



COURSE UNIT DESCRIPTION

Course unit title	Code
Internal medicine, family medicine, hematology and gerontology (2023-2024)	<i>VIDH3115</i>

Lecturer(s)	Department(s)
Coordinator: prof. PhD. Virginijus Šapoka. Others: prof. PhD. Vytautas Kasiulevičius; prof. PhD. Laimonas Griškevičius; assoc.prof. PhD.Vilma Dženkevičiūtė; assoc.prof. PhD Lina Vencevičienė; assist.PhD.Valdas Pečeliūnas, assist. Andrius Žučėna, lectur. Lina Kryžauskaitė, lectur. Rita Čekauskienė, lectur. Skirmantė Černauskienė, lectur Regina Pileckytė, lectur. PhD Aušra Marcijonienė, assoc.prof..PhD Neringa Burokienė; assoc.prof.PhD Jūratė Pečeliūnienė, lectur.Liucija Vaitkevičiūtė; lectur. Sandra Kasnauskienė, asist.PhD.Asta Mastavičiūtė, lectur.Andrius Degulys, assist. PhD Rima Kavalnienė, lectur. Augutė Juozapavičiūtė, lectur. Getautė Matiekutė, lectur. Tadas Adomavičius, lectur Mantas Riauka, assist. J. Kilaitė, lectur Andrius Apšega, lectur Ieva Gailiūtė.	Vilnius University, Faculty of Medicine, Clinic of Internal medicine and family practice, Santariškių st. 2 Vilnius. Vilnius University, Faculty of Medicine, Clinic of Hematology and Oncology, Santariškių st. 2 Vilnius.

Study level	Level of the course unit	Type of the course unit
integrated studies (I and II level)	-	Compulsory

Mode of realization	Period of realization	Language of realization
Face-to-face	Year V, spring semester, 4 February to 23 June	Lithuanian

Prerequisites and corequisites	
Prerequisites: A student must have completed the following courses: propaedeutic of internal diseases, children diseases, basics of subspecialties of internal diseases, obstetrics, gynaecology and general surgery.	Corequisites (if any): none.

Number of ECTS credits allocated to the course unit	Total student's workload	Contact hours	Self-study hours
10	267	132	135

Purpose of the course unit: programme competences to be developed
Develop a holistic approach of a student towards disease diagnostics, prevention and long-term care. Upon completion of the course, students must be able to provide consultations to the patient, know the most common clinical syndromes and diseases in the work of an internist and a family doctor, prescribe appropriate treatment within limits of competence, know the basics of prophylactic medicine, and understand indications for a referral to a specialist.

Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
1. Be able to provide consultations to the patient: 1.1. Collection of the case history 1.2. Medical examination 1.3. Clinical assessment conclusion and making judgments 1.4. Provide explanations and advice to patients 1.5. Provide confidence and support to patients 1.6. Assess the mental state of patients	Lectures; seminars; problem teaching; demonstration; active learning methods (brainstorming, group discussion); research methods (information search, presentation preparation); independent work.	Students group interview; evaluation of presentation; OSCE (objective structural clinical examination). Exam-test (closed-ended tasks/questions) at the end of the course unit.
2. Know the most common clinical syndromes in the work of an internist and a family doctor:	Lectures; seminars; problem teaching; demonstration;	Students group interview; evaluation of

<p>2.1. Recognise and assess the severity and importance of clinical signs 2.2. Order required tests and interpret their results 2.3. Carry out differential diagnostics 2.4. Compile the relevant patient monitoring plan</p>	<p>active learning methods (brainstorming, group discussion); research methods (information search, presentation preparation); independent work.</p>	<p>presentation; OSCE. Exam-test (closed-ended tasks/questions) at the end of the course unit.</p>
<p>3. Be able to administer treatment: 3.1. Be able to administer adequate and appropriate treatment 3.2. Be able to combine the relevant medicines and other treatment methods in the clinical context 3.3. Be able to assess the appropriateness and potential benefit and harm of medicines and other treatment methods.</p>	<p>Lectures; seminars; problem teaching; demonstration; active learning methods (brainstorming, group discussion); research methods (information search, presentation preparation); independent work.</p>	<p>Students group interview; evaluation of presentation; OSCE. Exam-test (closed-ended tasks/questions) at the end of the course unit.</p>
<p>4. Be able to apply ethical and legal principles in the medical practice: 4.1. Be able to maintain confidentiality 4.2. Be able to apply ethical principles in clinical practice 4.3. Be able to complete informed consent forms 4.4. Be able to issue a death certificate</p>	<p>Lectures; seminars; problem teaching; demonstration; active learning methods (brainstorming, group discussion); research methods (information search, presentation preparation); independent work.</p>	<p>Students group interview; evaluation of presentation; OSCE. Exam-test (closed-ended tasks/questions) at the end of the course unit.</p>
<p>5. Be able to assess psychological and social aspects for a patient's disease: 5.1. Be able to assess psychological factors and impact on disease episode 5.2. Be able to assess social factors and impact on disease episode 5.3. Be able to identify potential stress related to the disease 5.4. Be able to identify the impact of alcohol and other harmful factors, addictions</p>	<p>Lectures; seminars; problem teaching; demonstration; active learning methods (brainstorming, group discussion); research methods (information search, presentation preparation); independent work.</p>	<p>Students group interview; evaluation of presentation; OSCE. Exam-test (closed-ended tasks/questions) at the end of the course unit.</p>
<p>6. Understand the principles of efficient communication in medical practice: 6.1. Communicate with patients 6.2. Communicate with colleagues 6.3. Communication in reporting bad news 6.4. Communication with patients during completion of consent forms 6.5. Communication in writing (as well as completion of case history) 6.6. Work in a team</p>	<p>Lectures; seminars; problem teaching; demonstration; active learning methods (brainstorming, group discussion); research methods (information search, presentation preparation); independent work.</p>	<p>Students group interview; evaluation of presentation; OSCE. Exam-test (closed-ended tasks/questions) at the end of the course unit.</p>
<p>7. Be able to apply evidence-based medical principles, skills and knowledge: 7.1. Be able to use scientifically-based evidence 7.2. Be able to search for the relevant literature 7.3. Be able to critically assess published medical literature</p>	<p>Lectures; seminars; problem teaching; demonstration; active learning methods (brainstorming, group discussion); research methods (information search, presentation preparation); independent work.</p>	<p>Students group interview; evaluation of presentation; OSCE. Exam-test (closed-ended tasks/questions) at the end of the course unit.</p>

Topics	Contact work hours							Time and tasks of self-study	
	Lectures	Consultations	Seminars	Practice	Laboratory work	Practical training	Total contact hours	Self-study	Tasks
1.Principles of family medicine	2		-	-			2	2	To know the Family Doctor Standard and principles of the team work in primary healthcare.
2.Principles of determining the diagnosis and diagnostic mistakes	-		3	1			4	4	Learn the principles of determining the diagnosis and prepare a presentation.
3.Osteoporosis in family doctor practice	-		3	2			5	5	Learn about the structure and physiological processes of bone tissue, understand the results of bone mineral density (BMD) test and know the possible strategies for osteoporosis treatment.
4.Differential diagnosis of acute and chronic pain	-		2	2			4	4	Acute and chronic pain. Somatic, visceral and neuropathic pain. Pain evaluation, scales. WHO recommended stages of pain treatment. Principles of non-drug pain treatment.
5.Acute respiratory infections	-		3	2			5	5	Learn Lithuanian and European acute respiratory infections guidelines.
6. Basics of consulting patients with multimorbidity	-		2	1			3	3	Learn about types of the relationship between doctors and patients with multimorbidity and scales used to assess the condition of patients with multimorbidity.
7. Prevention of diseases in family medicine	-		1	2			3	3	Learn about prevention of infectious and non-infectious diseases in children and adults in Lithuania, screening programs for early detection of diseases.
Vidaus ligos									
8. Algorithms for chest pain differential diagnostics.	1		2	2			5	5	Know the causes of the urgent cardiac and non cardiac chest pain, understand its aetiology and pathogenesis, know principles of differential diagnose. Understand the relationship between myocardial injury and thrombosis markers with ECG alterations in various urgent conditions. Be able to diagnose and treat causes of life-threatening chest pain.
9.Syndrome of fever of unknown origin (FUO).	1		2	2			5	5	Understand the concept of fever, hyperthermia and FUO. Know the types of fever. Know the peculiarities of fevers of different origin –

								infectious, neoplastic and due to connective tissue diseases. Understand the principles of searching for fever causes using laboratory and instrumental assays. Possible principles of empirical treatment.	
10. Differential diagnosis of edema syndrome	1		2	2			5	5	Know the causes of edema formation in the body (increased capillary hydrostatic pressure, hyponcotemia, mechanical obstruction, impaired lymphatic drainage, increased capillary permeability, etc.), be able to differentiate systemic and local, pitting and non-pitting edemas, be able to suspect, diagnose chronic venous insufficiency, DVT, abdominal venous thrombosis and apply antithrombotic treatment.
11. Pathology of the lymphatic system.	1		1	1			3	3	Learn about the isolated lymphadenopathies and their possible complications, differential diagnostics of hepatosplenomegaly and lymphedema.
12. Primary and secondary prophylactics of cardiovascular diseases.	1		2	2			5	5	Understand the basic principles of primary and secondary prevention. Know the early diagnostic options and treatment of atherosclerosis. Be able to distinguish high-risk groups of cardiovascular diseases. Learn about the congenital dyslipidemias – their health risks and treatment principles.
13. Anemias differential diagnosis			1	1			2	2	Know the classification of anemias, the basics of differential diagnosis, clinical symptoms and to be able to evaluate laboratory tests. Anemia during pregnancy. To know for emergency assistance. Be able to provide adequate treatment of anemias and know the principles of prevention.
14. Differential diagnosis of liver failure and jaundice	1		2	2			5	5	To learn how to differentiate the most often causes of liver failure and prehepatic, intrahepatic and posthepatic jaundice. To discuss clinical signs, learn how to evaluate diagnostic and laboratory tests, understand basic treatment principles.
15. Differential diagnostics of abdominal and lower back pain in the practice of internal medicine.			1	1			2	2	Know the most common causes of abdominal and lower back pain. Learn about the causes of acute abdominal pain of non-surgical origin. Understand the diagnostic differences between acute and chronic lower back pain. Know the rule of 'Red flags'. Learn about the principles and recommendations of lower back pain treatment.

16. Loss of consciousness: differential diagnostics.	1		1	1			3	3	Learn about the differentiation of the most common causes of unconsciousness. Be able to identify urgent conditions, evaluate the risk of sudden death and choose the right tactics of testing and treatment.
17. Differential diagnostics of dyspnoea.	1		1	1			3	3	Discuss about the most common causes and differential diagnostics of cardiac and pulmonary dyspnoea. Understand the etiology and pathogenesis of acute and chronic heart failure, principles of diagnostics and treatment, prophylactics and treatment of its possible complications.
18. Arrhythmias and other conditions when long-term antithrombotic treatment is needed.			1	1			2	2	Learn about the anticoagulation and antithrombotic treatment tactics, complications following arrhythmia and their correction. Be able to estimate the risk of embolic complications and bleeding for patients with recurrence arrhythmias and individual antithrombotic treatment principles.
Hematologija									
19. Lymphoproliferative diseases.	1		2	2			5	5	Learn about the molecular pathogenesis of lymphoproliferative diseases, imunohisto(cyto)chemical diagnostics, classification, stages of the disease, risk factors, complications and treatment principles.
20. Chronic lymphocytic leukemia, autoimmune complications of blood diseases	1		2	2			5	5	To get acquainted with the molecular pathogenesis, stadiation, clinic, evolution, complications, treatment indications and principles of these diseases.
21. Acute leukemia, myelodysplastic syndromes.	1		2	2			5	5	To get acquainted with differential diagnosis of bleeding syndrome, clinic, complications, treatment principles, diagnostics of acute leukemia, principles of molecular initiation, complications, urgent conditions, treatment principles.
22. Paraproteinemias.	1		2	2			5	5	Learn about the differential diagnostics of paraproteinemias, separate nosologies, their diagnostics, complications and treatment principles.
23. Clinical transfusiology.	1		2	2			5	5	To get acquainted with blood components nomenclature and preparation principles, storage conditions, transfusion indications, transfusion principles, transfusion-related complications and their prevention and treatment principles.
24. Myeloproliferative diseases	1		2	2			5	5	To get acquainted with the molecular pathogenesis, stadiation, clinic, evolution, complications, treatment indications and principles of these diseases

25. Blood failure syndrome. Erythrocyte pathology syndromes.	1		2	2				5	5	To get acquainted with differential diagnosis of bleeding syndrome, clinic, complications, treatment principles. To get acquainted with differential diagnostics of erythrocyte pathology, clinic, complications, treatment principles.
26. Congenital and acquired haemophilia syndromes. Congenital and acquired thrombophilic syndromes	1		2	2				5	6	To get acquainted with the molecular pathogenesis, clinic, complications, treatment indications and principles of these diseases.
Geriatrija										
27. Demographical indices and changes in Lithuania and world. History of geriatric medicine in Lithuania. Theories of aging. Process of normal aging. Healthy aging.	1							1	2	Search of scientific and informational material about theories of aging, normal aging.
28. Comprehensive geriatric assessment	1		2	2				5	5	Case study: physical, mental, functional and social evaluation Modelling of coordinated plan according to biopsychosocial disorders and discussion about results
29. Main geriatric syndromes: falls, syncope, immobility, incontinence, frailty, malnutrition, insomnia	2		2	2				6	6	Case study and presentation about geriatric syndromes Reflection about patients
30. Main diseases and their particularity in elderly. Differences between normal aging and pathology	1			2				3	4	Scientific search about particularity of diseases in elderly patient, relationship between normal aging and pathology
31. Cognitive and emotional disorders in elderly	1		2	2				5	5	Case study: physical, mental and functional evaluation Reflection about patients
32. Differences in pharmacokinetics and pharmacodynamics in aging. Medication in elderly: indications, efficiency, bioavailability, side effects, drug-drug, drug-disease interactions. Polypharmacy. Palliative care	1		2					3	3	Reading about pharmacokinetics and pharmacodynamics changes in aging Case study and presentation about medical treatment in elderly patient
33. Rehabilitation of elderly patient. Planning of continued care. Ethical and legal aspects of elderly patient health care.	1		2					3	4	Search and analysis of legal document about elderly health care in Lithuania and European Union Reflection about patients
Altogether	26		56	50				132	135	

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Estimation strategy	Rating (%)	Estimation period	Estimation criteria
Work in the classroom during seminars		During the semester	0 points: hardly participates in the discussion or misses the seminar. If you collect more than one 0 - settlement
Evaluation of presentation		During the course unit	0 points: did not prepare or did not participate in the preparation of reports (if they were organized)
OSCE (objective structural clinical examination)		During the course unit	Student is able to carry out the following tasks: <ul style="list-style-type: none"> – Collect the case history; – Use physical methods (examination, percussion, palpation, auscultation) to identify the main symptoms and syndromes; – Assess the diagnostic importance of measurements and laboratory tests; – Formulate and substantiate the diagnosis; – Prepare the initial and final treatment plan for the patient.
Examination: test at the end of the semester	100 %	February - June	The test is composed of 64 closed-ended questions and clinical situations (of different complexity, from understanding to assessment), each worth one point. The assessment is as follows: <p>10 - Excellent knowledge and skills. Assessment level- more than 75% correct answers.</p> <p>9 - Very good knowledge and skills there may be minor errors. Synthesis level - less 75% till 68% correct answers.</p> <p>8 - Good knowledge and skills, there may be some errors. Less 68% till 61% correct answers.</p> <p>7 - Average knowledge and skills, there are errors. Analysis level. Less 61% till 54% correct answers.</p> <p>6 - Knowledge and skills below average, there are (major) errors. Knowledge application level. Less 54% till 47% correct answers.</p> <p>5 - Knowledge and skills still meet minimum requirements. Many errors. Knowledge and understanding level. Less 47% till 40% correct answers.</p> <p>4 - Minimum requirements are not met. Less than 40% correct answers.</p>

Required reading				
Kasiulevičius Vytautas ir kt.	2021	Šeimos medicina: šiuolaikinis ligų diagnostikos, gydymo ir prevencijos vadovas		Vilnius, VšĮ NMMC
Joseph S. Esherrick, Evan D. Slater, Jacob A. David	2017	CURRENT Practice Guidelines in Primary Care 2017	17	McGraw-Hill Education Online access through “Access medicine” database (VU subscription): http://accessmedicine.mhmedical.com/book.aspx?bookid=1977
Maxine A. Papadakis, Stephen J. McPhee, Michael W. Rabow	2017	Current Medical Diagnosis & Treatment 2017	56	McGraw-Hill Education Online access through “Access medicine” database (VU subscription):

				http://accessmedicine.mhmedical.com/book.aspx?bookid=1843
<u>Thomas G. DeLoughery</u> (Editor)	2019	Hemostasis and Thrombosis		Springer 4th ed. 2019
<u>Victor Hoffbrand, David P. Steensma</u>	2019	Hoffbrand's Essential Haematology	8th Edition	https://www.wiley.com/en-ae/Hoffbrand%27s+Essential+Haematology%2C+8th+Edition-p-9781119495901
<u>Eugene C. Toy; John T. Patlan; Mark T. Warner; John T. Patlan</u>	2021	<u>Case Files: Internal Medicine 6th</u>	ISBN: 9781260469967	
Dennis Kasper, Anthony Fauci, Stephen Hauser, Dan Longo, J. Larry Jameson, Joseph Loscalzo	2022	Harrison's Principles of Internal Medicine, 19e	19	McGraw-Hill Education Online access through "Access medicine" database (VU subscription): http://accessmedicine.mhmedical.com/book.aspx?bookid=1130
Scott D.C. Stern, Adam S. Cifu, Diane Altkorn	2015	Symptom to Diagnosis: An Evidence-Based Guide	3	McGraw-Hill Education Online access through "Access medicine" database (VU subscription): http://accessmedicine.mhmedical.com/book.aspx?bookid=1088
Robert H.Seler	2007	Dažniausių klinikinių simptomų diferencinė diagnostika.		Vilnius, UAB „Vaistų žinios“
Chris Barry et al.	2010	Hypertension in Pregnancy. The Management of Hypertensive Disorders During Pregnancy		National Collaborating Centre for Women's and Children's Health (UK).
Christie Ballantyne	2014	Clinical Lipidology: A Companion to Braunwald's Heart Disease		2nd Edition
Robert N. Taylor et al.	2018	Chesley's Hypertensive Disorders in Pregnancy		Fourth Edition
D. L. Kasper et al.	2018	Harrison's Principles of Internal Medicine,		San Francisco, 20 th Edition
Robert S. Porter	2018	The Merck Manual of Diagnosis and Therapy		20 th Edition
Lesauskaitė V, Damulevičienė G, Knašienė J, Kučikienė O, Macijauskienė J.	2017	Geriatrija. Vadovėlis.	LSMU Leidybos namai.	

Halter J, Ouslander J, Studenski S, High K, Asthana S, Supiano M	2017	Hazzard's Geriatric Medicine and Gerontology	Hazzard's Geriatric Medicine and Gerontology	http://accessmedicine.mhmedical.com/book.aspx?bookid=1923
Fillit HM, Rockwood K, Young JB	2016	Brocklehurst's Textbook of Geriatric Medicine and Gerontology	Elsevier Ltd	https://www.clinicalkey.com#!/browse/book/3-s2.0-C20120076016
Ham R, Sloane P, Warshaw G, Potter J	2014	Ham's Primary Care Geriatrics	Saunders	https://www.clinicalkey.com#!/browse/book/3-s2.0-C20110041042
Mastavičiūtė A, Kilaitė J	2021	Senatvinės sarkopenijos diagnostika		Vilniaus universiteto leidykla
Montero-Odasso M, van der Velde N, Martin FC et al.	2022	World guidelines for falls prevention and management for older adults: a global initiative		Age and Ageing, Volume 51, Issue 9, September 2022, afac205, https://doi.org/10.1093/ageing/afac205
LR SAM įsakymas Nr.V-548	2004	Dėl Atrankinės patikros dėl gimdos kaklelio patologijos programos atlikimo metodikos patvirtinimo		https://www.e-tar.lt/portal/lt/legalAct/TAR.3530D79A5856/asr
LR SAM įsakymas Nr. V-901	2004	Dėl Atrankinės moterų mamografinės patikros programos atlikimo metodikos patvirtinimo		https://www.e-tar.lt/portal/lt/legalAct/TAR.D3B1BB5921DE
LR SAM įsakymas Nr. V-973	2005	Dėl Priešinės liaukos vėžio ankstyvosios diagnostikos finansavimo programos patvirtinimo		https://www.e-tar.lt/portal/lt/legalAct/TAR.62EC76ABAC7D/asr
LR SAM įsakymas Nr. V-913	2005	Dėl Asmenų, priskirtinų širdies ir kraujagyslių ligų didelės rizikos grupei, atrankos ir prevencijos priemonių finansavimo programos patvirtinimo		https://www.e-tar.lt/portal/lt/legalAct/TAR.989A59214850/asr
LR SAM įsakymas Nr. V-508	2009	Dėl Storosios žarnos vėžio ankstyvosios diagnostikos finansavimo programos patvirtinimo		https://www.e-tar.lt/portal/lt/legalAct/TAR.18E44723B39F/asr
LR SAM įsakymas Nr. V-955	2018	Dėl Lietuvos Respublikos vaikų profilaktinių skiepimų kalendoriaus patvirtinimo		https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/c7bf0da1ab8f11e8aa33fe8f0fea665f/asr
LR SAM įsakymas Nr. V-115	2019	Dėl Nacionalinės imunoprofilaktikos 2019-2023 metų programos patvirtinimo		https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/a88940c123b911e9b246d9cc49389932/asr
Prof. habil. dr. Arvydas Ambrozaitis ir bendraautoriai	2022	Suaugusiųjų skiepimo Lietuvoje rekomendacijos. Trečiasis atnaujintas leidimas.	Lietuvos infektologų draugija	ISBN 978-9955-9742-7-7

Recommended reading				
Blundell A, Gordon A	2015	Geriatric Medicine at a Glance	Wiley-Blackwell	
Hutchison LC, Sleeper RB	2015	Fundamentals of Geriatric Pharmacotherapy	American Society of Health-Systems Pharmacists	
Kane R, Ouslander J, Abrass I, Resnick B	2013	Essentials of Clinical Geriatrics	McGraw-Hill Professional	
Bowker L, Price J, Smith S	2012	Oxford Handbook of Geriatric Medicine	Oxford University Press	
Scott D.C.Stern	2006	Symptom to diagnosis.		USA, Lange Medical Books/ McGraw-Hill
Ian R. McWhinney	2009	Textbook of family medicine.		New York, Oxford university press
Swerdlow S. et al.	2017	WHO Classification of Tumours of Haematopoietic and Lymphoid Tissues	4th edition	https://publications.iarc.fr/Book-And-Report-Series/Who-Classification-Of-Tumours/WHO-Classification-Of-Tumours-Of-Haematopoietic-And-Lymphoid-Tissues-2017
Roger Jones	2005	Oxford Textbook of Primary Medical Care		Oxford University Press.
R. S. Dieter et al.	2009	Peripheral arterial disease		New York, Chicago
Walter Siegenthaler	2007	Differential Diagnosis in Internal Medicine: From Symptom to Diagnosis		Thieme Medical Publishers, New York
Provan D. et al	2010	Molecular Hematology		Wiley-Blackwell, 3rd edition
Mulders-Manders C, Simon A. et al.		Fever of unknown origin.		<i>Clinical Medicine</i> . 2015 Jun 1. 15:280-284.
Adukauskienė D., Kinderytė A., Tarasevičius R., Vitkauskienė A.	2006	Uroinfekcijos etiologija, rizikos veiksniai ir baigtis.		42(10):805-09
Lopez Mj, Cortez ja.	2011	Urinary tract colonization and infection in critically ill patients		Http://dx.Doi.Org/10.1016/j.Medine.2011.06.003 , Med intensiva 2012;36(2):143-51.
Al-qas Hanna F, Sambirska O, Iyer S, Szpunar S, Fakhri Mg.	2013	Clinician practice and the national healthcare safety network definition for the diagnosis of catheter-associated urinary tract infection.		Am J infect control 2013;13:973-5. Http://dx.Doi.Org/10.1016/j.Ajic.2013.05.024
Al-Tawfiq ja, Amalraj A, Memish Za	2013	Reduction and surveillance of device-associated infections in adult intensive care units at a saudi arabian hospital, 2004-2011		Int J infect dis 2013;13:228-32. Http://dx.Doi.Org/10.1016/j.Ijid.2013.06.015

Vincent JL, Rello J, Marshall J	2009	International study of the prevalence and outcomes of infection in intensive care units.		302:2323-9. Http://dx.Doi.Org/10.1001/jama.2009.1754
Segagni Lusignani L, Blacky A, Starzengruber P	2016	national point prevalence study on healthcare-associated infections and antimicrobial use in austria.		Wien klin wochenschr 2016;10:1-6 http://dx.Doi.Org/10.1007/s00508-015-0947-8