

## Summary report on research accreditation

### I. General information

Name of organization	<b>National Centre of Public Health</b>
Organization type ( <i>to underline</i> )	Research institute      Higher education institution <u>Ministerial research institute</u>
Research direction (s) of organization	1. Health determinants and priorities of non-communicable diseases, prevention and control measures; 2. Epidemiology of communicable diseases, control and response measures, development and implementation of local antiviral drugs in medical practice.
Correlation with strategic research direction (s) of activity in the field of science and innovation for 2013-2020	Health and Biomedicine
Evaluated period	<b>2010-2014</b>
Web of organization	<a href="http://www.cnsp.md">www.cnsp.md</a>

### II. Research capacity (annual average for evaluated period)

Total number of employees	<b>105</b>					
Number of scientific researchers	<b>57</b>					
Number of researchers who possess honorific titles, scientific degrees, scientific and scientific-didactical titles	ASM full members <b>0</b>	ASM corresp. members <b>1</b>	Professor <b>7</b>	Associated Professor <b>17</b>	Dr.hab. <b>9</b>	Dr. (PhD) <b>33</b>
Number of researchers involved in international projects	European Commission Programmes <b>0</b>	United Nations Programmes and Funds <b>8</b>	Bilateral Programmes financed from the national budget <b>0</b>	Others <b>0</b>		
Number of young researchers (under 35 years old)	PhD students <b>6</b>			Others <b>12.6</b>		
Financial resources - revenues (thousand MDL)	Public budget <b>4948.52</b>			Special means <b>0</b>		
Categories of special means (thousand MDL)	National <b>0</b>			International <b>0</b>		
Distribution of expenditures (thousand MDL)	Salary <b>4583.86</b>	Procurement of scientific equipment <b>19.22</b>	Traveling for scientific purposes (travel, accommodation, per-diems, etc.) <b>69.28</b>	Other <b>271.18</b>		

List of 3 basic research methods, equipments, technologies (per accredited field)	<ol style="list-style-type: none"> <li><b>PCR:</b> The polymerase chain reaction (PCR) is a scientific technique in molecular biology to amplify a single or a few copies of a piece of DNA across several orders of magnitude, generating thousands to millions of copies of a particular DNA sequence.</li> <li><b>ELISA:</b> Enzyme-linked immune-sorbent assay (ELISA) is a popular format of a „wet-lab” type analytic biochemistry assay that uses one sub-type of heterogeneous, solid-phase enzyme immunoassay (EIA) to detect the presence of a substance in a liquid sample or wet sample.</li> <li><b>Cell culture method of diagnosis:</b> is the complex process by which cells are grown under controlled conditions, generally outside of their natural environment.</li> </ol>
List of provided scientific services	Toxicological evaluation of new preparations for plants protection
List of editorial activities	Co-founder of scientific journals: „Public health, economics and management in medicine” (rom.) „Bulletin of the Academy of Sciences. Medical Sciences” (rom.) „Chronicle of public health” (rom.)

### III. Distribution of the number of research projects and themes during the evaluated period

ASM institutional projects	2010 <b>13</b>	2011 <b>9</b>	2012 <b>9</b>	2013 <b>9</b>	2014 <b>9</b>
ASM projects in the frame of State Programmes	2010 <b>2</b>	2011 <b>2</b>	2012 <b>2</b>	2013 <b>0</b>	2014 <b>0</b>
ASM technological transfer projects	2010 <b>0</b>	2011 <b>0</b>	2012 <b>0</b>	2013 <b>0</b>	2014 <b>0</b>
ASM projects for equipment procurement	2010 <b>0</b>	2011 <b>0</b>	2012 <b>0</b>	2013 <b>0</b>	2014 <b>0</b>
ASM projects for young researchers	2010 <b>1</b>	2011 <b>1</b>	2012 <b>0</b>	2013 <b>1</b>	2014 <b>2</b>
ASM projects in the frame of bilateral programmes	2010 <b>0</b>	2011 <b>0</b>	2012 <b>0</b>	2013 <b>0</b>	2014 <b>0</b>
International projects/grants	2010 <b>0</b>	2011 <b>0</b>	2012 <b>1</b>	2013 <b>1</b>	2014 <b>2</b>
List of 3 representative international projects/grants	<ol style="list-style-type: none"> <li>Republic of Moldova Multiple Indicator Cluster Survey, 2012, UNICEF</li> <li>Prevalence of noncommunicable disease risk factors in the Republic of Moldova. STEPS 2013. WHO Regional Office for Europe</li> <li>Establishing Enhanced Approaches to the Control of Public Exposure to Radon, 2014</li> </ol>				
Research contracts	2010 <b>0</b>	2011 <b>0</b>	2012 <b>0</b>	2013 <b>0</b>	2014 <b>0</b>
List of 3 representative research contracts	<b>0</b>				

#### IV. Scientific publications

Total number of publications abroad	Books <b>2</b>	Chapters in books <b>6</b>	Journal papers <b>31</b>
Total number of publications in ISI journals and books	Books <b>0</b>	Chapters in books <b>0</b>	Journal papers <b>8</b>
Total number of publications in the country	Books <b>21</b>	Chapters in books <b>15</b>	Journal papers <b>208</b>
Total number of conference abstracts	International abroad <b>250</b>	International in the country <b>29</b>	National <b>51</b>
List of 5 representative publications (per accredited field)	<ol style="list-style-type: none"> <li>1. OBREJA, G.; SAVIN, Ș.; CIOBANU, A.; ȘALARU, I.; BAHNAREL, I.; PÎSLA, M. etc. <i>Prevalence of noncommunicable disease risk factors in the Republic of Moldova</i>. STEPS 2013. WHO Regional Office for Europe, Denmark, Copenhagen, 2014, 219 p.</li> <li>2. SPÎNU, I.; SPÎNU, C.; PÂNTEA, V.; HOLBAN, T.; CHINTEA, P.; SCOFERȚA, P.; BÎRCĂ, L. et al. <i>News in the treatment and prophylaxis of viral infections. Actualități în tratamentul și profilaxia infecțiilor virale</i>. Ch: Tipografia Sirius SRL, 2012. 128 p. ISBN 978-9975-57-023-7.</li> <li>3. EȚCO, C.; CALMÎC, V.; BAHNAREL, I. <i>Health promotion and health education. Promovarea sănătății și educația pentru sănătate</i>. Ch.: Epigraf, 2013, 600 p. ISBN 978-9975-125-30-7.</li> <li>4. FRIPTULEAC, Gr.; ȘALARU, I.; BERNIC, V. <i>Estimating the impact of water quality on the health of children. Estimarea impactului calității apei potabile asupra stării de sănătate a copiilor</i>. Ch.: S.n., 2013, 315 p. ISBN 978-9975-118-13-2.</li> <li>5. SPÎNU, C.; HOLBAN, T.; GURIEV, V.; SPÎNU, Ig. et al. <i>Viral hepatitis and HIV (etiological, epidemiological, clinical, laboratory diagnosis, treatment and prevention). Hepatitele virale și HIV (aspecte etiologice, epidemiologice, clinice, diagnostic de laborator, tratament și profilaxie)</i>. Ch.: S.m., Tipografia AȘM, 2013, 290 p. ISBN 978-9975-118-12-5.</li> </ol>		
List of 5 citations	<ol style="list-style-type: none"> <li>1. BAHNAREL I., CORETCHI L., DIMOV N., <i>Quality Control and Quality Assurance in Radiation Medicine in the Republic of Moldova</i>, IRPA Regional Congress for Central and Eastern Europe, pag.173-174, 2007 in Romanian Journal of Bioethics, Vol. 7, No. 1, 2008. Cited by: DĂDULESCU E. and al. The risk of medical exposure to ionizing radiations in pediatrics, IRPA 2010 Proceedings: S02-P02 Medical use of radiation p. 319-325.</li> <li>2. URSULEAN, I.; COREȚCHI, L.; CHIRUȚA, IU.; VÎRLAN, S. <i>Estimation of indoor radon concentrations in the air of residential houses and mines in the Republic of Moldova</i>. Romanian Journal of Physics. 2013, Volume 58, Number Suppl., 291-297. ISSN 1221-146X. JCR [IF 2013 0, 745]. In. Global Journal of Health Science ISSN 1916-9736 (Print) ISSN 1916-9744(Online). <a href="#">Vol 8, No 2 (2015)</a> . Cited by: YADOLAH FAKHRI and al. <i>Determination concentration of Radon222 in Tap drinking water; Bandar Abbas City, Iran</i>. In: Journal of Environmental Science, Toxicology and Food Technology. e-ISSN: 2319-2402,p- ISSN: 2319-2399. Volume 9, Issue 6 Ver. III 2015.</li> </ol>		

	<p>3. URSULEAN, I.; COREȚCHI, L.; CHIRUȚA, IU.; VÎRLAN, S. <i>Estimation of indoor radon concentrations in the air of residential houses and mines in the Republic of Moldova. Romanian Journal of Physics.</i> 2013, Volume 58, Number Suppl., 291-297. ISSN 1221-146X. JCR [IF 2013 0, 745]. In. <i>Journal of Environmental Science, Toxicology and Food Technology.</i> e-ISSN: 2319-2402, p- ISSN: 2319-2399. Volume 9, Issue 6 Ver. III 2015. <i>Cited by:</i> AMIR HOSSEIN and al. <i>Concentration and effective dose of Radon 222 in the Genow hot spring; Bandar Abbas City, IRAN.</i> IJISSET - International Journal of Innovative Science, Engineering &amp; Technology, Vol. 2 Issue 6, June 2015. <a href="http://www.ijiset.com">www.ijiset.com</a>.</p> <p>4. BROBERG E., SNACKEN R., ADLHOCH C., BEAUTÉ J., GALINSKA M., PEREYASLOV D., BROWN C., Penttinen P., EDER V., SPÎNU C., on behalf of the WHO European Region and the European Influenza Surveillance Network. Start of the 2014-15 influenza season in Europe: drifted influenza A(H3N2) viruses circulate as dominant subtype. <i>Euro Surveill.</i> 2015;20(4):pii=21023. <i>Cited by:</i> HEGERMANN-LINDENCRONE M. et al. Performance of the European region influenza surveillance network: alignment with global standards. In: <i>Панорама общественного здравоохранения, том 1, выпуск 1, июнь 2015, 79-88.</i></p> <p>5. BROBERG E., SNACKEN R., ADLHOCH C., BEAUTÉ J., GALINSKA M., PEREYASLOV D., BROWN C., Penttinen P., EDER V., SPÎNU C., on behalf of the WHO European Region and the European Influenza Surveillance Network. Start of the 2014-15 influenza season in Europe: drifted influenza A(H3N2) viruses circulate as dominant subtype. <i>Euro Surveill.</i> 2015; 20(4):pii=21023. <i>Cited in:</i> <i>Seasonal influenza in Wales – 2014/15.</i> Lechyd Cyhoeddus Cymru, Public Health Wales. Annual Report, 43 pag.</p>
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## V. Innovation outputs

Total number of patents	Registered in the country <b>6</b>	Registered abroad <b>0</b>	Implemented <b>7</b>
Total number of new developed methods and technologies	Registered <b>2</b>	Non-registered <b>0</b>	Implemented <b>2</b>
Total number of new scientific products	Registered <b>2</b>	Non-registered <b>0</b>	Implemented <b>2</b>
List of 5 representative innovation outputs (per accredited field)	<p>1. <b>Patent nr.223:</b> Method of revaccination of children against the hepatitis B (Spînu Constantin, MD; Iarovoi Petru, MD; Pântea Victor, MD; Vrânceanu-Beneș Angela, MD). BOPI 30.06.2010</p> <p>2. <b>Patent nr.4177:</b> Method of vaccination against hepatitis B of persons with immunodeficiency (Spînu Constantin, MD; Isac Marina, MD; Chintea Pavel, MD; Guriev Vladimir, MD; Spînu Igor, MD; Șveț Stepan, MD). BOPI 7/2012</p> <p>3. <b>Patent nr.667:</b> Method of treatment of infectious mononucleosis of children; 31.08.2013 (Spînu Constantin, MD; Bîrcă Ludmila, MD; Spînu Igor, MD; Cornilov Stela, MD; Sajen Octavian, MD). BOPI 8/2013</p>		

	<p>4. <b>Patent nr.4218:</b> Method for diagnosis of infections caused by enterobacteria producers of betalactamases; 30.04.2013 (Burduniuc Olga, MD; Cojocar Radu, MD; Spînu Constantin, MD; Gheorghîța Stela, MD; Roșcin Iurie, MD) BOPI 4/2013</p> <p>5. <b>Patent nr.782:</b> Method of vaccination against influenza; 30.06.2014 (Spînu Constantin, MD; Scoferța Petru, MD; Spînu Igor, MD; Eder Veronica, MD; Donos Ala, MD) BOPI 6/2014</p>
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## VI. Other outputs

Total number of scientific outputs for central and local authorities (draft of law, strategies etc.)	<b>102</b>		
Total number of scientific outputs for educational institutions	Handbooks for higher education <b>18</b>	Handbooks for pre-university institutions <b>0</b>	Number of researchers – supervisors of license and master theses <b>6</b>

## VII. Major scientific and innovation achievements

Short description of main scientific results and their confirmation (by awards, citations, development of international projects etc.)	<ul style="list-style-type: none"> <li>• As result of investigating the health status of children and adolescents from rural area, it was revealed that the respiratory diseases prevail in the structure of pupil' morbidity, making up to 34.3% of all registered diseases. The tools for assessing the pupil health risks and the behaviour standards of disease prevention for secondary school students were developed.</li> <li>• On the basis of multiple quantification of the concentration of natural radionuclides in environmental components, the risk of exposure of Moldovan population to ionizing radiation was established and a set of appropriate measures for radiation protection was developed.</li> <li>• The health risks of very high and very low temperatures were identified and the economic losses caused by premature deaths because of extreme temperatures were calculated. The project of an Action plan on adaptation of health sector to extreme temperatures was prepared.</li> <li>• The study on different groups regarding their risks of infection with viral hepatitis B and C demonstrated that the health-care workers of surgical profile are exposed to an increased risk of infection with hepatitis B and C. TB patients, intravenous drug users, HIV and patients receiving haemodialysis represents a high risk of infection with parenteral viral hepatitis and should be tested for markers of hepatitis B and C, vaccinated against viral hepatitis B.</li> <li>• The investigation of herpes infection at patients with syndrome of viral hepatitis, who were absent at markers of virus B, C and D, revealed that 18% of non-identified from origin point of view viral hepatitis are caused by herpesviruses, including Herpes simplex, Cytomegalovirus, and Epstein Barr, correspondingly 2.0%, 3.5% and 12.5%.</li> <li>• Occurrence of three influenza viruses - A(H1N1)pdm, A(H3N2) and influenza virus type B – has been recorded during 2011-2012, 2012-2013 and 2013-2014 seasons. The application of influenza virologic, clinical and epidemiological surveillance system (IACRS and SARI),</li> </ul>
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	<p>correlated to the requirements of WHO, ECDC, CDC and integrated into the European surveillance system EuroFlu / TESSy, allowed identifying new substitutions of amino acids, which could influence the pathogenicity, tropism and transmission capacity of influenza viruses from one species to another.</p> <ul style="list-style-type: none"> <li>• Surveillance of infections included in the National Immunization Program has demonstrated that the objective envisaged by the Program on vaccination coverage (<math>\geq 95\%</math>) was not achieved in some administrative areas of the country, because of false contraindications to vaccination. This phenomenon is dependent on the professional competence of health workers.</li> <li>• There have been obtained new data on the water quality of various sources from the hydrographical basin of the Prut River. According to both chemical and microbiological parameters, the highest share of non-compliant samples was recorded in the case of water from wells. The population sickness risk in dependence of the chemical composition of drinking water was determined.</li> <li>• Studies on the occurrence of Salmonella serotypes showed that the most common serotypes are: <i>S. enteritidis</i> 773 (61%), <i>S. typhimurium</i> 304 (24%), and <i>S. bovis/morbificans</i> 21 (2%), also being identified such serotypes as <i>S. derby</i>, <i>S. kottbus</i>, <i>S. hadar</i>, etc. Strains of Salmonella have shown sensitivity for preparation: cefepime (96.7%), ampicillin (94%), gentamicin (94%), tetracycline (93%), cefamandole (89%).</li> </ul>				
Number of researchers invited as speakers at international conferences	2010 2	2011 1	2012 1	2013 2	2014 2
Short description of technological transfer and innovation results and their certification by implementation	<p>1. <b>Patent nr.4177 „Method of vaccination against hepatitis B of persons with immunodeficiency”</b>. The invention relates to medicine and can be used in the prevention of viral hepatitis B to increase the effectiveness of vaccination.</p> <p>The method for vaccination consists in that simultaneously with hepatitis B vaccine is also administered an adaptogenic vegetal preparation with the active substance steroid glycoside 3-O-<math>\{[\alpha\text{-L-rhamnopyranosyl}(1\rightarrow3)]\text{-}[\beta\text{-D-glucopyranosyl}(1\rightarrow2)]\text{-}\beta\text{-D-glucopyranosyl}\}\text{-}[(25\text{R})\text{-furost-5-en,3}\beta,22\alpha,26\text{-triol}]\text{-}26\text{-O-}\beta\text{-D-glucopyranoside}</math> (mestim), in tablets of 50 mg, one tablet in the morning 30 minutes before a meal, within 30 days, beginning with the first day of administration of the vaccine.</p> <p>The result consists in intensifying the process of immunogenesis expressed in an increased titer of protective antibodies, which leads to a reduction in the risk of HBV infection to a minimum for persons with immunodeficiency and a reduction in the number of persons, non-respondent to the vaccine.</p> <p>2. <b>Patent nr.596 „The method for the treatment of chronic hepatitis C of children”</b>. The invention relates to medicine, in particular to hepatology, and can be used for the treatment of chronic viral hepatitis C. According to the invention, the claimed method consists in that it is administered the basic therapy and additionally, is concomitantly administered <i>per os</i> 5<math>\alpha</math>-furostan-3<math>\beta</math>,22,26-triol-3-[O-<math>\beta</math>-D-glucopyranosyl(1<math>\rightarrow</math>2)-<math>\beta</math>-D-glucopyranosyl(1<math>\rightarrow</math>4)-<math>\beta</math>-D-galactopyranosyl] -</p>				

	<p>26-O-β-D-glucopyranosyl, twice a day, and 3-O-[β-D-glucopyranosyl(1→2)]-[β-D-glucopyranosyl(1→3)]-[β-D-glucopyranosyl(1→4)]-β-D-galactopyranosyl[(25R)-5α-furostan-2α,3β,22α,26-tetraol]-26-O-β-D-glucopyranosyl, once a day, both remedies are administered in a doze of 50 mg, beginning with the first day of clinical manifestations, 30 minutes before meal, during 3 months.</p> <p><b>3. Patent nr.782, 16.07.2013: „ The method of vaccination against influenza”.</b> The invention relates to medicine, in particular to infectious diseases and can be used for prophylaxis of influenza.</p> <p>According to the invention, the claimed method consists in that it is administered the virus vaccine and concomitantly is administered a remedy comprising to a capsule: (tomatozide-5α furostan-3α,22,26triol-3[O-β-galactopyranosyl(1→2)β-D-glucopyranosyl(1→4)-β-D-galactopyranoside]-26-O-β-D glucopyranoside) – 0,05 g; microcrystalline cellulose – 0,147 g; corn starch – 0,100 g, magnesium stearate – 0,003 g, one capsule, 30 minutes before a meal, for 30 days.</p>				
Number of defended dr./dr. hab. theses per year	2010 2/1	2012 1/0	2013 2/0	2014 2/0	2015 3/1

#### VIII. Present/further involvement in the Horizon 2020 (FP7)

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#### IX. Accredited research field and its evaluation by the National Council for Accreditation and Attestation of the Republic of Moldova (very good/good/satisfactory)

*„Hygiene and Epidemiology” – good*

#### X. Category (A/B/C) attributed by the National Council for Accreditation and Attestation of the Republic of Moldova to the organization

Category A

#### XI. Institutional development actions planned for the next 5 years

1. To provide scientific support in developing and implementing the national programs for prevention and control of communicable and non-communicable diseases.
2. To foresee in each research project the identification, assessment, measurement, prognosis of risks for public health and measures to be taken in order to diminish them.
3. To continue collaboration with national and international organizations specialized in the implementation of joint public health and technology transfer projects.
4. To strengthen the logistical support for staff training, improvement and recycling, including PhD and postdoctoral studies.
5. To engage and support the involvement of young scientists in research and development areas.
6. To enhance the activity of publishing scientific results in national and international journals, including ISI and electronic ones.