and (c) leaders to prioritize EBP and fuel it with resources. The delivery of and reimbursement for evidence-based care must become a high national priority. Academic faculty across all healthcare disciplines need to teach EBP, healthcare systems must invest in EBP resources, and payers must attach reimbursement to care that is evidence-based. An action collaborative of the participating



organizations has been formed to accelerate EBP across the United States to achieve the quadruple aim in health care (Melnyk, et al., 2018a).

A cross-sectional descriptive study was conducted by authors (Melnyk, et al., 2018b) that gathered data from an anonymous online survey of practicing nurses throughout the U.S. Measures tapped EBP knowledge, beliefs, culture, mentorship, implementation, and reported competency for each of the 13 EBP competencies for practicing nurses and an additional 11 competencies for advanced practice nurses from his 2013 article (Melnyk, 2013). A total of 2,344 nurses completed the survey from 19 hospitals or healthcare systems. Overall, the nurses reported that they were not yet competent in meeting any of the 24 EBP competencies. Younger nurses and those with higher levels of education reported higher EBP competency ( $p < 0.001$ ). The EBP competency scores were not significantly different between nurses in Magnet and non-Magnet designated organizations ( $p = 0.28$ ). There were strong positive associations between EBP competency with EBP beliefs ( $r = 0.66$ ) and EBP mentorship ( $r = 0.69$ ), a moderate positive association between EBP competency and EBP knowledge ( $r = 0.43$ ), and a small positive association between EBP competency and culture ( $r = 0.29$ ).

There is a tremendous need to enhance nurses' skills so that they achieve competency in EBP in order to ensure the highest quality of care and best population health outcomes. Academic programs should ensure competency in EBP in students by the time of graduation and healthcare systems should set it as an expectation and standard for all clinicians (Melnyk, et al., 2018b). Competence is defined as the ability to do something well; the quality or state of being competent (Merriam Webster Dictionary, 2012).

Although there is a general expectation of healthcare systems globally for nurses to engage in EBP, much uncertainty exists about what exactly that level of engagement encompasses. Lack of clarity about EBP expectations and specific EBP competencies that nurses and APNs who practice in real-world healthcare settings should meet impedes institutions from attaining high value, low-cost evidence-based health care. The development of EBP competencies should be aligned with the EBP process in continual evaluation across the span of the nurses' practice, including technical skills in searching and appraising literature, clinical reasoning as patient and family preferences



are considered in decision making, problem-solving skills in making recommendations for practice changes, and the ability to adapt to changing environments (Burns, 2009).

Recently, work has been conducted to establish general competencies for nursing by the Quality and Safety Education for Nurses (QSEN) Project, which is a global nursing initiative whose purpose was to develop competencies that would “prepare future nurses who would have the knowledge, skills, and attitudes (KSAs) necessary to continuously improve the quality and safety of the healthcare systems within which they work” (QSEN, 2013). This project has developed competency recommendations that address the following practice areas:

- Patient-centered care;
- Teamwork and collaboration;
- Evidence-based practice;
- Quality improvement;
- Safety;
- Informatics.

In addition, competencies related to the academic setting have been developed. The National League for Nurses (NLN) developed competencies for program levels within nursing education. Definitions, guides to curricular development, and criteria for use in developing certification and continuing education programs is a focus for faculty and administrators in academic settings (NLN, 2013).

The aim of Melnyk ,et al., 2014 was to develop a clear set of competencies for both practicing registered nurses and APNs in clinical settings. These competencies can be used by healthcare institutions in their quest to achieve high performing systems that consistently implement and sustain evidence-based care.

Kazakhstan describes a need for a training system of specialist in nursing care at all levels in accordance with European directives (Governmental regulation RK no 752 30 June 2014. About the passage of the plan of action on the realization of the concept in inclusion of Kazakhstan into number of 30 most developed states of the world for 2014 - 2020, cited in Heikkila at al., 2016). Nurse educators have a pivotal role in supporting students in accessing, understanding and appraising research and encouraging its utilisation in practice (Wilson et al., 2015). Wilson and



others (2015) also establish that more highly educated and certified RNs had higher ratings for EBP readiness as measured by self-reported ability, desire, and frequency of behaviours. Nurses with a bachelor's degree or higher reported fewer barriers to EBP.

The purpose of Heikkila and co-workers (2016) study was to describe and compare the current state of EBP from the point of view of Kazakh nurses and nurse educators. And to seek information about nurses' and nurse educators' awareness of, knowledge of, and attitudes toward EBP and to explore the factors that influence the adoption of EBP in Kazakhstan.

**Evidence-based practice competencies as established by Melnyk, Gallagher-Ford, and Fineout-Overholt in 2013 for practicing registered professional nurses are:**

1. Questions clinical practices for the purpose of improving the quality of care.
2. Describes clinical problems using internal evidence.\* (internal evidence\* = evidence generated internally within a clinical setting, such as patient assessment data, outcomes management, and quality improvement data).
3. Participates in the formulation of clinical questions using PICOT\* format. (\*PICOT = Patient population; Intervention or area of interest; Comparison intervention or group; Outcome; Time).
4. Searches for external evidence\* to answer focused clinical questions. (external evidence\* = evidence generated from research)
5. Participates in critical appraisal of pre appraised evidence (such as clinical practice guidelines, evidence-based policies and procedures, and evidence syntheses).
6. Participates in the critical appraisal of published research studies to determine their strength and applicability to clinical practice.
7. Participates in the evaluation and synthesis of a body of evidence gathered to determine its strength and applicability to clinical practice.
8. Collects practice data (e.g., individual patient data, quality improvement data) systematically as internal evidence for clinical decision making in the care of individuals, groups, and populations.
9. Integrates evidence gathered from external and internal sources in order to plan evidence-based practice changes.
10. Implements practice changes based on evidence and clinical expertise and patient preferences to improve care processes and patient outcomes.
11. Evaluates outcomes of evidence-based decisions and practice changes for individuals, groups, and populations to determine best practices.
12. Disseminates best practices supported by evidence to improve quality of care and patient outcomes.
13. Participates in strategies to sustain an evidence-based practice culture.

**Evidence-based practice competencies for practicing advanced practice nurses:**



***All competencies of practicing registered professional nurses plus:***

14. Systematically conducts an exhaustive search for external evidence\* to answer clinical questions. (external evidence\*: evidence generated from research)
15. Critically appraises relevant pre appraised evidence (i.e., clinical guidelines, summaries, synopses, syntheses of relevant external evidence) and primary studies, including evaluation and synthesis.
16. Integrates a body of external evidence from nursing and related fields with internal evidence\* in making decisions about patient care. (internal evidence\* = evidence generated internally within a clinical setting, such as patient assessment data, outcomes management, and quality improvement data)
17. Leads transdisciplinary teams in applying synthesized evidence to initiate clinical decisions and practice changes to improve the health of individuals, groups, and populations.
18. Generates internal evidence through outcomes management and EBP implementation projects for the purpose of integrating best practices.
19. Measures processes and outcomes of evidence-based clinical decisions.
20. Formulates evidence-based policies and procedures.
21. Participates in the generation of external evidence with other healthcare professionals.
22. Mentors others in evidence-based decision making and the EBP process.
23. Implements strategies to sustain an EBP culture.
24. Communicates best evidence to individuals, groups, colleagues, and policy makers.

In an attempt to accelerate the implementation of evidence-based practice in nursing across the Kazakhstan, we are addressing the needs of teachers by analysing the State educational standards (SCES) for bachelor and master degree nursing and current curriculums available for ENP. By this analyse we conducted GAP analysis between both of them and by that established ground for preparing study materials for Kazakhstan teachers to teach EBN.

**Goal:** A GAP analysis will compare the present state of competency development to the state that a SCES standard commands. We need to determine major priorities for the advancement of EBP in education process for nursing students. We want to find strengths and numerous competency domains deficiencies in to competency programs and areas with deficiencies in curriculums.

**Tasks:**

1. To conduct systematic literature review on the Best practices of EBN in Kazakhstan.
2. To conduct a non experimental qualitative research with analysis on the presence of evidence based practice competencies in the state common educational standards of high education of Kazakhstan .



3. To do the content analysis of the syllabuses of 5 Kazakhstani universities on the levels of master and academic bachelor. The medical colleges refused the proposal to take part in the research, so no data analysed on the level of applied bachelor nursing.
4. To conduct the GAP analysis between curriculum content analysis and SCES analysis by method to assess core competency development in the curriculum (Fater, 2013).

## 2 Best practices of EBN implementation in Kazakhstan

Kazakhstani authors of GAP-analysis carried out literature review for search, analysis and synthesis of data about experiences of EBN implementation into the academic and research processes, routine clinical practice as well. For that proposes had been developed the next clinical question “What approaches, based on evidence based nursing principal, leading to the improvement of nursing education, clinical practice and science in Kazakhstan?”

### 2.1 Material and methods

The aim was to find evidence based approaches of nursing specialists in KZ.

The scope of the search is the implementation of evidence based nursing principles in education, clinical practice and science. What evidence based nursing and nursing research approaches used by nursing specialists in Kazakhstan lead to improvement in nursing education, clinical practice and science? Approved the next list of keywords to search through the databases: see table 1.

*Table 1. Key words and their synonyms list*

| Nursing             | Evidence               | Education | Competences         | Kazakhstan             |
|---------------------|------------------------|-----------|---------------------|------------------------|
| Nurse               | Research               | Learning  | Professional        | Republic of Kazakhstan |
| Nurses              | Science                | Teaching  | Clinical competence | Kazakh                 |
| Nursing students    | Methodology            | Academic  |                     | Central Asia           |
| Nurse practitioners | Evidence based nursing | Program   |                     |                        |
| Nursing personnel   | Evidence-based nursing | Training  |                     |                        |

|  |  |           |  |  |
|--|--|-----------|--|--|
|  |  | Activity  |  |  |
|  |  | literacy  |  |  |
|  |  | Work shop |  |  |

As the information sources for literature review served databases, web-sites, search systems, electronic versions of Kazakhstani and independent countries union's per-review journals, what available in Semey state medical university. Criteria of inclusion were: Kazakh, Russian, English language of publications, period of publications from January 2009 till October 2018, availability of full text. Table 2 shows available used sources, search syntaxes and links number.

Table 2. Sources, search syntaxes and links number

| Source                           | Search syntaxes   | Number of links/Number of relevant links |
|----------------------------------|---|--|
| Source                           | Search syntaxes   | Number of links/Number of relevant links |
| www.ncbi.nlm.nih.gov/pubmed      | ("Nursing"[Mesh]) AND "Kazakhstan" [Mesh]                             | 1/1                                      |
|                                  | ((("Nurses" [Mesh] ) AND "Research" [Mesh])AND "Kazakhstan"[Mesh]     | 0  |
|                                  | (("education"[Subheading] AND "Nursing"[Mesh]) AND "Kazakhstan"[Mesh] | 0  |
|                                  | ("Nursing"[Mesh]) AND "Central Asia" [Mesh]                           | 5/1                                      |
|                                  | Nursing AND Kazakhstan  | 18/2                                     |
| https://link.springer.com/search | Nursing AND Kazakhstan  | 137/1                                    |
|                                  | Nursing AND Evidence AND Kazakhstan                                   | 99/1                                     |
| https://scholar.google.com/      | Nursing AND Evidence AND Kazakhstan                                   | 5820/2                                   |
| https://elibrary.ru              | Nursing AND Evidence AND Kazakhstan                                   | 34/1                                     |
| https://www.medsestre.ru/        | Home page-information resources-materials of conferences              | 0  |
| Nauka I Zdravoohranenie          | Nursing, nurse, nursing specialist,                                   | 1/1                                      |
| Vestnik ZKGMU                    | evidence based medicine, evidence                                     | 13/1                                     |

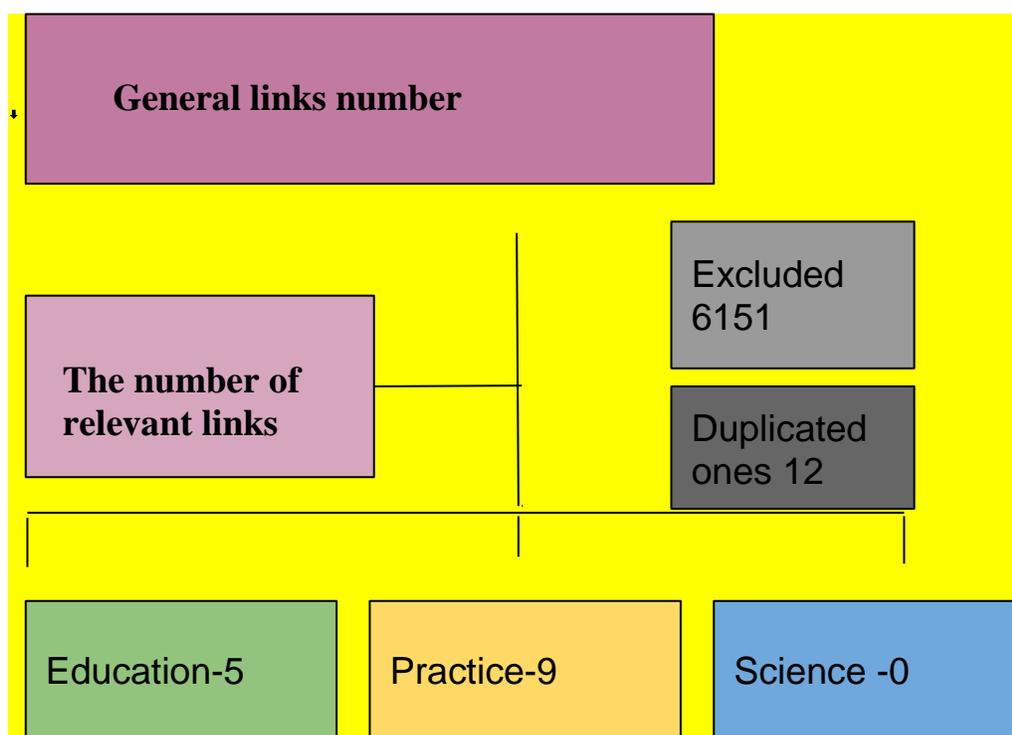


|                              |  |       |
|------------------------------|--|-------|
| Vestnik KazNMU               | based nursing, research, competences, education, education program | 23/14 |
| Meditcina                    |  | 1/1   |
| Mejirbike isi                |  | 0/0*  |
| Meditcina I Ekologiya        |  | 2/0   |
| Astana Meditsinalyk Zhurnaly |  | 3/0   |
| Meditinskaya sestra          |  | 0/0*  |
| Sestrinskoe delo             |  | 0/0*  |

\* - the sources had been included to research protocol, but were not available while writing the protocol

Picture 1 presents the algorithm of paper selection for including to the review.

Picture 1: “Paper selection for including to the review”



## 2.2 Results

The greatest number of papers had been found on block “Practice”. It’s needed to highlight, that results of this direction are contradictory in character. So, in the paper of T.Kh. Khabiyeva(2017) author shows the results of survey of 100 nursing specialists of Almaty city’s medical and preventive organizations. It’s been discovered that the respondents expressed that they are not

ready for the innovative changes in healthcare sphere and in behalf of administration there is no exact developed strategy of innovative management(1). In another hand, it's hard to discourse about acceptability of new approaches I nursing process if there is a necessity of elementary material resources. In the research of Zh.M. Utepbergenova and co-authors (2017) investigated the satisfaction by material and technical equipment at work place of Almaty and Astana cities primary health nurses(n=253). Every 5<sup>th</sup> nurse expressed the displeasure due to the lack of personal computers and 30,44% complained to the lack of stationary(2). Observation of nursing process in City Cardiologic center of Almaty leaded the authors to the opinion that the nursing actions standard could be enlarged in issue of patient's condition assessment and in the patients rehabilitation measures development as well. The researchers, underlined that, this requirements could be used for nurses only in case of planned, scientific-based approach of nursing care optimization(3).

In the literature exist positive examples of using the evidence based approaches in nursing. In the research of A.M.Iskakova and co-authors (2015) presented the successful activities of "Demey" capital's center of family medicine: for the realization of patient-centered approaches nurses have studied knowledge and skills of the communicative psychology(4). In the another study of A.M. Iskakova and co-authors (2016) carried out the survey among the nurses, who had independent and traditional practice(total 168 nurses). As the result revealed the statistically significant difference in between the rate of readiness of community nursing for healthy children at the age of 1 year in both groups.(70,2% in the group of independent consultation against of 51,4% in group of traditional consultation; p=0,019). At the traditional practice only 27,9% of respondents were willing to educate in the school of healthy lifestyle, when the same rate in the group of independent practice was 73,7%; p<0,001)(5).

An interesting research carried out in the palliative care nursing. Thus, in the observational paper of Kunirova et al. (2018) described the method of education of 200 specialists of health care, included the nurses, on courses and seminars of ELNEC(End of Life Nursing Education Consortium). However, the authors didn't give the data about the education results or their dissemination (6).



The lack of the information could be covered by the paper of B.Ferrel and co-authors (2010). Authors provided the monitoring of educational seminars on the palliative care for the nurses, what carried out in 2006 and 2008 in Austria. One representative of Kazakhstan among the 317 other country nurses took part in the first seminar only. After the arrival home the nurse read the lecture in her own organization of health care, where she worked and the translation of the seminar's materials had been done. In the same time, nurse from Slovenia, who was also alone representing her country, tried to implement the results of education to the practical and educational processes. She organized the master classes on ELNEC program, had been involved to the work group of palliative care optimization at the Ministry of Healthcare in Slovenia and included the materials of seminar to the educational course of Nursing College in Ljubljana(7).

The another successful utilization of the evidence based approach in practice was the implementation of Guideline in postpartum hemorrhages management in Prenatal center of South Kazakhstan area. One of the key results was the decreasing of the hysterectomy from 23.7% to the 8.1% cases at women with hemorrhage in postpartum period (8). Quite a rich was the program of organizational techniques optimization in nursing at University clinic of KazNMU by name of Asphendiyarov in 2014. By initiation of university rector, professor A.A. Akanov had been proposed and implemented the expansion of nursing powers, developed the system of nursing audit, created and peer-reviewed 3 nursing guidelines(9).

Known some examples of using the principles of evidence based nursing in educational field. Thus, in the paper of Riklifs et al.(2018) had said about the start of the ProInCa project in 2017, the aim of which is not only the modernization of the nursing education, but the increasing of the nursing status and role in the healthcare system(10). In the research of U.A. Altynbekova (2016) highlighted the importance of strict competences on the levels of applied and academic bachelor nursing and the forms of their evaluation (13).

The necessity of the knowledge and skills of evidence based practice had been revealed in the research of Dauletyarova and co-authors (2015). Were examined 83 workers of the Maternity house #2 in Semey city, 43 of them were the midwives. Most of the midwives (72,1%) were willing to learn the evidence based practice courses. In general, the evaluation of knowledge of medical



personnel showed that the level of literacy in the questions of evidence based practice was unsatisfied 43,4% among all of the respondents.

The literature review revealed the next problems: deficiency of data on the implementation of evidence based nursing to the different fields, contradictory character of findings. In addition, the most qualitative and informative researches were carry out by the foreign authors, what leads to the idea about the necessity of close partnership with foreign clinical, educational and scientific centers. Authors of the review hope that the work with foreign colleagues in some projects (ProInCa, Kazakhstani-Finnish master level courses in nursing) will help to optimize the quantity and quality of nursing research, to build the leadership capacity in nursing and increase the number of stakeholders in evidence based nursing.

### 3 The analysis of SCES in Kazakhstan – competencies

State common educational standards of high education of Kazakhstan analyzed, conducted a non-experimental qualitative research with analysis on the presence of evidence based practice competencies.

**Aim:** to study the evidence based practice competencies presence in SCES of Kazakhstani nursing programs

With use of the same keywords (evidence based, nursing, practice, competences, research, critical thinking and science) and analysed curriculums of study programs on bachelor and master level of education in nursing (hours, type of subject, elective and compulsory, credit points, content description, ...) and were looking for subjects linked to the EBN practice competencies.

According to State obligatory standards and model of professional training programs (2015) and changes (2017) from the Ministry of health of the republic of Kazakhstan by order of the Minister of health Of The Republic Of Kazakhstan from June 29, 2017 year no. 471 we are determining how bachelor degree in nursing is ordered.



The master level program in nursing has 2 directions: scientific pedagogical and profile one, what determined by the order № 647 from 31,07,2015 “Postgraduate education for medical specialities”. It's important to say that in this document all the medical specialities have same competences and requirements for the graduation of master program. So, in 2017 the work group had been developed to create new educational standard in nursing master level, but it still not signed and registered yet by Kazakhstan Ministry of education.

In table 3 Nursing programs in Kazakhstan listed all the high education programs.

Table 3. Nursing programs in Kazakhstan

| Curriculum  | Duration             | The requirements for enrollment   | Document                  |
|---|----------------------|---|---------------------------|
| 030205 4<br>«Nursing»<br>Qualification<br>“Applied nursing” | 3 years 6 month      | General education or technical and professional education   | Order № 471 from 24.07.17 |
| 030205 4<br>«Nursing»<br>Qualification<br>“Applied nursing” | 1 year 6 month       | Technical and professional education on specialty 0302000-«General practice Nurse» «Specialized nurse» or 0301000 «Therapy» with qualification «Paramedic», with certificate of specialist «Nursing» and 3 year work experience | Order № 471 from 24.07.17 |
| 5B110100 «Nursing»  | 4 years              | General education or technical and professional education   | Order № 471 from 24.07.17 |
| 5B110100 «Nursing»<br>(short track)                         | 3 years and 10 month | Technical and professional education on specialty «Nurse» with work experience 3 years. «Nursing» Qualification “Applied nursing”   | Order № 471 from 24.07.17 |

Further qualitative content analysis had been conducted in order to specify the evidence based nursing practice competencies in the all levels of nursing education. For the content analysis had been used the same key words evidence based, nursing, practice, competences, research, critical thinking and science and found 1 competence on the level of applied bachelor and 2 competencies

in Academic bachelor levels. The both directions of master level has 4 competences related to the evidence based practice (see table 4).

Table 4. The findings of evidence based practice competencies in all levels of nursing education

| Curriculum  | Competences   |
|---|---|
| 030205 4<br>«Nursing» qualification<br>«Applied bachelor» | <p>PC-2 Research and evidence based nursing: planning and performing research in nursing , presenting the research results and implementing them in clinical practice, making decisions based on EBN</p> <p>PC-2.1 Interpretation of information and making decision on the basis of EBN, critical evaluates the information in the area of biomedical and nursing research, focused on development of advanced nursing technologies, making decisions on EBN.</p> <p>PC-2.2 Planning and carrying out the nursing research projects: demonstrates creativity in the planning of nursing research projects with further development, improvement of methodical documents on forming and realizing the nursing services</p> <p>PC-2.3 Effective dissemination of research results: Perform the effective scientific presentation of research results and implementing them into the clinical practice, present the different types of presentations and disseminates the research results to the different auditoriums.</p>  |
| 5B110100 «Nursing»<br>Academic bachelor                   | <p>PC-1 Demonstrates the advanced skills of safe patient centered nursing care using modern methods based on the principles of <b>evidence-based medicine</b>, is responsible for independent decision-making, actions and their documentation.</p> <p>PC-2 Scientific approach and evidence-based nursing practice</p> <p>Demonstrates management skills and organization of research in the field of nursing, is able to seek, apply and critically evaluate evidence-based information, develop standards and guidelines for the development of clinical practice, based on the principles of evidence-based medicine, for the implementation and evaluation of results.</p> <p>PC-2.1 Interpretation of information and decision making on the basis of evidence: able to critically evaluate and integrate information and evidence, make an informed decision, conduct a clinical assessment of planning, implementation of decisions based on the results of social, medical and nursing research for the implementation of evidence-based nursing practices</p> <p>PC-2.2 Planning and implementation of research projects in the field of nursing: identifies modern nursing problems of nursing practice, is able to plan research and implement research projects in the field of nursing to improve the provision of nursing services at different levels, taking into account the special needs of health care</p> |

|  |   |
|--|---|
|  | PC-2.3 Development of guidelines and standards for practice based on the principles of evidence-based medicine: demonstrates the skills of summarizing and integrating the results of scientific research with clinical experience and patient values, demonstrates the use of nursing research results in clinical practice and is able to develop clinical guidelines for patient care and advanced evidence-based nursing care methods   |
| 6M110300 «Nursing»<br>Scientific pedagogical | <ol style="list-style-type: none"> <li>1. Apply scientific methods of knowledge in professional activities</li> <li>2. Critically analyze existing concepts, theories and approaches to the study of processes and phenomena</li> <li>3. Has the skills of research activities in solving standard scientific problems</li> <li>4. Competent in the field of research in health care and scientific and scientific educational activities in universities</li> <li>5. To know the methods of qualitative and quantitative research</li> <li>6. To combine the results of the experimental scientific and analytical work in the master thesis, article, report, analytical letter.</li> </ol> |
| 6M110300 «Nursing»<br>profile                | <ol style="list-style-type: none"> <li>1. Apply scientific methods of knowledge in professional activities</li> <li>2. Critically analyze existing concepts, theories and approaches to the study of processes and phenomena</li> <li>3. Has the skills of research activities in solving standard scientific problems</li> <li>4. Competent in the field of research in health care and scientific and scientific educational activities in universities</li> <li>5. To know the methods of qualitative and quantitative research</li> <li>6. To combine the results of the experimental scientific and analytical work in the master thesis, article, report, analytical letter.</li> </ol> |

In order to see the development of this competences we revised the subjects what build the competences.

In SCES 2017 of **Applied Bachelor** we found 16 subjects with total 44 credits and 1980 hours that are linked with evidence based practice competencies, what you may observe in the Table 5. The **Academic bachelor SCES requires competences of EBP the 19 disciplines with total 72 credits and 3240 hours (see table 6).**

Table 5. The subjects what build the EBP competencies according to the SES 030205 4 «Nursing» qualification «Applied bachelor»

| Competence code | Discipline index | Discipline name  | Independent work of student | Classroom hours | Simulation | Practice | Hours credits |
|-----------------|------------------|--|-----------------------------|-----------------|------------|----------|---------------|
| PC2             | SD01             | Nursing profession in Healthcare system of KZ                | 45                          | 60              | 15         | 60       | 180/4         |
| PC2             | OPD 01           | Anatomy, physiology, pathology                               | 30                          | 15              | 90         | -        | 135/3         |
| PC2             | OPD 02           | Pharmacology, pharmacotherapy and medical calculations       | 30                          | 30              | 30         | -        | 90/2          |
| PC2             | SD 07            | Nursing aspect of reproductive health                        | 30                          | 15              | 18         | 72       | 135/3         |
| PC2             | SD09             | Gerontological nursing                                       | 20                          | 15              | 20         | 80       | 135/3         |
| PC2             | SD11             | Social significant diseases                                  | 30                          | 30              | 60         | 60       | 180/4         |
| PC2             | SD12             | Mental health and addiction                                  | 30                          | 30              | 30         | 45       | 135/3         |
| PC2             | SD16             | Patient education  | 30                          | 15              | -          | 45       | 90/2          |
| PC2             | SD 19            | Principles of planning and carrying out the nursing research | 45                          | 45              | -          | -        | 90/2          |
| PC2             | CP 05            | Practice Nursing in primary medical help                     | -                           | -               | -          | 180      | 180/4         |
| PC2             | Sd22             | Biostatistics  | 45                          | 45              | 45         | -        | 135/3         |
| PC2             | SD23             | E health system  | -                           | -               | 45         | -        | 45/1          |
| PC2             | SD 24            | Thesis performing  | 180                         | -               | -          | -        | 180/4         |
| PC2             | SD 26            | Evidence based nursing practice                              | -                           | -               | -          | 180      | 180/4         |



|     |       |  |    |   |   |   |      |
|-----|-------|--|----|---|---|---|------|
| PC2 | SD 27 | Registration and presenting the thesis | 90 | - | - | - | 90/2 |
|-----|-------|--|----|---|---|---|------|

Table 6. The subjects what build the EBP competencies according to the SES 5B110100 «Nursing» Academic bachelor

| Competence code | Discipline index | Discipline name                                | Independent work of student | Classroom hours | Simulation | Practice | Hours credits |
|-----------------|------------------|--|-----------------------------|-----------------|------------|----------|---------------|
| PC1             | OOD 04           | Kazakh /Russian language                       | 90                          | 180             | -          | -        | 270/6         |
| PC1             | OOD 05           | Informative-communication technologies         | 45                          | 90              | -          | -        | 135/3         |
| PC1             | BDO 03           | Anatomy physiology pathology                   | 75                          | 150             | -          | -        | 225/5         |
| PC2             | BDO 04           | Basis of evidence based nursing                | 20                          | 25              |            | 90       | 135/3         |
| PC1             | BDO 05           | Basis of surgery                               | 10                          | 10              | 10         | 60       | 90/2          |
| PC 2            | BDO 06           | Nursing care at acute and emergency conditions | 20                          | 15              | 10         | 90       | 135/3         |
| PC 1 PC 2       | BDO 06           | Basis of child diseases                        | 20                          | 15              | 10         | 90       | 135/3         |
| PC 2            | BDO 08           | Basis of obstetrics and gynecology             | 20                          | 15              | 10         | 90       | 135/3         |
| PC 1 PC 2       | BDO 08           | Propaedeutic of internal diseases              | 30                          | 30              | 15         | 150      | 225/5         |
| PC 1            | BDO 10           | Home nursing                                   | 30                          | 30              | 15         | 150      | 225/5         |
| PC1 PC2         | BDO 11           | Social significant diseases                    | 30                          | 45              | -          | 150      | 225/5         |
| PC1 PC2         | BDO 13           | Nursing care in Gerontology                    | 15                          | 15              | 15         | 135      | 180/4         |
| PC 1            | BDO 14           | Nursing care at chronic diseases               | 20                          | 15              | 10         | 90       | 135/3         |
| PC1 PC2         | PDO 01           | Nursing in therapy                             | 30                          | 30              | 15         | 150      | 225/5         |



|         |        |                                     |    |    |    |     |       |
|---------|--------|-------------------------------------|----|----|----|-----|-------|
| PC1 PC2 | PDO 02 | Nursing in primary care             | 30 | 30 | 15 | 150 | 225/5 |
| PC1 PC2 | PDO 03 | Management in nursing               | 20 | 25 | -  | 90  | 135/3 |
| PC1     | PDO 04 | Specialized nursing care            | 20 | 15 | 10 | 90  | 135/3 |
| PC 2    | PDO 06 | Organization of research in nursing | 20 | 15 | 10 | 90  | 135/3 |
| PC 1    | PDO 07 | Palliative care                     | 20 | 15 | 10 | 90  | 135/3 |

In SES of master degree from 2015 there is an 8 credits and total 360 hours of the disciplines of EBN competence. This SES had been revised in 2017-2018 by expert group from JAMK and HAMK universities of applied science, but official document had not been published and disseminated yet.

*Table 7. The subjects what build the EBP competencies according to the SES 6M110300 «Nursing» Scientific pedagogical*

| Discipline index | Discipline name                             | Independent work of student | Classroom hours | Simulation | Practice | Hours credits |
|------------------|---|-----------------------------|-----------------|------------|----------|---------------|
| IFN5201          | History and philosophy of science           | 30                          | 15              | -          | -        | 2/45          |
| Bio5206          | Biostatistics                               | 30                          | 15              | -          | -        | 2/45          |
| DMSP 5301        | Evidence based medicine in nursing practice | 30                          | 15              | -          | -        | 2/45          |
| OMNISD 5304      | Basis of research methodology in nursing    | 30                          | 15              | -          | -        | 2/45          |

As you can see there is much more than enough hours and credits for the building the competences of evidence based practice in state educational standards of nursing programs. For further analysis of the evidence based practice competencies had been done analysis of syllabuses in academic bachelor and master level.



## 4 Syllabuses analysis in academic bachelor and master levels of nursing education programs

Research goals: To study the exist evidence based nursing competence condition in the content of syllabus of academic and applied bachelor, master level in nursing.

Research activities :

1. Data collection from the next universities: Semey state medical university, Karaganda state medical university, West Kazakhstan medical university by name of M.Ospanov, Astana medical university, Kazakh national medical university by name of Asfendiyarov, South Kazakhstan pharmaceutical academy and the high medical colleges of Karaganda, Kokshetau, Shymkent, Pavlodar, Astana and Almaty. Should be collected the syllabuses of nursing program what going on in their university.
2. Collected data analyse by method of content analysis the automatic and manual search to define the next key words: evidence based nursing, evidence based medicine, critical thinking, research methodology, research in nursing, evidence based nursing practice.
3. The results of the content analysis will be used in forming the Gap analysis in between the SCES and syllabuses.

Methods: qualitative summarized content analysis, Gap analysis

In order to fulfil the first task had been sent the official call for data collection to all universities and colleges. The next organisations did not agreed to share the data and take part n to the further research: high medical colleges of Karaganda, Kokshetau, Shymkent, Pavlodar, Astana and Almaty, South Kazakhstan pharmaceutical academy.

Collected Academic bachelor syllabuses from 5 universities-total number 137, and master level of 4 universities (West Kazakhstan Medical university has no master program)- total number 35, the syllabuses number by universities you may see on table 8.

Table 8. The data(number of syllabuses) distribution by university

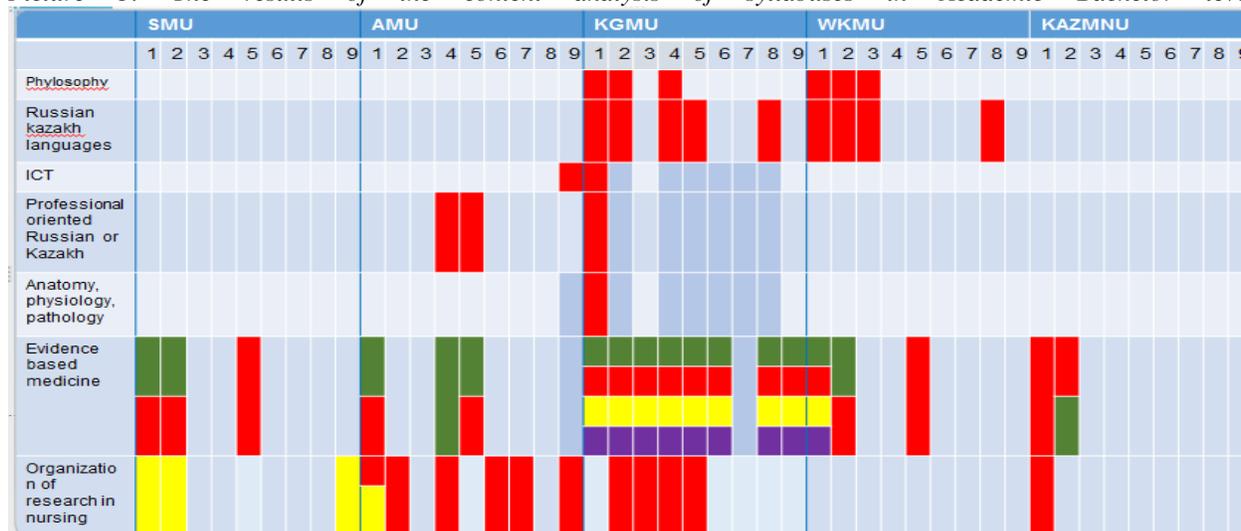
| High medical organisation | Astana medical university | Karaganda state medical university | Semey state medical university | West Kazakhstan Medical University by name of M.Ospanov | Kazakh national medical university by name of Asfendiyarov |
|---------------------------|---------------------------|------------------------------------|--------------------------------|---|--|
| Number of syllabuses      | 37                        | 23                                 | 27                             | 27  | 23   |

|                      |   |   |    |         |   |
|----------------------|---|---|----|---------|---|
| Bachelor degree      |   |   |    |         |   |
| Number of syllabuses | 9 | 8 | 10 | no Data | 8 |

As the result of the content analysis of academic bachelors there are next findings:

The most used among the key words is the research, what present in almost all syllabuses. But important note is the key word present only at learning outcomes but has no logical continuation throughout the syllabus. The key words evidence based nursing, critical thinking and research methodology present in content of only 2 disciplines- that is evidence based nursing and organization of research in nursing, when the clinical subjects has no any note of it in all sections of syllabuses (see pictures 3-5)

Picture 3: The results of the content analysis of syllabuses in Academic Bachelor level



Picture 4: The results of the content analysis of syllabuses in Academic Bachelor level (count)

|  | SMU |   |   |   |   |   |   |   |   | AMU |   |   |   |   |   |   |   |   | KGMU |   |   |   |   |   |   |   |   | WKMU |   |   |   |   |   |   |   |   | KAZMNU |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |
|--|-----|---|---|---|---|---|---|---|---|-----|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|--------|---|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|--|
|  | 1   | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1   | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |  |  |  |  |  |  |  |  |  |
| Basis of surgery                       |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   | 1    |   |   |   |   |   |   |   |   | 1    |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |
| Nursing in emergency                   |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |
| Basis of pediatrics                    |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |
| Basis of the gynecology and obstetrics |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |
| Nursing in gerantology                 |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |
| Nursing in primary helth               |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |
| Palliative care                        |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |
| Nursing in pediatrics                  |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |

Picture 5: The results of the content analysis of syllabuses in Academic Bachelor level (count)

|                                  | SMU |   |   |   |   |   |   |   |   | AMU |   |   |   |   |   |   |   |   | KGMU |   |   |   |   |   |   |   |   | WKMU |   |   |   |   |   |   |   |   | KAZMNU |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |
|----------------------------------|-----|---|---|---|---|---|---|---|---|-----|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|--------|---|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|--|
|                                  | 1   | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1   | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |  |  |  |  |  |  |  |  |  |
| Social significant diseases      |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   | 1    |   |   |   |   |   |   |   |   | 1    |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |
| Mental health                    |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |
| Propedeutic of internal diseases |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |
| Medical insurance                |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |
| Managemnt in nursing             |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |

Legend:

**SMU** – Semey State Medical University, **KSMU** – Karaganda State Medical University, **MUA** - Astana Medical University, **WKMU** – West Kazakhstan Marat Ospanov State Medical University, **KazNMU** – Asfendiyarov Kazakh National Medical University

The parts of syllabus: 1-Learning outcomes, 2-Practical classes, 3-Lectures, 4-Student independent work, 5-Student independent work with teacher, 6-Methods of education, 7-Methods of assessment, 8-Control methods(Assignments), 9-Literature

Key words described in colours:

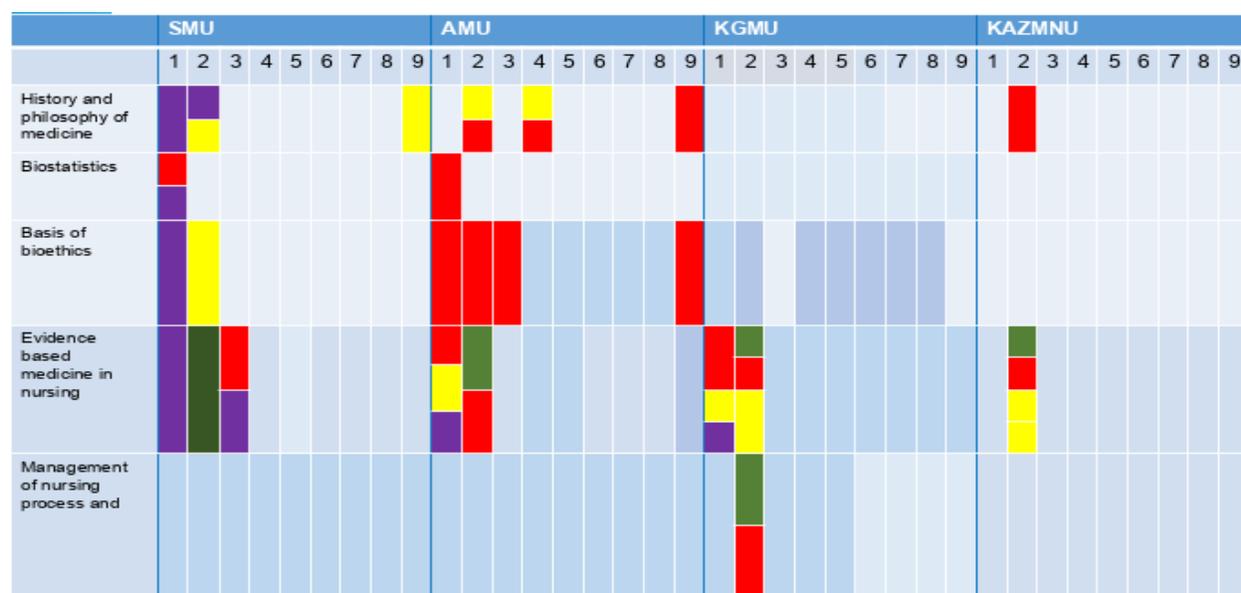
|  |                        |
|--|------------------------|
|  | Evidence based nursing |
|  | Research               |
|  | Research methodology   |
|  | Critical thinking      |

The results of content analysis in master level is much better in compare to the bachelor level. We can see below in pictures 6 and 7 hat the most common key word is research. This is what we expected. We also expected that we will find all 4 key words in the *Evidence based medicine* subject syllabus at all faculties. But we did not. Only one faculty (KGMU) had in the subject *Evidence based medicine* all 4 keywords. The 4 keywords were identified in 8 of 9 elements of syllabus. The remaining 4 faculties had only two keywords (evidence based nursing and research) in their *Evidence based medicine* subject syllabus.

Picture 6: The results of the content analysis of syllabuses in Master level

|   | SMU |   |   |   |   |   |   |   |   | AMU |   |   |   |   |   |   |   |   | KGMU |   |   |   |   |   |   |   |   | KAZMNU |   |   |   |   |   |   |   |   |
|---|-----|---|---|---|---|---|---|---|---|-----|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|--------|---|---|---|---|---|---|---|---|
|   | 1   | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1   | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Basis of pedagogy in nursing                            |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |
| Basis of research in nursing                            |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |
| Basis of bioethics                                      |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |
| Evidence based medicine in nursing practice             |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |
| Management of nursing process and nursing documentation |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |

Picture 7: The results of the content analysis of syllabuses in Master level (count)



## 5 Gap analysis in academic bachelor between the SCES and curriculum content

We used a method to assess core competency development in the curriculum (Fater, 2013) for model to conduct our GAP analysis. SCES (The State obligatory standard post-secondary education of applied bachelor specialty "Nursing", № 647, 2015) are nationally binding documents that define disciplines, credit points, hours, competence and other necessary data for the implementation of the Academic Bachelor and nursing program. We have found that the accessible curriculums differ from the standard.

Table 9. Curriculum 2017 SES

| Curriculum 2017 SES |       | The key words what had been found                                 |      |       |          | Comments  |
|---------------------|-------|---|------|-------|----------|---|
| Phylosophy          | 3/135 | BC-1 Learning<br>BC-2<br>Professionalism<br>BC-3<br>Communication | KSMU | 3/135 | Research | In the all syllabuses is the key word research - but no |

|                             |       |   |             |       |          |   |
|-----------------------------|-------|---|-------------|-------|----------|---|
|                             |       |   |             |       |          | <i>correlation with EBN</i>   |
| Russian kazakh language     | 6/270 | BC-1 Learning<br>BC-2 Professionalism<br>BC-3 Communication<br>PC-1 Clinical nursing care   | KSMU        | 6/270 | Research |   |
| ICT                         | 3/135 | BC-1 Learning<br>BC-2 Professionalism<br>BC-3 Communication<br>PC-1 Clinical nursing care   |             |       |          |   |
| Social significant diseases | 5/225 | BC-1 Learning<br>BC-2 Professionalism<br>BC-3 Communication<br>PC-1 Clinical nursing care<br>PC-2 Research and EBN<br>PC 4 Health promotion | KSMU        | 3/135 | Research | <i>In the all syllabuses is the key word research - but no correlation with EBN</i> |
| Mental health               | 4/180 | BC-1 Learning<br>BC-2 Professionalism<br>PC-1 Clinical nursing care<br>PC-5 Education and mentoring   | KSMU        | 3/135 | Research |   |
| Medical insurance           | 2/90  | БК-3 Коммуникации<br>БК-4 Инновации<br>ПК-3 Менеджмент и качество сестринских услуг<br>ПК-4 Укрепление здоровье                             | KSMU<br>SMU | 3/135 | Research |   |



|  |       |   |                    |       |   |  |
|--|-------|---|--------------------|-------|---|--|
| <b>Basis of evidence based nursing</b>     | 3/135 | BC-1 Learning<br>BC-4<br>Innovaton<br>PC-2 Research and EBN<br>PC-3<br>Management and quality   | KSMU<br>SMU<br>AMU | 3/135 | <i>Research<br/>EBN<br/>Critical<br/>thinking</i> | <i>3 university called the subject the evidence based medicine in nursing<br/>In the description of the KSMU uses the term EBN<br/>SMU uses EBN<br/>AMU uses EBN and EBM</i> |
| <b>Organization of research in nursing</b> | 3/135 | BC-4<br>Innovation<br>PC-2 Research and EBN<br>PC-3<br>Management and quality   | KSMU<br>SMU<br>AMU | 3/135 | <i>Research<br/>EBN<br/>Critical<br/>thinking</i> | <i>Post requisite of EBN In all universities</i>   |
| <b>Nursing in therapy</b>                  | 5/225 | BC-3<br>Communication<br>PC-1 Clinical nursing care<br>PC-2 Research and EBN  | -                  | -     | -   | <i>In the all syllabuses should be the key word EBN but no correlation with EBN</i>  |
| Nursing in primary health                  | 5/225 | BC-1 Learning<br>BC-2<br>Professionalism<br>BC-3<br>Communications<br>PCPC-2<br>Research and EBN<br>PC-3<br>Management and quality<br>-1 Clinical nursing care<br>PC-4 Health promotion | -                  | -     | -   |  |
| <b>Management in nursing</b>               | 3/135 | BC-4<br>Innovations   | -                  | -     | -   |  |



|                           |       |  |   |   |   |  |
|---------------------------|-------|--|---|---|---|--|
|                           |       | PC-1 Clinical nursing care<br>PC-2 Research and EBN<br>PC-3 Management and quality<br>PC-4 Health promotion                          |   |   |   |  |
| Nursing in emergency care | 5/225 | BC-1 Learning<br>PC-2 Research and EBN<br>PC-3 Management and quality  | - | - | - |  |
| Nursing in gerontology    | 4/180 | BC-2 Professionalism<br>PC-1 Clinical nursing care<br>PC-2 Research and EBN<br>PC-4 Health promotion<br>PC-5 education and mentoring | - | - | - |  |

Table 10. Syllabuses analysis in Academic Bachelor and National educational Standard

| Curriculum analysis                      |                 | SCES analysis |  |                 | Commentary   |
|--|-----------------|---------------|--|-----------------|--|
| Subject                                  | Credits / hours | University    | Subject  | Credits / hours |  |
| Information and communication technology | No data         | KSMU          | <u>Ltd. 05 - Information and communication technologies</u> (Model curriculum 5V110100 the specialty "Nursing" Duration of training: 4 years Academic degree: Bachelor of Nursing) | 3/135           | <p>This subject Information and communication technologies in curriculums is described only in KSMU. There we can find content to correlate to EBN.</p> <p>In SCES this subject is also described, but in description it contains only data analysis from the point of view of understanding of data bases, analysis and data management, no correlation to ENP.</p> |



|                                     |       |                |  |       |  |
|-------------------------------------|-------|----------------|--|-------|--|
|                                     |       |                | <u>OOD4 - Information and communication technology</u> - (reduced educational programs 5V110100 by specialty - "Nursing")  | 3/135 |  |
| Evidence based medicine             | 3/135 | SMU, KSMU, AMU | <u>BDO 04 - Evidence-based nursing</u> (by speciality 5V110100 - "Nursing")  | 3/135 | <p>We found subject named Evidence based medicine in curriculums in three universities.</p> <p>In description of subjects the SMU is using terms EBN.</p> <p>In description of subjects the KSMU curriculum is not using any terms of nursing but only medicine.</p> <p>In description of subjects the MUA uses both expressions – EBM and EBN.</p> <p>In SCES the subject on all basis the names of subjects are EBN related.</p> |
|                                     |       |                | <u>SD 26 - Evidence-based nursing practice</u> (0302054 - "Nursing" Qualifications: "Applied Bachelor" (On the basis of general secondary education)   | 4/180 |  |
|                                     |       |                | <u>SD 11 - Specialized nursing care and evidence-based practice</u> Model curriculum by specialty 030 200 0 - "Nursing" Qualification: "Applied Bachelor" (On the basis of technical and vocational education) | 2/90  |  |
| Organisation of research in nursing | 3/135 | SMU, KSMU, AMU | <u>PDO 06 - Organization of research in nursing</u> (by speciality 5V110100 - "Nursing")   | 3/135 | This is basic subject in association with EBN, it links to an subject in SCES. All three universities are using it.  |

In this table 10 there are the subjects from the assessable curriculums from Academic bachelor degree in KZ universities that have connection with the subjects found in SCES. They are all comparable in number of credits and number of hours.



Table 11. Syllabuses analysis in Academic Bachelor with key words for EBN and no direct link to EBN

| subject                             | Credits<br>/ hours | University   | Subject in SCES   |
|-------------------------------------|--------------------|--------------|---|
| Philosophy                          | 3/135              | KSMU         | Ltd. 02 – Philosophy<br>DMS 01 - Core philosophy with Cultural Studies<br>SED 01 - Fundamentals of Philosophy and Cultural Studies<br>OOD1- Philosophy                |
| Russian/Kazakh                      | 6/270              | KSMU,<br>AMU | Ltd. 04 - Kazakh (Russian) language   |
| Professional orientated Russian     | 2/90               | KSMU         | 01 JRT - Professional Kazakh (Russian) language<br>BDO 01 - Professional Kazakh (Russian) language<br>BDO 02 - professional but Oriented Foreign Language             |
| Anatomy/physiology/pathology        | 3/135              | KSMU         | CAP 01 - Anatomy, physiology and pathology<br>HPD<br>02 - Anatomy, physiology and pathology<br>BDO 03 - Anatomy, physiology and pathology                             |
| basic of surgery                    | 3/135              | KSMU         | BDO 05 - Fundamentals of surgery<br>DB3 - Nursing in therapy and surgery  |
| nursing in emergency care           | 3/135              | KSMU         | SD 17 Urgent care<br>SD 03 - Urgent nursing care<br>BDO 06 - Nursing care for acute and urgent conditions   |
| basic of pediatric                  | 4/180              | KSMU         | SD 08 - Nursing in Paediatrics  |
| basic of gynaecology and obstetrics | No data            | SMU,<br>KSMU | BDO 08 - Fundamentals of Obstetrics and Gynaecology<br>SD 10 - Nursing in obstetrics and gynaecology<br>KP 03 - The practice of "Nursing care for women and children" |
| propedeutics of internal diseases   | 5/225              | KSMU         | BDO 09 - Propedevtika Internal Medicine   |
| social significant diseases         | 3/135              | KSMU         | BDO 11 - Socially significant diseases  |
| psihiatric health and addiction     | 4/180              | KSMU         | SD 12 - Mental health and addiction<br>SD 07 - Mental Health Nursing  |
| nursing in gerontology              | 3/135              | SMU,<br>KSMU | BDO 13 - Nursing in Gerontology<br>BD4 - Nursing in Gerontology and Geriatrics  |



|                         |       |      |   |
|-------------------------|-------|------|---|
| medical insurance       | 2/90  | KSMU | BDO 16 - Health insurance   |
| nursing in primary care | 3/135 | KSMU | KP 01- Practice "Primary Health Care"   |
| management in nursing   | 3/135 | KSMU | PDO 03 - Management in nursing<br>PD03 - Management and quality in nursing<br>PD1 - Management and quality in nursing |
| palliative care         | 3/135 | KSMU | SD 13 - Palliative care<br>PDO 07 - Palliative care   |
| paediatrics in nursing  | 4/180 | KSMU | SD 08 - Nursing in Paediatrics  |

In the analysis for Academic Bachelor level can be seen that in this moment and structure only 3 subjects in Kazakhstan everyday education practice respond to the National educational Standard demands/suggestions. SCES predicts 6 subjects connected to EBN. On Academic Bachelor level 3 medical faculties include 2 subjects connected to EBN. Only one faculty out of these 3 includes also the third subject connected to EBN. None of these 3 subjects have the content which would in full hours/credits respond to EBN. Though, the subjects have specific fragments of content that are directly/important linked to EBN content. You can see details in table 6.

In table 7 we listed subjects in syllabus and everyday education process that include key word "EBN". These 17 subjects include the key word but have no direct/important link to EBN content.

## 6 Gap analysis in master between the SCES and curriculum content

The content of the educational program for graduate medical specialties group 6M11 "Health care and social security (medicine)" on scientific and pedagogical and profile directions (Appendix 2 to the state compulsory Magistrates standard medical specialties).



Table 12. SCES determinants for Master Degree (6M110300 nursing)

| Name of disciplines and activities  | The Form of control       |        |          |         |       |
|---|---------------------------|--------|----------|---------|-------|
|   | volume of credits */hours | 1 year | 1,5 year | 2 years | hours |
| <p><b>IFN History and philosophy of science</b></p> <p>The philosophy and methodology of science as a branch of philosophy. Science in the emergence of culture and civilization of science. The main stages of the historical dynamics of science. The structure of scientific knowledge. Scientific revolutions. Scientific rationality. Features of the present stage of development of science. Science as a social institution Science in the structure of modern scientific knowledge. The history of formation of the social sciences, culture, history and man. Current philosophical problems of specific sciences.</p>  |                           |        | 2/90     | exam    |       |
| <p><b>Bio biostatistics</b></p> <p>Introduction to biostatistics. Basic concepts of probability theory. Evaluation of a set of parameters. Fundamentals of statistical hypothesis testing. Studying the relationship between the quantitative and qualitative traits. Bases ANOVA. Parametric and nonparametric tests. Standardization method, its value and use. Correlation analysis. This graphic image in a statistical study. The use of computer technology in the processing of statistical data. The use of measurement scales in biomedical experiments. Aggregate estimates. Integrated assessments. Analysis of the use of statistical methods in articles and theses studies. Standardization method, its value and use. Statistics of public health. health system statistics. Statistics for biomedical research.</p> | 1/45                      | 1/45   | 2/90     | exam    |       |

|  |               |                |               |             |  |
|--|---------------|----------------|---------------|-------------|--|
| <p style="text-align: center;"><b>OBI Basics of bioethics</b></p> <p>Introduction to Bioethics. Ethical and legal support for biomedical research involving human subjects. Documents regulating the ethical conduct of biomedical research involving human subjects. International regulations. The establishment and activities of the Ethics Committee. Standard operating procedures. Phase I clinical studies of drugs. Design research and ethical evaluation of biomedical research methods. Documentation of ethical review. The basic principles of conducting clinical trials. Informed consent. Questions of insurance protection of participants in biomedical research. Particularly vulnerable to biomodels Research on laboratory animals.</p>  |               | 1/45           | 2/90          | <i>exam</i> |  |
| <p style="text-align: center;"><b>DMSP Evidence-based medicine in nursing practice</b></p> <p>The history of evidence-based nursing. Terminology, tools and methods of evidence-based medicine. Influence of nursing research in the medical practice. The positive impact of evidence-based nursing practice to patients. The steps of applying the scientific evidence in nursing practice. A critical evaluation of the results of nursing interventions carried out on the basis of the decision. A comparison of the nursing process and the scientific method of research. Methodology The research health information reliable sources and resources. Reading and analysis of scientific publications and research reports. Finding information on the Internet with the use of evidence-based medicine filters. Obstacles to the development of evidence-based nursing practice.</p> | 1<br>*****/45 | 2 *****/<br>90 | 2<br>*****/90 | <i>exam</i> |  |
| <p style="text-align: center;"><b>OMNI Basics of Research Methodology</b></p> <p>The national and international law in the field of research: QPBR, GLP, GLP, GCLP, etc. Scientific research in medicine.. Scientific and research programs by funding source. Finding and attracting grants. Writing scientific projects and grant applications. Research Methodology. Descriptive and analytical studies. A systematic review. A meta-analysis. Collection of information. Data processing. Analysis of the research and the formulation of conclusions and recommendations. Implementation of research</p>  |               |                | 2/90          | <i>exam</i> |  |



|  |  |  |  |  |  |
|--|--|--|--|--|--|
| <p>results, the protection of intellectual property rights (patents).<br/>         General requirements and rules of registration of scientific and research work. Reviewing research papers. Training of scientific materials for publication in the press. Publications in peer-reviewed journals, the general rules of writing articles assessing the methodological quality of the main types of research errors. Mechanisms for practical transfer of research results into practice and health policy.</p> |  |  |  |  |  |
| <p>**** This profile discipline among the compulsory for the specialty 6M110300 - "Nursing";</p>   |  |  |  |  |  |

Duration of study program Master's profile 6M11 by industry group - "Health care and social security (medicine)" is 1 and 1.5 year program of scientific and pedagogical magistracy On special 6M11 groups - "Health care and social security (medicine)" It is 2 years. Planning and organization of the educational activities are carried out on the basis of model curricula for the respective specialty according to appendix 4-8 to this program.

### 1.1. Syllabuses analysis in master's degree

Legend:

SMU – Semey State Medical University

KSMU – Karaganda State Medical University

AMU - Astana Medical University

WKMU – west Kazakstan Marat Ospanov State Medical University

KazNMU – Asfendiyarov Kazakh National Medical University

Key words:

|  |                        |
|--|------------------------|
|  | Evidence based nursing |
|  | Research               |
|  | Research methodology   |
|  | Critical thinking      |



|   | SMU |   |   |   |   |   |   |   |   | AMU |   |   |   |   |   |   |   |   | KGMU |   |   |   |   |   |   |   |   | KAZMNU |   |   |   |   |   |   |   |   |
|---|-----|---|---|---|---|---|---|---|---|-----|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|--------|---|---|---|---|---|---|---|---|
|   | 1   | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1   | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Basis of pedagogy in nursing                            | █   |   |   |   |   |   |   |   |   | █   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   | █      |   |   |   |   |   |   |   |   |
| Basis of research in nursing                            | █   | █ | █ | █ |   |   |   | █ | █ | █   | █ |   |   |   |   |   |   |   | █    | █ | █ |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |
| Basis of bioethics                                      | █   | █ |   |   |   |   |   |   |   | █   | █ | █ |   |   |   |   |   |   | █    |   |   |   |   |   |   |   |   | █      |   |   |   |   |   |   |   |   |
| Evidence based medicine in nursing practice             | █   | █ | █ |   |   |   |   |   |   | █   | █ | █ |   |   |   |   |   |   | █    | █ | █ |   |   |   |   |   |   | █      |   |   |   |   |   |   |   |   |
| Management of nursing process and nursing documentation |     |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |        |   |   |   |   |   |   |   |   |

We can see in picture 8 that the most common key word is again research. This is what we expected at master level. We also expected that we will find all 4 key words in the *Evidence based medicine in nursing* subject syllabus at all faculties. But we can see similar as it was seen at bachelor level. Two faculties (AMU and KSMU) had in the subject *Evidence based medicine in nursing* all 4 keywords.

## 7 Gap analysis in master degree between the SCES and curriculum content

Table 13. Syllabuses analysis in Master degree

| Curriculum analysis               |                 |            | SCES analysis                         |                 | commentary  |
|-----------------------------------|-----------------|------------|---------------------------------------|-----------------|---|
| subject                           | Credits / hours | university | subject                               | Credits / hours |   |
| History and philosophy of science | 2               | SMU, AMU   | IFN History and philosophy of science | 2/90            | Credits 2= The content of the educational program pedagogical profile for people who have completed the profile master's degree and |

|  |   |                      |  |                        | who wish to gain admission to teaching |
|--|---|----------------------|--|------------------------|--|
| Biostatistics  | 3 | SMU, AMU             | BIO Biostatistics  | 1/45 –<br>1 year       |  |
|  |   |                      |  | 1/45-<br>1,5<br>year   |  |
|  |   |                      |  | 2/90 - 2<br>years      |  |
| Basics of bioethics  |   | SMU, AMU             | OBI Basics of bioethics  | 1/45 -<br>1,5<br>year  |  |
|  |   |                      |  | 2/90 - 2<br>years      |  |
| Evidence Based Medicine in Nursing Practice                  |   | SMU,<br>AMU,<br>KGMU | DMSP Evidence-based medicine in nursing practice<br>Model curriculum by specialty 6M110300 - Nursing   | 1/45 - 1<br>year       |  |
|  |   |                      |  | 2/ 90 -<br>1,5<br>year |  |
|  |   |                      |  | 2/90 - 2<br>years      |  |
| Organization of Nursing process and Documentation in Nursing |   | KGMU                 | Organization of the nursing process and documentation in nursing<br>The content of the educational program for graduate medical specialties group 6M11 "Health care and social security (medicine)" on | 1                      |  |



|   |  |                |   |               |  |
|---|--|----------------|---|---------------|--|
|   |  |                | scientific and pedagogical and profile directions   |               |  |
|   |  |                |   | 2             |  |
|   |  |                |   | 2             |  |
| Basis of Pedagogic methodology in Nursing |  | SMU, AMU       | Ompsd? Basics of the methodology of teaching in nursing<br>Model curriculum by specialty 6M110300 - Nursing | 2 / - 2 years |  |
| Basis of Research methodology in Nursing  |  | SMU, AMU, KGMU | Omni sd5304 Basics of Research Methodology in Nursing   | 2/ - 2 years  |  |

According to SCES, Master level study should contain 7 subjects connected to EBN. Master degree curriculum analysis shows that there are also in everyday education practice 7 subjects connected to EBN. 2 faculties include all 7 subjects, 1 faculty includes 3 subjects and the fourth faculty does not include subjects connected to EBN. The situation is similar as it is in academic bachelor curriculums - subjects do not have the content, which would in full hours/credits respond to EBN. Only 2 subjects have specific fragments of content that are directly/important linked to EBN content (table 13).

## 8 Advancement of EBN in education process and conclusions

GAP analysis provides valuable data to existing curriculums and SCES revision. Opportunities for competency development were identified. After reviewing three programs on bachelor level from SCES (On the basis of general secondary education, On the basis of technical and vocational education, Reduced educational programs with accelerated training period) and comparing them to the available data analysis from curriculum analysis conducted by SSMU project partners we established that:

- There is a significant difference between the SCES and the existing curriculum content according to the available data,

- They only corresponds to some programs,
- Generally, there is a large lack of content of EBN to ensure that students acquire competence in EBN or EBP field of knowledge.

After reviewing the master program, we find that there is one study program " The content of the educational program for graduate medical specialties group 6M11 "Health care and social security (medicine)" on scientific and pedagogical and profile directions. Given that the study program is in harmony with SCES and given that we have not been able to obtain information on the necessary student's competences, no further analysis and suggestions for improvements can be made.

Gap analysis served as a tool to determine major priorities for the advancement of EBN in education process for nursing students. Kazakhstan needs to enhance capacity of nursing departments and most important, to share understanding on evidence based nursing concept and education on the level of higher education. (National) educational materials on EBN are needed for the advancement of EBN in education process and the assessment of current knowledge of the teachers is needed to see, to what level are they at this very moment competent to teach EBN. Educating the teachers and giving them the teaching content is the starting point for establishing and developing EBN education process. By empowering the teachers, we will be able to find already existing strengths and deficits in current curriculums.

We are listing identified contents that should be implemented into education process in Kazakhstan:

- Definition, principles and development of evidence-based nursing, Evidence-based medicine and evidence-based nursing practice in the clinical practice of the CIS and Kazakhstan
- The concept of the design of nursing research. Classification of nursing research. Levels of evidence
- Five stages of evidence-based nursing. Finding information on the Internet and electronic databases. Critical analysis of medical information. Assessment of methodological quality of clinical research in nursing
- Ethics in evidence-based nursing and evidence-based nursing practice. The role and the rights of patients in research
- Nursing databases
- Clinical guidelines and standards of best nursing practice
- Research types in evidence-based nursing (Research hierarchy)  
A systematic review and meta-analysis
- Ways of dissemination of research results in nursing (standards, CRC, research papers, health technology assessment in nursing)
- Clinical nursing guidelines. The process of creating a clinical guideline. Evaluation of



clinical guidelines

- Evidence levels gradation recommendations. Relative strengths and limitations of types of evidence
- Stages of the planning and execution of research in nursing
- Research process in organization
- The history of the development of evidence-based nursing
- The influence of nursing research on nursing practice
- Formulation of the nursing problem on the principle of PICO
- Pyramid of hierarchy of levels of evidence
- Steps of applying scientific evidence in nursing practice and a critical evaluation of the results of the nursing intervention performed on the basis of the decision taken
- Reading and analysis of scientific publications and reports on scientific research
- Obstacles to the development of evidence-based nursing practice
- Nursing guidelines and evidence-based procedures

These contents are needed and identified in Academic bachelor and Master study level. Further development of nursing education will involve interconnection of clinical practice, medical education and research activities, which will provide broad clinical bases for conducting relevant scientific research with prompt transfer of results to the practical health care environment. In Kazakhstan HEI's the majority of nursing care teachers are physicians, not nurses. Only 4% of teachers have a nursing care diploma, so the teaching of nurses goes through physicians. Serious problems exist in efficient mechanism of interaction between a student, educational institution and clinical base. For nursing profession scientific-research trajectory of post-university and continuous education is underdeveloped. There is lack of training in nursing care researches and evidence-based nursing practice based on applied researches in nursing researches. As it is stated already in the project application, currently not more than 40% of nurses having higher education are employed and not more than 70% of master program graduates are employed in accordance with their profession and level of education.

Learning from the international good practices will accelerate the development required for the reforms that are on progress in Kazakhstan. The collaboration between the HEIs, their university clinics as well as with health care sector can be developed based on the results achieved already in Europe and evidence based nursing research.



## References

- 1 Burns, B., 2009. Continuing competency: What's ahead? *Journal of Perinatal Neonatal Nurse*, 23(3), pp. 218–227.
- 2 Ely, J.W., Osherooff, J.A., Chambliss, M. L., Ebell, M.H. & Rosenbaum, M.E., 2005. Answering physicians' clinical questions: Obstacles and potential solutions. *Journal of American Medical Informatics Association*, 12(2), pp. 217–224.
- 3 Heikkila, J., Hopia, H., Hasselberg, J., Tiittanen, H. & Baighorzina, Z., 2017. A Cross Sectional Study of Nurses' and Nurse Educators' Perceptions of Evidence-Based Practice in Kazakhstan. *Annals of Nursing Research & Practice*, 2(1), p. 1016.
- 4 Wilson, M., Sleutel, M., Newcomb, P., Behan, D., Walsh, J., Wells, J.N., & Baldwin, K.M., 2015. Empowering Nurses With Evidence-Based Practice Environments: Surveying Magnet, Pathway to Excellence, and Non-Magnet Facilities in One Healthcare System. *Worldviews on Evidence-Based Nursing*, 12(1), pp. 12–21.
- 5 Governmental regulation RK no 752 30 June 2014. About the passage of the plan of action on the realization of the concept in inclusion of Kazakhstan into number of 30 most developed states of the world for 2014- 2020, cited in: Heikkila at al., 2016.
- 6 Kamalbekova, G. & Kalieva, M., 2015. Evidence-based medicine Training: Kazakhstan experience. *The International journal of risk & safety in medicine*. 27(1), pp. S95-96.
- 7 Katsaga, A., Kulzhanov M., Karanikolos, M. & Rechel, B., 2012. Kazakhstan health system review. Available at: [https://www.researchgate.net/publication/230677754\\_Kazakhstan\\_health\\_system\\_review](https://www.researchgate.net/publication/230677754_Kazakhstan_health_system_review). (Accessed: 7. 8. 2018).
- 8 Kulzhanov, M. & Rechel, B., 2007. Health System in Transition. Available at: [http://www.euro.who.int/\\_data/assets/pdf\\_file/0007/85498/E90977.pdf](http://www.euro.who.int/_data/assets/pdf_file/0007/85498/E90977.pdf). (Accessed: 7. 8. 2018).
- 9 Melnyk, B.M., Fineout-Overholt, E., Gallagher-Ford, L. & Kaplan, L., 2012. The state of evidence-based practice in US nurses: Critical implications for nurse leaders and educators. *Journal of Nursing Administration*, 42(9), pp. 410–417.
- 10 Melnyk, B.M., Gallagher – Ford, L., English Long, L. & Fineout – Overholt, E. 2014. The Establishment of Evidence-Based Practice Competencies for Practicing Registered Nurses and Advanced Practice Nurses in Real-World Clinical Settings: Proficiencies to Improve Healthcare Quality, Reliability, Patient Outcomes, and Costs. *Worldviews on Evidence-based Nursing*, 11(1), pp. 5-15.
- 11 Melnyk, B.M., Gallagher – Ford, L., Zellefrow, C., Tucker, S., Van Dromme, L. & Thomas, B.K., 2018a. Outcomes From the First Helene Fuld Health Trust National Institute for Evidence-Based Practice in Nursing and Healthcare Invitational Expert Forum. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/29337427> (Accessed: 18. 7. 2018).
- 12 Melnyk, B.M., Gallagher – Ford, L., Zellefrow, C., Tucker, S., Thomas, B., Sinnott, L.T. & Tan, A., 2018b. The First U.S. Study on Nurses' Evidence-Based Practice Competencies Indicates Major Deficits That Threaten Healthcare Quality, Safety, and Patient Outcomes. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/29278664> (Accessed: 18. 7. 2018).
- 13 National League for Nursing (NLN), 2013. Competencies for Nursing Education. Available at: [http://www.nln.org/facultyprograms/competencies/graduates\\_competencies.htm](http://www.nln.org/facultyprograms/competencies/graduates_competencies.htm). (Accessed: 3. 8. 2018).
- 14 Titler, M. G., 2009. Developing an evidence-based practice. In G. LoBiondo-Wood & J. Haber (Eds.), *Nursing research: Methods and critical appraisal for evidence-based practice* (7th ed., pp. 385–437). St Louis, MO: Mosby.
- 15 Pravikoff, D. S., Pierce, S. T., & Tanner, A. (2005). Evidence-basedpractice readiness study supported by academy nursing informaticsexpert panel. *Nursing Outlook*, 53(1), 49–50.



- 16 Quality and Safety Education for Nurses (QSEN), 2013. The Evolution of the Quality and Safety Education for Nurses (QSEN) Initiative. Available at: <http://qsen.org/about-qsen/project-overview/>. (Accessed: 3. 8. 2018).
- 17 Melnyk, Gallagher-Ford, and Fineout-Overholt, 2013, cited in Melnyk, B.M., Gallagher – Ford, L., English Long, L., Fineout – Overholt, E. 2014)
- 18 Ministry of Health (2004). National Programme of Health Reform and Development for 2005–2010, approved by presidential decree on 13 September 2004. Astana, Ministry of Health
- 19 Т. Х. Хабиева (2017). Инновационный менеджмент в сестринском деле как повышение конкурентоспособности медицинских сестер в условиях ОСМС. Вестник Казахского Национального медицинского университета, (2), 341-344.
- 20 Утепбергенова Ж.М., Калматаева Ж.А., & Калмаханов С.Б. (2017). Ресурсная обеспеченность трудового процесса медицинских сестер общей практики в мегаполисах Республики Казахстан. Вестник Казахского Национального медицинского университета, (4), 382-385.
- 21 М.А. Камалиев, & А.Б. Альмуханова (2015). Управление сестринским процессом в городском кардиологическом центре. Вестник Казахского Национального медицинского университета, (1), 468-469.
- 22 Iskakova AM, Abzalova RA, Beisebekova DM (2015) Analysis of Medical and Social Technologies in Nursing at the Level of Primary Health Care. Biol Med (Aligarh) 7(4): BM-125-15, 5 pages.
- 23 Искакова А.М., Абзалова Р.А., Шалгумбаева Гульнар Металловна, Юодайте-Рачкаускене А., Ахметова А.К., Сундеева Е.А., & Кулуспаев Е.С. (2016). Внедрение новых сестринских технологий в Республике Казахстан. Проблемы социальной гигиены, здравоохранения и истории медицины, 24 (3), 182-185.
- 24 Kunirova, Gulnara et al. (2018). Palliative Care in Kazakhstan. Journal of Pain and Symptom Management , Volume 55 , Issue 2 , S36 - S40
- 25 Ferrell, Betty et al. Evaluation of palliative care nursing education seminars. European Journal of Oncology Nursing , Volume 14 , Issue 1 , 74 - 79
- 26 Nadisauskiene RJ, Doboziuskas P, Kacerauskiene J, et al. The impact of the implementation of the postpartum haemorrhage management guidelines at the first regional perinatal centre in Southern Kazakhstan. BMC Pregnancy Childbirth. 2016;16:238. Published 2016 Aug 19. doi:10.1186/s12884-016-1027-4
- 27 Ж.А. Губайдуллина, & М.К. Фалеева (2015). Состояние сестринского дела в объединенной университетской клинике КазНМУ имени С. Д. Асфендиярова по итогам 2014 года. Вестник Казахского Национального медицинского университета, (1), 553-557.
- 28 Viktor Riklefs, Gulmira Abakassova, Aliya Bukeyeva, Sholpan Kaliyeva, Bakhtiyar Serik, Alma Muratova & Raushan Dosmagambetova (2018) Transforming medical education in Kazakhstan: Successful case of internationalization from Karaganda State Medical University, Medical Teacher, 40:5, 481-487
- 29 У. А. Алтынбекова, М. А. Рамазанова, Б. С. Касиева, & Б. К. Абдимуратова (2017). Некоторые подходы к оптимизации подготовки академических и прикладных бакалавров сестринского дела. Вестник Казахского Национального медицинского университета, (2), 337-340.
- 30 Алтынбекова У.А., Рамазанова М.А., Кашафутдинова Г.Т., & Абдимуратова Б.К. (2016). Совершенствование компетентностного подхода в подготовке бакалавров сестринского дела. Вестник Казахского Национального медицинского университета, (3), 230-233.
- 31 Н.В. Тё, М.К. Кайдаулов, У.А. Алтынбекова, & М.К. Кошимбеков (2016). Современные особенности подготовки и обучения медицинских сестер в Казахстане. Вестник Казахского Национального медицинского университета, (1), 626-628.
- 32 Даулетьярова М.А., Семенова Ю.М., Кайлюбаева Г.Ж., Манабаева Г.К., Елисинова А.М., Елисинова Н.М., & Баймухаметов Е.С. (2015). Изучение знаний медицинских работников



по принципам доказательной медицины и эффективным технологиям в городе Семей. Наука и здравоохранение, (5), 61-67.

#### SCES:

**Order # 471 issued by Health ministry of Kazakhstan Republic at 24 July 2017 .**

**Order #647 issued by Health ministry of Kazakhstan Republic at 31 July 2015.**

#### Syllabuses:

1. Seitmembetov T.S 2017-2018, Medical biochemistry, academic bachelor syllabus, Astana medical university.
2. Seitmembetova A.Zh. 2017-2018, Chemistry, academic bachelor syllabus, Astana medical university.
3. Shlyapova A.M. 2017-2018, Russian language, academic bachelor syllabus, Astana medical university.
4. Karkabaeva A.Zh. 2017-2018 Introduction to clinic, academic bachelor syllabus, Astana medical university.
5. Kalieva Zh.A. 2017-2018 ICT, academic bachelor syllabus, academic bachelor syllabus, Astana medical university.
6. Aisaibekov D.T. 2017-2018, Modern history of Kazakhstan, Astana medical university.
7. Kalieva A. K. 2017-2018 Foreign language, academic bachelor syllabus, Astana medical university.
8. Akhmedina B.K. 2017-2018 Latin language, academic bachelor syllabus, Astana medical university.
9. Mambetpaeva M.S., 2017-2018 Basis of biomedicine, academic bachelor syllabus, Astana medical university.
10. Zharykova D.R. 2017-2018 Kazakh language, academic bachelor syllabus, Astana medical university.
11. Karkabaeva A.Zh. 2017-2018 Propaedeutics of internal diseases, academic bachelor syllabus, Astana medical university.
12. Kalieva A. K. 2017-2018 Foreign language 2, academic bachelor syllabus, Astana medical university.
13. Mambetpaeva M.S., 2017-2018 Molecular biology, academic bachelor syllabus, Astana medical university.
14. Dalenov E.D. 2017-2018, Assessment of health condition, academic bachelor syllabus, Astana medical university.
15. Muhambetov D.D., Zhusupova G.D., Uyzbaeva I.K., 2017-2018, Basis of pharmacology, academic bachelor syllabus, Astana medical university.
16. Sholanova M.K., 2017-2018, Basis of nursing, academic bachelor syllabus, Astana medical university.
17. Derbessalina G.A., 2017-2018, Basis of evidence based nursing, academic bachelor syllabus, Astana medical university.
18. Rakhimova G.I. 2017-2018, Philosophy, academic bachelor syllabus, Astana medical university.
19. Tursumbet E.A. 2017-2018, Introduction to public health, academic bachelor syllabus, Astana medical university.
20. Turgambeva A.K. 2017-2018, Management in nursing, academic bachelor syllabus, Astana medical university.
21. Turgambeva A.K. 2017-2018, Psychological aspects in nursing work, academic bachelor syllabus, Astana medical university.
22. Suleimenova R.K., 2017-2018, Prevention of professional diseases, academic bachelor syllabus, Astana medical university.
23. Karkabaeva A.Zh. 2017-2018, before doctor aid at emergency, academic bachelor syllabus, Astana medical university.
24. Zharykova D.R. 2017-2018 Professional Kazakh language, academic bachelor syllabus, Astana medical university.
25. Kalieva A. K. 2017-2018 Professional Foreign language 2, academic bachelor syllabus, Astana medical university.



26. Shlyapova A.M. 2017-2018, Professional Russian language, academic bachelor syllabus ,Astana medical university.
27. Karkabaeva A.Zh. 2017-2018 Research in nursing, academic bachelor syllabus, Astana medical university.
28. Karkabaeva A.Zh. 2017-2018 Nursing in therapy, academic bachelor syllabus, Astana medical university.
29. Turgambeva A.K. 2017-2018, Information technologies in health care, academic bachelor syllabus, Astana medical university.
30. Turgambeva A.K. 2017-2018, Management of research practice, academic bachelor syllabus, Astana medical university.
31. Turgambeva A.K. 2017-2018, Basis of planning, academic bachelor syllabus, Astana medical university.
32. Turgambeva A.K. 2017-2018, Strategic and operational management in health care, academic bachelor syllabus, Astana medical university.
33. Karkabaeva A.Zh. 2017-2018 Basis of rehabilitology, academic bachelor syllabus, Astana medical university.
34. Turgambeva A.K. 2017-2018, Trade relations in health care, academic bachelor syllabus, Astana medical university.
35. Tursumbet E.A. 2017-2018, Health of population problems and outcomes, academic bachelor syllabus, Astana medical university.
36. Turgambeva A.K. 2017-2018, Medical insurance, academic bachelor syllabus, Astana medical university.
37. Turgambeva A.K. 2017-2018, Quality management, academic bachelor syllabus, Astana medical university.
38. Viklenko G.A. 2017-2018, Propaedeutic of internal diseases, academic bachelor syllabus, Marat Ospanov West Kazakhstan medical university.
39. Viklenko G.A. 2017-2018, Nursing in therapy, academic bachelor syllabus, Marat Ospanov West Kazakhstan medical university.
40. Viklenko G.A. 2017-2018, Introduction to clinic, academic bachelor syllabus, Marat Ospanov West Kazakhstan medical university.
41. Viklenko G.A. 2017-2018, Basis of nursing academic bachelor syllabus, Marat Ospanov West Kazakhstan medical university.
42. Shaizadina F.M. 2017-2018, Nosocomial infections, academic bachelor syllabus, Karaganda state medical university.
43. Sedach N.N. 2017-2018, Business ethics in nursing, academic bachelor syllabus, Karaganda state medical university.
44. Kim A.A. 2017-2018, Infectious diseases, academic bachelor syllabus ,Karaganda state medical university.
45. Sedach N.N. 2017-2018, Management in nursing ,academic bachelor syllabus, Karaganda state medical university.
46. Sedach N.N. 2017-2018, Palliative care, academic bachelor syllabus, Karaganda state medical university.
47. Kulov D.B., 2017-2018, Basis of law in health care, academic bachelor syllabus, Karaganda state medical university.
48. Maretbaeva M.A. 2017-2018, Professional Kazakh language, academic bachelor syllabus, Karaganda state medical university.
49. Burmistrova B.A., 2017-2018, Professional Foreign language, academic bachelor syllabus, Karaganda state medical university.
50. Akisheva Zh.S., 2017-2018, Professional Russian language, academic bachelor syllabus, Karaganda state medical university.



51. Sedach N.N. 2017-2018, Nursing in obstetrics and gynecology, academic bachelor syllabus, Karaganda state medical university.
52. Sedach N.N. 2017-2018, Nursing in neurology, academic bachelor syllabus, Karaganda state medical university.
53. Sedach N.N. 2017-2018, Nursing in family medicine, academic bachelor syllabus, Karaganda state medical university.
54. Sedach N.N. 2017-2018, Nursing in paediatrics, academic bachelor syllabus, Karaganda state medical university.
55. Sedach N.N. 2017-2018, Nursing in surgery and ICU, academic bachelor syllabus, Karaganda state medical university.
56. Sedach N.N. 2017-2018, Nursing in social diseases, academic bachelor syllabus, Karaganda state medical university.
57. Alpysova A.R.. 2017-2018, Emergency care, academic bachelor syllabus, Karaganda state medical university.
58. Akisheva Zh.Sh., 2017-2018, Latin language, academic bachelor syllabus, Karaganda state medical university.
59. Tusupbekova M.M., 2017-2018, Basis of pathology, academic bachelor syllabus, Karaganda state medical university.
60. Temirgaliev G.A. 2017-2018, Philosophy, academic bachelor syllabus, Karaganda state medical university.
61. Sedach N.N. 2017-2018, Propaedeutics of internal diseases, academic bachelor syllabus, Karaganda state medical university.
62. Burmistrova B.A., 2017-2018, Foreign language, academic bachelor syllabus, Karaganda state medical university.
63. Zhaugasheva S.K. 2017-2018, Basis of pharmacology academic bachelor syllabus, Karaganda state medical university.
64. Sedach N.N. 2017-2018, Basis of nursing, academic bachelor syllabus, Karaganda state medical university.
65. Sedach N.N. 2017-2018, Assessment of healthcare, academic bachelor syllabus, Karaganda state medical university.
66. Olzhayeva R.R., 2017-2018, Medical biochemistry, academic bachelor syllabus, Semey state medical university.
67. Olzhayeva R.R.. 2017-2018, Chemistry, academic bachelor syllabus, Semey state medical university.
68. Beleukanova K.M., 2017-2018, Russian language, academic bachelor syllabus, Semey state medical university.
69. Sharapiyeva A.M., 2017-2018 Introduction to profession, academic bachelor syllabus, Semey state medical university.
70. Abduakiova A.E., 2017-2018 ICT, academic bachelor syllabus, Semey state medical university.
71. Sergazina G.M. 2017-2018, Modern history of Kazakhstan, Semey state medical university.
72. Mukhametzhanova Zh.A. 2017-2018 Foreign language, academic bachelor syllabus, Semey state medical university.
73. Shakirova B.T. 2017-2018 Latin language, academic bachelor syllabus, Semey state medical university.
74. M.D. 2017-2018 Kazakh language, academic bachelor syllabus, Semey state medical university.
75. Sharapieva A.M. 2017-2018 Propaedeutics of internal diseases, academic bachelor syllabus, Semey state medical university.
76. Mukhametzhanova Zh.A. 2017-2018 Foreign language 2, academic bachelor syllabus, Semey state medical university.



77. Targynova A.T.2017-2018 Molecular biology, academic bachelor syllabus, Semey state medical university.
78. Sharapiyeva A.M. 2017-2018, Assessment of health condition, academic bachelor syllabus, Semey state medical university.
79. Ozhmukhametova E.K.2017-2018, Basis of pharmacology, academic bachelor syllabus , Semey state medical university.
80. Sholanova M.K.,2017-2018, Basis of nursing , academic bachelor syllabu, Semey state medical university.
81. Derbessalina G.A., 2017-2018, Basis of evidence based nursing, academic bachelor syllabus, Semey state medical university.
82. Sergazina G.M. 2017-2018, Philosophy, academic bachelor syllabus,Semey state medical university.
83. Klbagaeva Zh.E. 2017-2018, Introduction to public health, academic bachelor syllabus, Semey statemedical university.
84. Goremykina M.V.. 2017-2018, Management in nursing, academic bachelor syllabus, Semey state medical universit
85. Zhetmekova Zh.T. 2017-2018, before doctor aid at emergency, academic bachelor syllabus, Semey state medical university.
86. Zhorakpaeva M.D. 2017-2018 Professional Kazakh language, academic bachelor syllabus, Semey state medical university.
87. Beleykhanova K.M. 2017-2018, Professional Russian language, academic bachelor syllabus ,Semey state medical university.
88. Goremykia M.V. 2017-2018 Research in nursing, academic bachelor syllabus, Semey state medical university.
89. Sharapieva A.M. 2017-2018 Nursing in therapy, academic bachelor syllabus,Semey state medical university.
90. Kalbagaeva Zh.E.,2017-2018, Information technologies in health care, academic bachelor syllabus,Semey state medical university.
91. Rakhimzhanova F.S.2017-2018, Management of research practice, academic bachelor syllabus, Semey state medical university
92. Kalbagaeva Zh.E.2017-2018, Medical insurance, academic bachelor syllabus,Semey state medical university.
93. Kasym L.T.2017-2018,Evidence based nursing, academic bachelor syllabus,Semey state medical university

