

PERSONAL INFORMATION **Alar Irs**WORK EXPERIENCE

- January 2012- Present **Chief Medical Officer**
Estonian State Agency of Medicines (Ravimiamet) (Estonia)
Responsibility for the medical quality of the Agency's output and co-ordination of the Estonian participation at the European Medicines Agency's scientific bodies.
- September 2021- Present **Head, Clinical Area 3 (Cardiology, Thoracic diseases, ENT and Stomatology)**
Tartu University Hospital (Estonia)
Management of a division of Tartu University Hospital.
- September 2017- Present **Teaching physician, cardiologist**
Tartu University Hospital (Estonia)
Patient care in interventional and intensive care cardiology, under- and postgraduate teaching.
- January 2009-December 2017 **Lecturer in Clinical Pharmacology**
University of Tartu (Estonia)
Teaching clinical pharmacology, pharmacoepidemiology, pharmacoconomics, clinical trial methodology and pharmacotherapy to 6th year medical and 4th year pharmacy students as well as residents and post-graduate students, providing CME in clinical trial conduct and therapeutics.
- January 2003-December 2011 **Deputy Director General**
State Agency of Medicines (Ravimiamet) (Estonia)
Co-ordination of the Agency's day-to-day activities and of the Estonian participation in the EU drug regulatory bodies.
- January 2001-December 2002 **Head, Department of Human Medicines**
Estonian State Agency of Medicines (Ravimiamet) (Estonia)
Co-ordination of the Agency's work in marketing authorisation, pharmacovigilance and drug statistics, clinical trial oversight and in EU accession.
- January 1998-December 2000 **Medical Officer, GCP and Clinical Trials**
Estonian State Agency of Medicines (Ravimiamet) (Estonia)
Assessment of clinical trial applications submitted to the Agency, GCP training for investigators and GCP inspection.
- September 1997-December 2008 **Various junior teaching posts in clinical pharmacology**
University of Tartu (Estonia)
Teaching of clinical pharmacology and related subjects in a university's medical faculty.

EDUCATION AND TRAINING

- September 1991-June 1997 **Medical doctor (cum laude)**
University of Tartu (Estonia)
Medicine
- September 1997-May 2002 **Medical doctor**
University of Tartu (Estonia)
Clinical pharmacology
- September 2012-August 2017 **Cardiologist**
University of Tartu (Estonia)
European curriculum in cardiology

ADDITIONAL INFORMATION

Expertise Clinical assessment
Clinical pharmacology
Cardiovascular therapeutics
Pharmacoepidemiology and drug utilisation
Pharmacoeconomics and HTA
GCP

Publications Books and chapters
Rootslane L, Laius O, Kurvits K, Irs A. 20 aastat ravimistatistikat Eestis. 20 years of Estonian Statistics on Medicines. Ravimiamet, Tartu, 2015.
Irs A. Scientific and Societal Developments: Pooling of Expertise. In: Woods K, Wathion N, Bonini S et al, eds. European Medicines Agency Celebrating 20 Years. London 2015
Al-Fannah JM, Coelho H, Cranswick N, Gilani AU, Gray A, Gupta U, Helali A, Hoppu K, Irs A, Kazembe P, Mehta D, Reidenberg M, Suryawati S, Walters S, Pedersen HB, Chongtrakul P, Zhiping L, Nakamura H, Robertson J, Hill S, Hogerzeil H, Ondari C, Zisovska E, Davies EH, Kearns G, Mattison D, Terlouw D. The selection and use of essential medicines. World Health Organ Tech Rep Ser. 2008;(950).
Jesse M, Habicht J, Aaviksoo A, Koppel A, Irs A, Thompson S. Health Care Systems in Transition: Estonia. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies, 2004.
Irs A, de Hoog T.J, Rago L. Development of Marketing Authorisation Procedures for Pharmaceuticals. In: Freemantle N, Hill S, eds. Evaluating Pharmaceuticals for Health Policy and Reimbursement. BMJ Books. Malden (USA), Oxford (UK), Carlton (Australia): Blackwell Publishing, 2004: 3-23.
Articles in international journals
Pagano D, Home P, Irs A, Ledermann J, Curigliano G, Iwatani T, Mandrola J, Freemantle N. The path for medical associations to sponsor trustworthy guidelines: is it feasible? J R Soc Med. 2022 Jul;115(7):252-256. doi: 10.1177/01410768221095240. Epub 2022 Apr 29.
Schunemann HJ, Reinap M, Piggott T, Laidmae E, Kohler K, Pold M, Ens B, Irs A, Akl EA, Cuello CA, Falavigna M, Gibbens M, Neamtiu L, Parmelli E, Jameleddine M, Pyke L, Verstijnen I, Alonso-Coello P, Tugwell P, Zhang Y, Saz-Parkinson Z, Kuchenmuller T, Moja L. The ecosystem of health decision making: from fragmentation to synergy. Lancet Public Health. 2022 Apr;7(4):e378-e390. doi: 10.1016/S2468-2667(22)00057-3.
Freemantle N, Irs A, De Paulis R, Pagano D, Falk V, Beyersdorf F. Transcatheter versus surgical aortic valve replacement: what does the latest evidence tell us?. Eur J Cardiothorac Surg. 2019;56(1):7-9. doi:10.1093/ejcts/ezz163
Alver M, Palover M, Saar A, Lall K, Zekavat SM, Tonisson N, Leitsalu L, Reigo A, Nikopensius T, Ainla T, Kals M, Magi R, Gabriel SB, Eha J, Lander ES, Irs A, Philippakis A, Marandi T, Natarajan P, Metspalu A, Kathiresan S, Esko T. Recall by genotype and cascade screening for familial hypercholesterolemia in a population-based biobank from Estonia. Genetics in Medicine. 2018, <https://doi.org/10.1038/s41436-018-0311-2>.
Hatswell AJ, Baio G, Berlin JA, Irs A, Freemantle N. Regulatory approval of pharmaceuticals without a randomised controlled study: analysis of EMA and FDA approvals 1999-2014. BMJ Open. 2016;6(6):e011666. doi: 10.1136/bmjopen-2016-011666.
Bueno H, de Graeff P, Richard-Lordereau I, Emmerich J, Fox KA, Friedman CP, Gaudin C, El-Gazayerly A, Goldman S, Hemmrich M, Henderson RA, Himmelmann A, Irs A, Jackson N, James SK, Katus HA, Laslop A, Laws I, Mehran R, Ong S, Prasad K, Roffi M, Rosano GM, Rose M, Sinnaeve PR, Stough WG, Thygesen K, Van de Werf F, Varin C, Verheugt FW, de Los Angeles Alonso Garcia M. Report of the European Society of Cardiology Cardiovascular Round Table regulatory workshop update of the evaluation of new agents for the treatment of acute coronary syndrome: Executive summary. Eur Heart J Acute Cardiovasc Care. 2016, pii: 2048872616649859.
Lass J, Odlind V, Irs A, Lutsar I. Antibiotic prescription preferences in paediatric outpatient setting in Estonia and Sweden. Springerplus 2013;2(1):124.
Hoebert J, Irs A, Mantel-Teeuwisse A, Leufkens H. Future of the European Union regulatory network in the context of the uptake of new medicines. British Journal of Clinical Pharmacology 2012, DOI: 10.1111/j.1365-2125.2012.04476.x
Lass J, Irs A, Pisarev H, Leinemann T, Lutsar I. Off label use of prescription medicines in children in

outpatient setting in Estonia is common. *Pharmacoepidemiology and Drug Safety* 2011, DOI: 10.1002/pds

Freemantle N, Irs A. Observational evidence for determining drug safety. *BMJ* 2008; 336: 627-8.

Johnson KR, Ringland C, Stokes BJ, Anthony DM, Freemantle N, Irs A, Hill SR, Ward RL. Response rate or time to progression as predictors of survival in trials of metastatic colorectal cancer or non-small-cell lung cancer: a meta-analysis. *Lancet Oncology* 2006;7(9):741-6

Raal A, Fischer K, Irs A. Determination of Drug Information Needs of Health Care Professionals in Estonia. *Medicina* 2006;42(12):1030-4

Rootslane L, Irs A. ATC/DDD methodology: a country perspective. *WHO Drug Information* 2001;15(1):26-30

Kask A, Pahkla R, Irs A, Rago L, Wikberg JES, Schioth HB Long-term administration of MC4 receptor antagonist HS014 causes hyperphagia and obesity in rats. *Neuroreport* March 1999; 10(4): 707-11

Pahkla R, Irs A, Oselin K, Rootslane L Digoxin: use pattern in Estonia and bioavailability of the local market leader. *Journal of Clinical Pharmacy and Therapeutics* 1999; 24: 375-80

Articles in national medical journals

Lass J, Tamme K, Irs A. Ravimite annustamine aarmise rasvumusega patsiendile -haigusjuhu kirjeldus. *Eesti Arst* 2016; 95(1):38-44

Kalda R, Viigimaa M, Irs A. Eesti ravijuhend „Taiskasvanute korgvererohtktove kasitlus esmatasandil“. *Eesti Arst* 2012; 91(8):437-439

Raudsepp D, Lass J, Saar M, Kuld L, Irs A. Ravimite korval- voi koostoimed erakorralise meditsiini osakonda poordumise pohjusena - prospektiivne vaatlusuuring. *Eesti Arst* 2011;90(3):122-128

Kirss A, Maipuu L, Eelmae I, Metsvaht T, Sirotkina M, Irs A. Angiotensiini konverteeriva ensuumi inhibiitori ja angiotensiin II retseptori blokaatori kasutamise ohud raseduse ajal: haigusjuhu kirjeldus ja kirjanduse ulevaade. *Eesti Arst* 2010;89(7-8):502-509

Conference presentations

Pintson M, Irs A. Involvement of Residents in the National Guideline Development Process in Estonia. 10th EACPT Summer School, Edinburgh, UK, 4-6.07.2013, poster.

Lass J, Iljuhhina J, Laius O, Pisarev H, Irs A. Retseptiravimite rasedusaegne kasutamine Eestis. TU Arstiteaduskonna teaduskonverents, Tartu, 7-8.10.2010, poster. *Eesti Arst* 2010; 89(9):580

Irs A. Regulatory clinical pharmacologist - an ambassador of sanity. *WorldPharma 2010 Bridging Basic and Clinical Pharmacology*. Copenhagen, Denmark, 17-23.07.2010, oral.

Iljuhhina J, Laius O, Lass J, Irs A. Prescription drug use during pregnancy in Estonia. *WorldPharma 2010 Bridging Basic and Clinical Pharmacology*. Copenhagen, Denmark, 17-23.07.2010, oral.

Review publications in national medical journals

Irs A. Raviminimede entroopia. *Eesti Arst* 2016; 95(5):328-331

Sonn K, Laius O, Irs A. Und soodustavate ravimite kliiniline farmakoloogia ja kasutamise suundumused Eestis. *Eesti Arst* 2015; 94(11):684-688

Irs A. PCSK9 monokloonsed antikehad duslipideemia raviks: evolokumab ja alirokumab. *Eesti Arst* 2015; 94(9):567-570

Irs A. Kaks uut kardiovaskulaarravimit: kangreloor ja vorapaksaar. *Eesti Arst* 2015; 94(2):108-110.

Irs A, Serg M, Elmet M. Euroopa Sudamerutmi Assotsiatsiooni praktilised juhised uute suukaudsete antikoagulantide kasutamise kohta kodade virvendusarutmiaga patsientidel. *Eesti Arst* 2013; 92(11):645-648

Irs A. Mittesteroidsete poletikuvastaste ravimite kasutamine sudame-veresoonkonna-haiguse riskiga patsientidel *Eesti Arst* 2013; 92(5):287-289.

Laius O, Irs A. Toimeainepohine retsept ja ravi tulemuslikkus. *Eesti Arst* 2013; 92(3):157-160.

Harrison P, Laius O, Irs A. Filgrastiimiga ja somatropiiniga sarnased bioloogilised ravimid. *Eesti Arst* 2012; 91(11):611-615

Harrison P, Laius O, Irs A. Sarnased bioloogilised ravimid - epoetiinid. *Eesti Arst* 2012; 91(10):570-573

Harrison P, Laius O, Irs A. Sarnased bioloogilised ravimid. *Eesti Arst* 2012; 91(9):492-495

Irs A. Dabigatraani kasutamise juhised verejooksuriski vahendamiseks. *Eesti Arst* 2012; 91(3):148-149

Irs A, Laius O, Uuskula M. Uued andmed viitavad liigsele agarusele dronedarooni kasutamisel kodade virvendusarutmia ravis. *Eesti Arst* 2011; 90(9):422-426

Harrison P, Laius O, Irs A. Bioloogiliste ravimite uus julge maailm: ravimiarenduse edasimineku viimase viie aasta jooksul. Eesti Arst 2011; 90(7):338-341

Irs A, Uuskula M. Uued suukaudsed tromboosivastased ravimid dabigatraan ja rivaroksabaan. Eesti Arst 2011; 90(5):232-235

Viigimaa M, Irs A, Soosaar A. Kliiniline probleem. Ravisoostumuse parandamine on arteriaalse hüpertensiooni suurim terapeutiline reserv. Eesti Arst 2010; 89(7-8):513-520

Irs A, Salupere R, Sinisalu V. Mittesteroidsete põletikuvastaste ravimite ohutu kasutamine. Eesti Arst 2010; 89(6):417-22

Irs A. Ravimitel on ikka veel korvaltoimeid. Lege Artis 2010;2(92):8-12

Projects

Memberships

European Medicines Agency (EMA) CHMP, member (alternate 2004-2006, member since 2006)

EMA PDCO, member (until 2010, alternate 2010-13)

EMA CHMP cardiovascular working party, vice chair

EMA CHMP efficacy working party, member 2004-2010

HMA/EMA Joint Big Data Steering Group, member, CHMP representative

WHO Expert Committee for the Selection and Use of Essential Medicines, former member

WHO Expert Panel on Drug Policy, former member

Drug Information Association, Advisory Council of Europe, member 2011-2014

Committee on Drug Reimbursement, Estonian Health Insurance Fund, chair

Marketing Authorisation Committee for Human Medicines, Estonia, vice-chair

National Clinical Guideline Advisory Board, Estonia, member

European Association for Clinical Pharmacology and Therapeutics (EACPT) Council, former member

EACPT Sub-Committee on Education, former member

Estonian Society of Pharmacology, member, president 2010-2013

Estonian Hypertension Society, member

Estonian Society of Cardiology, board member

Estonian Medical Association, member

Medical Curriculum Committee, University of Tartu, Estonia, former member

National programme for HTA capacity development, council member

Other Relevant Information