W3 – Towards a more patient centered approach to medication review

Medication review is defined as a structured evaluation of patient´s medicines with the aim of optimising medicine use, minimising the number of medication related problems, reducing waste and improving health outcomes. Appropriate medicine use optimisation requires an individualised and patient-centered approach which takes patient´s preferences and experiences into account and actively includes patients into decision making. Involving patients in deciding about their own therapy can lead to more positive outcomes including better adherence to therapeutic regimen, increased medication safety, more educated lifestyle choices and better-informed person. Collaborative care of clinicians and patients offers an optimal combination of an evidence based and patient centred approach. What is important to the clinician does not necessarily mean it will be important to the patient and vice versa. Many tools such as deprescribing, STOP/START, Medstopper, Beers criteria etc. can be applied in the process of patient-centered medicine optimisation.

Patient-centered medication review offers a promising improvement in health care and implementation into daily clinical practice should be considered including pharmacists´ consultations.

SECTION 5: PATIENT SAFETY AND QUALITY ASSURANCE

PQ1 - Medication with safety

Medication errors, such as administering a wrong medicine to a patient, are common worldwide. Tackling this problem requires seeking for systems-based risk management approaches in healthcare. These approaches promote proactive management of medication risks by improving every day medication practices and processes in hospitals. One of the strategies to improved safety is learning from identified medication errors and risk prone processes. Another important aspect is to learn from safe operation and situations in healthcare where we succeed and 'things go right'.

Co-ordinating and promoting medication safety is an important part of a hospital pharmacist's role. To achieve effective outcomes, it is important to implement evidence-based development activities and share good practices. The process of medication use involves multiple stages and many healthcare professionals with different roles, knowledge and skills, which is why inter-professional co-operation is a key element for success. To put theory in practice, this session presents examples of medication safety activities in Helsinki University Hospital, Finland. The interactive part of the session focuses on sharing best practices and designing successful medication safety activities in the participants' own organisations.

PQ2 – Teamwork in the hospital – building relationships to optimise pharmacotherapy

Approximately 6% of hospitalized patients experience an adverse drug event (ADE) during their hospital stay. An ADE is defined as "any injury resulting from a drug", including adverse drug reactions (ADRs) and medication errors (MEs). An ADR is a response to a drug which is noxious and unintended and which occurs at doses normally used. An ME is a mistake in the medication-use process caused by omissions or commissions. Around a quarter of medication-related injuries are estimated to be preventable. High-alert medications pose a higher risk for adverse drug events. Errors may or may not be more common with these drugs than with the use of any others; however, the consequences of these errors are more devastating. Anticoagulants and antithrombotics, opioids, insulins and cytotoxic drugs are examples of high-alert medications. How can hospital pharmacists identify unit and specialty specific high-alert medications and try to prevent serious MEs related to these?

An open safety culture, reporting and analysing MEs, structured processes, competence of staff and clinical pharmacy services are essential areas of medication safety and risk minimisation work. Risk minimisation measures aim to optimise the safe and effective use of a medicinal product throughout its life cycle. Planning and implementing risk minimisation measures and assessing their effectiveness are key elements of risk management. While the majority of safety concerns may be adequately addressed by routine risk minimisation measures, additional risk minimisation measures are necessary to manage risks of some medicines, especially post marketing when the medicines are in routine use in practice and taking into account human factors. What is the role of hospital pharmacist in the risk minimisation of these medicines?

SECTION 6: EDUCATION AND RESEARCH

ER1 - Hospital pharmacy practice research: why and how to be more engaged and publish?

University pharmacy curriculum prepares future pharmacists for pharmacy practice in community and hospital pharmacy but very little for pharmacists' participation in pharmacy practice research. However, hospital pharmacists should actively engage in and publish research, particularly on hospital pharmacy practice. In this seminar, participants will be able to identify reasons to be published and barriers to being published. Pharmacy practice research will be defined in the arena of research in healthcare, key opportunities and challenges in pharmacy practice research will be discussed. Finally, to allow participants to get into action two practical models will be detailed. A 1st French example of medical writing course, will be detailed, course that has trained over 30 years, more than 1,500 hospital staff. The second example will present the Research Unit in Pharmaceutical Practice (URPP), a pharmacy practice research unit set up in the pharmacy department of CHU Sainte-Justine, Québec, Canada, in 2002. The URPP follows 10 research areas related to pharmacy practice. The URPP welcomes Quebec students (undergraduate and graduate) and foreign students enrolled in a university pharmacy training program. Students are trained in evaluative research by completing all stages of the scientific process, from the research question to the hypothesis, the writing of the protocol, the data collection and analysis, and the sharing of knowledge by researchers. For 20 years, the URPP has welcomed nearly 300 students and contributed to the publication of more than 600 posters and more than 800 articles.

ER2 - How to work smarter not harder?

Efficiency and effectiveness are both commonly used terms in a workflow. Efficiency refers to doing things in a right manner and focuses on the process and getting the maximum output with minimum outsources. Therefore, the efficacy increases productivity and saves both time and money. On the other hand, effectiveness refers to doing the right things and focuses on the desired results. Therefore, the effectiveness should have a priority, since efficiency without effectiveness is a waste of resources. Technological advances and increasing demands in healthcare create challenges in ensuring adequate education and training regarding the needs for achieving effectiveness and efficacy in the health system.

Various strategies have been developed to improve the efficacy and effectiveness of healthcare workflow and the Lean thinking concept, being one of them, encourages hospital pharmacists to think about complete healthcare process rather than a series of disconnected steps. Since the early times where Lean thinking was presented as the new "magic tool" for the healthcare managers, many health settings have experienced this approach. Although the first steps are often exciting by the implementation of the first actions, the acculturation of an entire pharmacy team is rather a challenge. This seminar with two European pharmacists who developed this approach for about a decade aims to present the keys to success in introducing and disseminating lean from operators to managers. Recognizing the importance of training in Lean thinking concept is critical component for making effective and efficient healthcare workflow.

W5 - From data to decision – improve the use of EBM in clinical practice

Clinical pharmacists are increasingly involved in decision making around patients' pharmacotherapy and need to be able to find and use the most up-to-date evidence and guidelines when providing advice and recommendations. Many clinical pharmacists are in the habit of relying on "old" knowledge and do what feels safe. There is often limited time for continuous education within pharmacotherapy plus the pharmaceutical industry may work to influence decisions and introduce biased knowledge. They also need to be able to quality assure the evidence and communicate their findings to physicians and patients in an appropriate manner. They also need to be aware of what patient data is necessary to have to be able to give recommendations in each situation; (medical history, vitals, lab data, patient preferences, geriatric assessment/frailty index, and abilities of the patient) and how to achieve this. Continuous education for clinical pharmacists, it is important to keep up-dated and not only rely on old text book knowledge. This workshop will be a training session that can be used in the participants' home settings. We will be using authentic patient cases that include therapeutic areas with a lot of new development and knowledge so that the participants need to consult the literature and guidelines to ensure their recommendations are correct. In the workshop there will be practical advice on how to achieve this. It will also be discussed what patient data and factors that need to be available and considered. Then participants will practice how to communicate the evidence and the different treatment options with the physician and the patient. What are the risks and benefits? How does it correspond to the patient's preferences and abilities?

Student programme - Contemporary ethical challenges in hospital pharmacy practice

Ethical issues arise in everyday practice of a hospital pharmacist. Fundamental ethical principles, such as respect of the patient's autonomy, integrity, privacy and confidentiality reflect the right of a patient to accept or refuse treatment and responsibility of a hospital pharmacist as a healthcare professional to act in patient's best interests and do no harm while enacting ethical principles.

Optimal and rational use of medicines as part of patient-centred care relies on ethically driven decisions taken by a hospital pharmacist. Hospital pharmacists also play a vital role in providing their patients an insight into risks and benefits of participating in a clinical trial involving medicines, where a clear patient's or career understanding is of essence when providing consent. Moreover, formulary management and conservative prescribing make decision-making even more complex in times of limited healthcare-associated resources and frequent medicine shortages. At the same time, a hospital pharmacist needs to protect patient's integrity and preferences as ethical considerations at an individual level and allow for population-level ethical aspects to be considered, which yields conflicts among healthcare providers, funding bodies and patients. Therefore, fear from rationing and limited access to medicines place an additional burden on hospital pharmacists, who needs to provide best care in times of shortages and overcome ethical challenges.

Mitigating medicine shortages within multidisciplinary teams in accordance with ethical principles provides foundation on how to substitute a medicine properly and whom to provide the alternative first. Therefore, it is necessary to have a process in place defining an alternative's approval and ethical considerations for a substitute's allocation that has already been established prior to a shortage occurring.

Audio and Video presentations from the Virtual Congress are now available via the EAHP web site www.eahp.eu/publications/webcasts

The European Association of Hospital Pharmacists (EAHP) is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education.

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REGISTRATION

Registration Fee **Student | 150 €**
Registration Fee **before 1 December 2021 | 520 €**
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Registration fee includes access to all sessions, the opening reception, the exhibition, lunches on Wednesday and Thursday and coffee/tea during official breaks.
The registration fee does not include VAT. 10% Austrian VAT will be added at the end.

CANCELLATION POLICY

Cancellation of individual or group registrations received before 1 January 2022 will be refunded (less 100 € per registration, bank and administration charges per participant). For groups a maximum of 15% of the Registrations may be cancelled before 1 January 2022 (less 100 € per registration, bank and administration charges per participant). No refunds can be made after this date but substitution is always accepted. All cancellations or changes must be sent in writing to registration@eahp.eu.
NOTE: PLEASE DO NOT SEND INDIVIDUAL REGISTRATION FORMS FOR GROUPS OF DELEGATES.

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CALL FOR ABSTRACTS

The Scientific Committee welcomes the submission of original contributions from all fields of hospital pharmacy. Abstracts submitted must not have been previously published or submitted to another congress except at the congress of their own national association. All abstracts will Show Hidden Characters be accepted for poster presentation only. The poster prize nominees will be requested to give an oral presentation on 23rd March during the congress. The abstracts will be reviewed by colleagues from different European countries. Accepted abstracts will be published in the official Abstract Book and will also be available for viewing via the EAHP web site. Presenters are encouraged to have available handouts of their poster when presenting at the congress, and/or to have an e-mail address to allow attendants to ask for "electronic handouts" after the congress. For more information on submission and abstracts, please visit the following website, http://www.eahp.eu/congresses/

Deadline for submission : 15th October 2021

*EAHP confirms that Scientific Committee members responsible for the development of the Congress programme have signed and submitted the Conflict of Interest Disclosure forms.

POSTER AWARD

Encouragement prize for investigators.
The best abstracts/posters – with regards to aspects like originality, scientific quality and practical applicability – will be awarded with 3 prizes amounting 750 €, 500 € and 250 €. The Poster prize nominees will be requested to give an oral presentation on 23rd March. The winners will be announced at the closing ceremony on 25th March 2022. Winners must be present to win.

KEYNOTE 1 - WHAT ARE WE PAYING FOR? - FROM PRODUCTIVITY TO VALUE BASED HEALTHCARE

The view on healthcare systems in Europe is moving from a productivity paradigm, which focuses on the amount of healthcare services provided, to a value-based healthcare paradigm, which focuses on patient health outcomes. In this paradigm shift, the healthcare system is rejecting a systemic "one-size-fits-all" approach, in order to apply a more patient-centered approach.
Traditionally, patient treatments were based on guidelines and other evidence-based treatment tools. In value-based healthcare, patient preferences in medical treatment is now fundamental to the way value is defined.
Value is no longer produced simply by delivering medical technology and medicines, in a value-based healthcare paradigm, instead, value emerges when the perspectives of the healthcare system and patients fuse resulting in optimal patient experience as well as strong clinical outcomes. Factors such as new technology, availability of information and communication between patients and healthcare professionals (HCPs) enable the fusion.
To measure value-based healthcare, tools such as Quality Adjusted Life Years (QALY) and Patient Reported Outcome (PRO), may be implemented in the healthcare systems to support value-based practice within limited healthcare budgets. This transition from productivity to value-based healthcare requires hospital pharmacies to reconsider their strategic thinking to remain a key player within healthcare.

KEYNOTE 2 - CHOICES IN THERAPY - WHAT REALLY MATTERS TO PATIENTS

Shared decision making (SDM) is a process in which healthcare professionals and patients work together to make decisions on treatments jointly. When successful, SDM should result in decisions about a patient's care that are aligned with both the best available evidence and the patient's informed preferences and values. To do this requires healthcare professionals to engage effectively with people to determine what really matters to them about their disease or illness at this point in time and what a good outcome would look like for them.
SDM is appropriate in any healthcare setting whenever there is more than one treatment or management option available, including doing nothing. Having excellent communication and consultation skills is essential for hospital pharmacists to engage in the most appropriate way with the patient, to learn about their preferences, communicate to them the evidence-based information available and jointly agree on the decisions made. The Health Foundation found in 2014 that a large majority of patients in UK general practice wanted to be involved in decisions about their care. Subsequent evidence suggest that this is the case throughout the developed world. This does not mean that patients have to make the final decision but that they wish to be involved in the process. As Melnikow and Kravitz put it, "Most patients want to see the road map, including alternative routes, even if they don't want to take over the wheel." The Montgomery ruling in the UK in 2015 provides a basis in law for the promotion of SDM; put simply, clinicians should not make decisions for patients, but with patients instead. Current research suggests that SDM does not occur to the extent that it should. The UK's Clinical Quality Commission (CQC) annual inpatient survey features the question "Were you involved as much as you wanted to be in decisions about your care and treatment?" The latest data from 2020 shows that less than half of patients were not involved as much as they wanted to be. Further survey data highlights that SDM is required in both primary and secondary care.
This keynote will address the barriers to making SDM routine by outlining the evidence base showing the benefits of SDM, while sharing practical, pragmatic experience of an academic general practitioner from the UK who has made this a routine part of his work. A patient perspective will also be shared where real life examples and stories are used to demonstrate how SDM can help people cope better with their multimorbidity. Enabling hospital pharmacists to improve their knowledge and skills around evidence-informed decision making and consultation skills is essential if we are to achieve the aim of involving patients in their choices on which medicines to take. It will also enable them to take this back to their places of work to spread the message to others in their teams.

KEYNOTE 3 - THE ERA OF CELL AND GENE THERAPIES IN ONCOLOGY - FICTION, POETRY, OR SCIENCE?

Personalised medicine, also known as precision medicine or individualised medicine increasingly involves molecular diagnostics, predictive (proactive) genetic testing, pharmacogenomics, and in-depth immuno-profiling. In immuno-oncology, multiple approaches of cell and gene therapy are on the threshold. i) genetically modified organisms (GMO) e.g. oncolytic viruses (OVs) as a platform technology to induce systemic immune responses against cancer; ii) mRNA-techniques to target neoepitopes which have to be identified through IT-based diagnostics of the patient´s tumor genome for development of patient individualized tumor vaccines; iii) cell-based therapies with the therapeutic use of adoptive cell therapy (ACT) including ACT of tumor-infiltrating lymphocytes (TIL), ACT with T cell receptor (TCR) gene therapy and ACT with chimeric antigen receptor (CAR) T-cells. These very heterogenic concepts also have a very suitable option for combination approaches among each other. They are subject of ongoing scientific efforts ultimately aiming for long-term therapeutic responses and broadening use for different tumor types.

In this keynote lecture the principles of the different techniques are explained as well as the potential but also the limitations so hospital pharmacist can assess the opportunities and challenges brought by gene and cell therapy.

SECTION 1: INTRODUCTORY STATEMENTS AND GOVERNANCE

IG1 - Better together! – Hospital pharmacists go collaborative

Hospital pharmacy encompasses numerous different activities that frequently require very specialized knowledge and it is not always possible to have enough human resources and time to perform these activities in the desired way.
Networking groups can be a solution to this problem, allowing adding knowledge and efforts of the network members and using time more efficiently.
On the other hand, working collaboratively can have a great impact on patients in the case of infrequent diseases with very personalized treatments that can be difficult to obtain or be useful to ensure the availability of drugs that are not used frequently.
There are multiple examples of how benefits for patients or healthcare systems are obtained through collaboration. These collaborations can occur at many different levels (local, regional, national and international) among hospital pharmacists and with other pharmacists or different healthcare providers.
In this seminar we will learn about experiences that have been proven to be beneficial for their participating members in specific areas such as drug compounding in rare diseases or the management of antidotes. We hope that after attending this seminar you also believe that "Unity makes strength"!

IG2 - How to survive with limited resources without letting the patients down

Although the economic crisis formally ended almost a decade ago many countries in Europe still live under strict budgetary constraints and healthcare systems are deeply affected by these changes. Hospitals have also had to implement policies to manage tough budget constraints and hospital pharmacies are often at the back of the queue of all hospital needs.
What options are there to continue the development of hospital pharmacies and implement the European Statements of Hospital Pharmacy into daily life? How can hospital pharmacists improve patients' treatment outcomes in these circumstances? Is it possible to balance limited resources and ethical aspects? This seminar attempts to give answers to these questions by presenting different viewpoints from two different stakeholders in the health system: hospital pharmacist and hospital manager.

IG3 - The role of the hospital pharmacist in disaster management – are we prepared?

Emergency and disaster pharmacy serves to ensure the best possible pharmaceutical care for the population during major incidents and disasters as well as in other exceptional situations. With all the expertise of pharmacists, emergency and disaster pharmacy plays a fundamental role in medical care. All over the world pharmacists experienced disasters such as train accidents, earthquakes, flooding or other natural disasters, where hospitals were suddenly faced with large numbers of patients in these events of a mass casualty. Besides, hospital pharmacists have to be prepared for the treatment of patients in NBC emergencies (nuclear, biological or chemical hazards).

Competency of hospital pharmacists to dispense drugs and guarantee safe medication under normal conditions does not necessarily mean that they will be equally proficient in "mass dispensing" or other forms of medication supply that occur during emergencies, where existing supply chains are disrupted, information is limited, and key infrastructure may be compromised.

The preparedness for various sorts of emergencies justifies different concepts and several specific ranges of medicinal products to care for patients who suffered either severe injuries or harms from NBC emergencies. The hospital pharmacists should be able to provide concepts and quality standards for the supply of medicines and medical supplies not only for their hospital, but also for rescue services. The main tasks usually are emergency drug supply and participation to crisis management at hospital level. Besides, the manufacturing capacity of a hospital pharmacy may play an important role. The support in the hospital emergency preparedness is vital. Many hospital pharmacies already have a disaster plan ready-to-go – but will it cover all aspects of the catastrophe we may face?

W1 - Smooth operator - How to manage difficult situations

The media are continuously covering stories of patients, who do not seem to have received optimal treatment during their hospital admission. Working as a hospital pharmacist, the overarching aim is to provide the best possible conditions for optimal medication treatment, concurrently understanding that mistakes may result in patient harm and even mortality. The daily work may be unpredictable and influenced by factors beyond the control of the hospital pharmacist. Hence, delivering high quality services under time pressure and budget constrains in an unpredictable environment can at times cause stressful situations.

Difficult situations can appear in many settings and they often involve other individuals. It may be in the meeting with scared, stressed and dissatisfied patients, who might experience a traumatic situation being admitted to hospital. Other examples include misunderstandings and lacking insight in the tasks and workflow of colleagues, ward staff, external collaborators or managers. Finally, difficult situations may also appear in stressful working environments and disruptive situations. In the workshop, examples of difficult situations will be discussed and possible beneficial ways of managing and preventing them will be presented.

SECTION 2: SELECTION, PROCUREMENT AND DISTRIBUTION

SPD1- Gases, devices, diagnostics - Managing more than tablets

A hospital pharmacy director is accountable for the management of medicinal products and all other health goods used in the hospital. While the pathway for medicines is very clear in terms of responsibility and tasks, this is not always the case for "borderline products" as, for example, medical devices (e.g., custom made), medical gases, disinfectants, diagnostics. A specific expertise needs to be implemented in the pharmacy staff, and specific interaction with other central offices need to be very clear in order to get a smooth management. Special expertise needs to be in place for procurement, and vigilance on the safe use.

The seminar will focus on the management pathways of these products, providing information on the level of expertise needed, responsibilities of the hospital pharmacy, as well as models of management.

SPD2 - The waste-reducing hospital pharmacy – let's get started!

In its 2017 report, "Tackling wasteful spending on health", the OECD systematically analyses and describes how and why a considerable amount of health spending is deemed wasted. In this context, "wasteful" is refers to first, services or processes that are either harmful or do not deliver benefits and second, costs that could be avoided. Examples of waste in health care are manifold and substantially occur in the three domains of clinical care (e.g. duplicating therapies, preventable clinical adverse events, overprescribing), operations (e.g. discarded medicines) and governance.

Not surprisingly, waste-reducing activities referring to medicines are in the focus of community and hospital pharmacists alike, as medication waste occurs at all stages of the pharmaceutical supply chain. It is important to understand factors contributing to medication waste and learn about initiatives to address these sources of waste, in order to mitigate the financial and environmental impact of it.

While hospital pharmacists reduce waste in the above-mentioned meaning in clinical care by providing clinical pharmacy services and cost-efficient selection of medicines, other areas of hospital pharmacy practice contributing to waste are not that well explored. This seminar will give an introduction in the concept of waste from a pharmacy viewpoint and then provide two different examples of how waste can be reduced, one in the original sense of "waste" and the second focused on waste in pharmacy and clinical pharmacy processes.

INT 1 – Work it out - Your idea to save health systems

When we see new drugs or new therapeutic approaches reach the market we see them coming with extremely high costs. Some years ago when the monoclonal antibodies were first used in therapy we had an immense increase in our budget. Today new advanced therapy medicinal products have much higher costs and sometimes giving us the feeling that even in richer countries health systems will not survive the next decades or even years because they will implode regarding lack of budget.
Different health systems react in different ways. The "Bismarck" approach tries to react with individual single patient-based decisions in contrast to the "Beveridge" approach where decisions were made on the basis of patient groups. In both cases we see also other measures to cope with the situation of high-cost medication and therapies. At the end of the day all of the measures did not succeed. Health systems are still going to bleed out from a financial perspective. In the workshop the audience should act as stakeholders. Come out with your ideas to rescue your health system. Every idea will be a good one. It is just brainstorming: Work it out!

SECTION 3: PRODUCTION AND COMPOUNDING

PC1- Opportunities and threats for hospital pharmacy production in gene and cell therapy scenarios

New technologies are about to modify the way hospital pharmacists work. To be ready, further skills have to be acquired in terms of getting familiar and expert for upcoming opportunities and threats. These new technologies comprise pharmacogenomics, gene editing, CRISPR-Cas, transfection of modified genetic materials into cells or into nanoparticles. In this way, it will become reality to really personalize treatments. As such medicines do not reach blockbuster figures, it might be important for hospital pharmacists to participate in these treatments on a middle-scale production. Single nucleotide polymorphisms (SNPs) and their inherited interrelation with non-communicable diseases have been detected in the past years by genome-wide association studies (GWAS). The "common variant - common disease" hypothesis lead to the identification of the mutated loci on the chromosomes and thus to treatment options for Inherited diseases with high penetrance such as Huntington, Spinal Atrophy, or Cystic Fibrosis. A further step from actual GWAS associations of mutated genes to diseases will lead to exam sequencing and in a short future to whole genome sequencing. Cell therapies become more and more available due to technologies as CRISPR/CAS but remain costly. A response to medicines depends on normal functions of enzymes on the pharmacokinetic pathway and on normal structures of the receptors on a pharmacodynamic level.
Whereas diagnostics (sequencing high numbers of genetic specimen and biotechniques) will be a business for specialized molecular biology and chemistry laboratories, medical professions will be challenged by the interpretation of data from genetic profiling. Bioinformatics will have to prepare a set of interpretable data for physicians and pharmacists. Basing on these data, responders to a novel treatment can be distinguished from non-responders. Repaired genes after editing and application of molecular genetical techniques such as CRISPR-Cas will have to be packed in a suitable carrier box, either a cell or a nanoparticle, which is to fit perfectly to its target in the body. These new medicines will certainly require new types of handling drugs and prepare ready-to-use gene and cell medicines. It will obviously be more requiring to equipment, investment, training of hospital pharmacy staff. Cooperation with other professionals is likely, in a way we know today from transplant teams.
The main focus of the seminar will set on personalised and precision medicine and the inherent development of novel biological compounds. Differences between CAR T-cell treatments and nanoparticle-based ways of bringing the repaired genes to their targets will be presented as well.

PC2 - 3D printed medical devices – the ultimate customization

Nowadays, customized medical devices are becoming common practice in the operation rooms. The era where one size fits all lies far behind us, and printing of medical devices is a technology that gives a new dimension in personalized treatment of patients. Today's applications include patient specific 3D printed cutting guides, 3D planning of complex surgery, printing of anatomical models of bone structures and organs and even printing of implantable devices. Also bio-printing of tissues and organs is already explored in transplantation surgery.
As for the legislation, the Medical Device Regulation (MDR2017/745, applicable from May 2020) defines the requirements concerning customized devices and manufacturing of devices within the health institution. Specialized manufacturers have developed the expertise and knowhow of 3D printing, but with the growing quality and availability of printing equipment, printing of devices within the health institution could become common practice.
In this evolving technology, we can wonder if there is always a clear added value in the use of patient specific devices and if the sky is the limit in the clinical applications of 3D printing? As the hospital pharmacist is responsible for quality and conformity of medical devices, there is definitely a responsibility that reaches further than control of the CE mark on the packaging. As the provider of patient therapy we will play a key role in managing just in time printing of high quality devices and assure the traceability.

PC3 - Bacteriophages – back to the future

In the era of rising bacterial resistance, we are increasingly confronted with difficult to treat severe or chronic infections caused by multiresistant bacteria. Some of these infections are life-, organ- or limb-threatening, and in these situations (adjunctive) treatment with bacteriophages is sometimes considered. Bacteriophages have widely been applied, already for many years, in Russia and Georgia, but did not found their entrance in (Western) Europe thus far. However, as the antimicrobial pipeline is virtually dry, and as we are confronted with antimicrobial resistance, there is a clinical need to evaluate the place of bacteriophages in our current anti-infectious armamentarium. Bacteriophages are often locally applied in chronic and debilitating infections, such as chronic osteomyelitis (as a last resort option in order to avoid amputation) and chronic upper respiratory infection, such as sinusitis (in order to avoid recurrent antibiotic courses). Next to this, bacteriophages are also sometimes systemically (intravenously) applied for severe acute infections, like severe sepsis or septic shock, caused by multiresistant bacteria.

Bacteriophages are not comparable from a development point of view to classic drugs, as targeted phages have to be identified and developed for the specific infecting pathogen, based on a 'phagogram'. Recently, application of bacteriophages as a magistral preparation has been proposed.

In this session, a concise overview of different aspects related to the therapeutic use of bacteriophages will be provided. The session will be started by highlighting the history of bacteriophage use and previous experience with bacteriophages. The current clinical evidence, therapeutic indications and safety aspects will be discussed by an infectious diseases' specialist. This will be followed by a discussion on the practical and regulatory aspects and the role of the pharmacist in compounding and dispensing. Finally, research needs for the near future will be highlighted.

INT2 - Compounding for Paediatrics - A Survival Guide through GMP

Paediatric patients are not mini-adults. This statement, although so often heard, is normally not fully explored. Why are children so different? Weight, height, gastric emptying time, gastric pH, distribution volume, hepatic metabolism, renal clearance, and other features contribute to different needs comparing to adults. And those needs require paediatric formulations, with different doses, different pharmaceutical forms, suitable palatability and so on.

All paediatric pharmacists face the problem of not having the medicine in need, on the required dose, or on the proper pharmaceutical form. So, compounding is frequently mandatory.

In addition, there are substantial differences between paediatric formulations available in each country, which make this task even harder. Therefore, in this seminar, we will deliver a "survival guide" to recognize how to adapt the medicines we need to administrate to our patients without compromising its safety and effectiveness.

In fact, we intend to answer the following questions:

1- Do I have to compound this medicine? - is there another option on the market?

2- Do I have what it takes? - go through the GMP

3- Is there any other hospital or health centre doing the same thing? - create your network. Ask a partner.

4- Use suitable literature - we will review some of the platforms that can be used as well as books, articles, authors and so on.

5- Which is the best pharmaceutical form for my patient considering its age? - we will discuss the best options for paediatric patients.

6- What about the excipients- which to avoid?

7- Expiration date - How do I know?

8- Batch release - quality control; packaging and labelling will be discuss

9- After administration, how to evaluate the clinical efficacy?- ask the child, ask the parents, ask the physician, ask the nurse. Make sure your patient is happy.

Finally, some clinical examples of the daily practice will be discussed.

SECTION 4: CLINICAL PHARMACY SERVICES

CPS1 - Side effects resulting in prescribing cascades

The older population is increasing worldwide. This increases the number of patients with polypharmacy as well. From scientific literature, it is known that the risk for adverse drug events increases with every medicine that is prescribed. Prescribing cascades occur when an adverse drug event is misinterpreted as a new medical condition, resulting in the prescription of a potentially unnecessary drug to treat this new condition. Especially, in the older population, the recognition of adverse drug events is difficult as aging can mask drug-related adverse events, and causes of new conditions (e.g. falls or delirium) become increasingly difficult to attribute to a combination of medication.

The phenomena prescribing cascades was first described in the Lancet and British Medical journal over 20 years ago. In the scientific literature over 30 different prescribing cascades are described, showing that prescribing cascades do not only result in the prescription of an additional drug to treat the adverse drug event but even in the use of medical devices (e.g. a pacemaker to treat bradycardia). Prescribing cascades are an important public health problem because they lead to adverse outcomes and unnecessary costs for the healthcare system that can be avoided.

Hospital pharmacist could help in mitigating strategies for prescribing cascades by recognizing them, prevent them and reverse them. This seminar will provide an overview of different prescribing cascades and will provide strategies for hospital pharmacists to prevent, detect and reverse prescribing cascades in daily practice.

CPS2 - The COVID-19 pandemic: Lessons learnt at the hospital pharmacy

Medicines play an essential role in curing disease. However, there is a growing number of reports that shows us that many patients do not use medicines as prescribed or do not receive as much information as they need. Medication noncompliance (adherence) remains a pervasive medical problem not only in adult population but also in children. Multiple variables contribute to nonadherence negatively affecting treatment outcomes, for example, children's medication related beliefs and problems related to medicine use which may be considered as noncompliance: dose omissions, incorrect dosage, improper dosing intervals patients' unwillingness to use medications, etc. Medication compliance in paediatrics is unique because not only compliance of the child but also parents must be taken into account. There is no uniform agreement what degree of compliance is required for an adequate therapeutic outcome in paediatric patients. At the same time the extent to which any patient adheres to a medical regimen is an essential determinant of clinical success. Many problems potentially generating noncompliance might be prevented, if children would be empowered as medicine users. Communicating with children taking into account their cognitive development is one important way to prevent noncompliance problems.

Medicines optimisation focuses on improved outcomes for patients, e.g., helps patients to take their medicines correctly and to improve medicines safety.

W2 - Recognising the prescribing cascade

Incremental prescribing, also known as a prescribing cascade, is the result of a prescriber misinterpreting an Adverse Drug Event (ADE) as a new medical condition. The physician being unaware that the patient's new symptom is of iatrogenic origin prescribes additional medications to the patient. The resulting increase in the number of medications can cause even more side effects and trigger further propagation of the prescribing cascade.

Prescribing cascades can happen in any patient but they are more likely to happen in geriatric patients due to the higher number of medications they are on and the associated comorbidities. The identification and interruption of the prescribing cascade is essential to ensure medication safety in older people.

Although prescribing cascades are usually considered problematic and should be prevented or terminated, in certain clinical situations, they are considered therapeutically appropriate. On the basis of best available evidence, the prescribing cascades can be considered appropriate and intentional when the therapeutic benefit of the drug, that caused the ADE, outweigh the risk for the patient of having a new medication initiated to counteract the ADE.

It is important for the Hospital Pharmacist (HP) to be able to recognize prescribing cascades and, if considered problematic, to advise the prescriber on medications changes needed to terminate and prevent future problematic incremental prescribing.

In this interactive workshop, through case studies, the HP will acquire the skills needed to identify prescribing cascades and the skills to manage such situations which could be either termination or acceptance of the prescribing cascade.