State-ment nr	Statement
	To enable safe, effective an high-quality in-hospital pharmacotherapeutic care…
1	… a hospital should have a structured in-hospital pharmacotherapeutic stewardship program.
2	... there should be European consensus on the fundamentals of an in-hospital pharmacotherapeutic stewardship program.
3	… each in-hospital setting in Europe should have a pharmacotherapeutic stewardship program.
4	... there should be a policy that outlines the responsibilities of the persons active within an in-hospital pharmacotherapeutic stewardship program.
5	If a hospital setting wants to set up an in-hospital pharmacotherapeutic stewardship program, a framework should be available that includes evidence-based and applicable Quality Indicators (QIs).
6	***Room for survey taker to add thoughts on statements 8-12*** - a clear definition of pharmacotherapeutic stewardship program should be state. This concept encompasses many aspects of risk management of PEs and many different and complementary skills - Q2: a european level seems to be difficult to obtain because of too heterogenous care - Relevant to clarified the rol of each partner: Physician, clinical pharmacologist, pharmacists, etc. - Q4: responsibilities may be understood as liability, tasks, or prerogatives. To avoir "liability", one may rather use tasks? - There is still no evidence that an pharmacotherapeutic stewardship program actually improves patient outcome or rehospitalization. Most errors prevented are minor errors. - It is a great idea to have an inhospital pharmacotherapeutic team, but this is not widely applicable in European countries. I have answered that there should be guidance - but we may also need to consider specific teams (such as antimicrobial stewardship teams, opioid stewardship teams, falls review teams, etc.). - All these aspects are important. - Whether the consensus level of the stewardship of the hospital need to be national or European I am uncertain about, but national medical agencies should be involved and the hospital drug committees need a better legislation/rules for their work in hospitals to build local stewardship programs/educational programs to better prescription and control of prescription in their hospitals. I am here uncertain in these questions about which level of stewardship that is thought of. Are the questions abot educations of academics that are involved in improving prescriptions in hopsital setting, stewardships in my country is linked to the rules for guideance. But I think these questions maybe concerns a management system of education more than a stewardship?
	A pharmacotherapeutic stewardship program…
7	... should *at least* include the following activities *(it is possible to check more than one box)*: A. medication reconcilliation at hospital admission B. A face-to-face / virtual medication interview with a patient C. A structured medication review during patient's hospitalization

E. A structured medication review upon patient's hospital discharge

F. E ducation for in-hospital prescribers regarding pharmacology and pharmacotherapy

G. Education for nurses regarding pharmacology and pharmacotherapy

H. Medication reconcilliation at hospital discharge

I. Surveillance on the correct dose and formulation of medication when a patient has a tube

J. Surveillance on correct medication administration when a patient is not able to take their medication orally (for example in case of (temporarily) problems sw

K. Surveillance on and reporting ofadverse drug events (ADEs)

L. Optimalization of local protocols

M. Identification of computerized physician order entry (CPOE) system

N. Other

Room for survey taker to add thoughts on 'Other'

- Promotion of good use at all levels (medical, non-medical, juniors, seniors, administrative staff), drug referencing policy based on objective risk criteria
Considering the limited resocurces available for medication therapy safety, ie.e the lack of specialists in pharmacotherapy safety, tools for the identification of patients at high risk for medication related problmes should be provided and implemented in order to allow prioritisation of specialist attention to patients at highest risk for medication related problems.
- A system of monitoring compliance with interventions made by activities.
- Other: Aware of th drug list of the hospital and the process around it. Aware of national registrations of drug side effects/adverse event.
Knowledge of national and local prescription system.Some knowledge of drug use: Aware of The Hospital Pharmacy and sales statistics of drugs and knowledge of the prescription data base. Drugs under special surveillance. A member of the undergroup of the Drug Commite at the hospital, be present at some of the meetings of the drug commitee. Knowledge of electronical medical records. Some skills in clincial medicine. Statistical knowledge. Communication skills.

Room for survey taker to add thoughts on statements 7

- Surveillance need to be anonymous especially for collection of data on medication errors
- Everything seems important... A ranking of the proposals may have helped express a more relevant opinion?
I also think that patient therapeutic education and a structured link between hospital and outpatient setting are essential for the security of patients (considering hospital admissions because of drug-related events imply that we aknowledge that many incidents occur when the patients are outside the hospital setting => we need to manage the risk in both in-hospital and outpatient settings).
- Continue education of all health professionals is important.
- Most important part of stewardship program is to be able to provide a system to facilitate reporting of errors in a blame free environment- providing a system in place to receive reporting of ADRs and errors and having doubts on taking medication (error of not providing information on administration) by the patients.
- In my opinion the activities should be risk-based. Not every patient will benifit from the whole bunch of activities.

	It also depends on the activities undertaken by the community pharmacy.
8	… should be tailored to a hospital's specific needs.
9	... should only be active during office hours. Meaning not hereafter or during the weekends.
10	… should only be active after office hours and during the weekends. Meaning not during office hours.
11	… should have a more reactive (passive) approach, rather than a proactive (active) approach.
12	… should provide metrics and insight in the status of medication safety in the hospital where it is active.
13	***Room for survey taker to add thoughts on statements 8-12*** *- Q9-10: always whatever the period time. Q11: both approaches* *- A system in place that is active 24X7* *- reg 9 and 10 : 24/7 high availablilty of specialists support for medicatin therapy safety would be best but may not be realistic in many places. Here a greaded , stepvise approcah ma be more feasible, Level 1: during regular office hours Level :2 24/ 7.* *- Stewardship program should cover priority areas, agreed internally (within the hospital staff) and externally (among other stakeholders of the hospital quality assurance system)* *- Number 11: I think/know a lot of prescribers are unconsciously incompent at precribing, so purly relying on a passive approach is not enough.* *- Given resource limitations it seems reasonable that a reactive approach (to requests or to specific situations) would be most suitable.* *- There may be exceptions: the situation may be ambiguous.* *- I am uncertain how to organize this and how active this service should be. It has to be very efficient and very closely adjusted to the clinical work of the prescriber and his/hers electronic system. Patient turn over is mainly very rapid in hospital these days. A person getting this eduation program must be able to communicate very well with clincians and understand the processes of clinical work.*
14	… should prioritize activities at clinical wards providing acute care, for example the emergency department or acute admission ward.
15	… should prioritize activities at non-acute, surgical wards.
16	… should prioritize activities at non-acute, medical wards.
17	… should focus on all adult (18 years and older) patients.
18	… should only focus on older (65 years and older) patients.
19	***Room for survey taker to add thoughts on statements 14-18*** *- 15, 16 - The knowledge and education on pharmacotherapy are weaker in surgical wards than in medical wards, that's why I think priority should probably be given to these settings, especially when it comes to the care of patients with chronic conditions and treatment.* *17- Not sure focusing on all adults is relevant - at-risk situations should probably be defined (we don't have enough time to provide the same level of insight for all patients without any distinction).18- Focusing only on older patients is too restrictive.Additional comment: Peadiatric patients should be taken into consideration, in particular patients with chronic pathologies.* *- For this part, it is important to prioritize the more harmfull PE and then take in account all PE should focus on emergency careshould focus on pediatric Care should focus on chemotherapyshould focus on all in and out patients of a hospital.*

- The special settings and populations proposed (emergency care, surgery, aged 65 and older) require special focus, but the activity should be designed to cover all settings.
- Prioritisation depends on resources, Evidence for the factors shlould be provided.
- I do not understand why pediatric patients are not specifically mentioned.
- The priority should be defined specifically for the hospital.
- Number 17-18: I dont think you should focus on age groups only. Although older patients on average have more (difficult) medication (regimes), younger patients (also children) should sometimes need assistance of a pharmacotherapeutic stewardship program.
- A risk-based approach should be choosen.
- Acute and Elderly care issues are common - but in some ways if it is to be useful that reactive might be useful.
- There should be a priorization on elderly multi-morbid patients, patients with maligancies and those requiring anti-infectives, however servie hould be provided not exclusively.
- There may be exceptions: the situation may be ambiguous. Health Care and Pharmacotherapy are important for all ages.
- Pharmacological variation is largest at the start and end of life so both that age groups should be of interest, however all ages are interesting for drug treatment in a hospital setting, especially different disease groups affecting vital organs.
- I dont understand the question. I think that the interventions should be carried out by the normal staff, ie the stewardship people are there to oversee, encourage, and develop best practice.

20 … should only focus on polypharmacy (5 or more chronic medications in use) patients.

21 … should include all hospitalized patients, regardless of the number of medications in use.

22 There should be a formal team of healthcare professionals performing the tasks defined within an in-hospital pharmacotherapeutic stewardship program.

23 ***Room for survey taker to add thoughts on statements 20-22***

- 20- there are at-risks situations even in patients with less than 5 medications (renal insufficiency for instance). 21- impossible! or, with graduated interventions depending on the risk should focus on acute treatment and chronic treatment alikeshould focus on chronic treatment onlyshould focus on acute treatment only.
- The role of medical pharmacologists and pharmacists should be structured so that proper and structured medication management does not depend on the preferences or policies of one particular hospital, or on the skills of other medical or surgical or emergency specialities, but is identified as a relevant and independent task that requires specialization and is foreseen as a measurable clinical activity.
- But, again, the main issue is to clarify the professional role of each actor.
- All these problems are actual and important: it`s not so easy to assess any problem which may be most important than others.
see question 19. Should the drug commitee or Department of Pharmacology administer such an education locally? Which basic educations is necessary to go through this stewardship program?

The team performing in-hospital pharmacotherapeutic stewardship and tasks within this program…

24 … should include ***at least*** the following medical specialty / specialties *(it is possible to check more than one box):*

A. Junior medical doctor (0-2 years of experience)

B. Senior_medical_doctor (at least2 years of experience)

C. Specialized medical doctor

D. Clinical hospital pharmacist

E. Public pharmacist

F. Physician assistant

G. Nurse

H. Medical student

I. Pharmacy student

J. Pharmacy technician

K. Pharmacy practitioner

L. Nurse practitioner

M. Clinical pharmacologist

N. Other

Room for survey taker to add thoughts on 'Other:'

- Other specialties which can be useful for in-hospital pharmacotherapeutic stewardship.

- Statistician is needed and maybe an economist. The team looks very much like the Drug Committe.

Room for survey taker to add comments on statements 24:

- clinical pharmacologist +++++ >>>>> clinical/hopital pharmacist.

- i dont know pharmacy technician. I can not have an opinion.

- The task requires specialization and specific professional traininig.

- Students, irrespective of nature, are not structurally available in non-academic teaching hospitalsat least one of these should be included: specialised nurse, NP or PA (not necessarily all together).

- The staff required may depend on national curricula and specifics of training and lokal roles in the medication process. From our own experience, a specialized madical doctor is often essential to put phyarmacists recommendations into a clinical perspective.

- In University Hospitals, students are most welcome (I would say mandatory for the high educational value). In other hospitals, their presence is not mandatory of course, depending on the context.

- Healthcare professional teams should preferentially include clinical pharmacologists (physicians) and clinical pharmacists and some medical doctors in training (of clincal pharmacology or interal medicine).

25 … should include ***ideally*** the following medical specialty / specialties *(it is possible to check more than one box):*

A. Junior medical doctor (0-2 years of experience)

B. Senior_medical_doctor (at least2 years of experience)

C. Specialized medical doctor
D. Clinical hospital pharmacist
E. Public pharmacist
F. Physician assistant
G. Nurse
H. Medical student
I. Pharmacy student
J. Pharmacy technician
K. Pharmacy practitioner
L. Nurse practitioner
M. Clinical pharmacologist
N. Other

Room for survey taker to add thoughts on 'Other':
- Medical microbiologist / infectiologistrepresentative of the department of education / professional training / in-house teachingradiopharmacologist (depending on topic)clinical gerontologist and pediatrician and psychiatrist(depending on topic).

Room for survey taker to add comments on statements 25:
- Students as a part of their training - nurse students should also be included.
- Clinical pharmacologists would be well placed to lead this, but (here in the UK at least) a lot, probably the majority, of hospitals do not have a clinical pharmacologist. Other potential leads could be consultant pharmacists, or consultants in geriatrics or general internal medicine.
- Nurse or physician assistant/specialist nurse/advanced nursing practice nurse.
- The medical specialty "Clinical Pharmacologist" as a most important specialty must be present in every hospitals pharmacotherapeutic stewardship.
- Statistician is needed and maybe an economist

26 … should have identifiable and qualified team members and have identified time for in-hospital pharmacotherapeutic stewardship in their job plan.
27 … should have an identifiable, pharmacological qualified lead team member who has time for pharmacotherapeutic stewardship in their job plan.
28 … should monitor Quality Indicators (QIs) for pharmacotherapeutic stewardship and should make these data available.
29 There should be a weekly multidisciplinary meeting / ward round (face-to-face / virtual) to discuss findings of patients eligible of receiving pharmacotherapeutic
30 There should be a system in place for rapid communication between prescribers and team members.
31 ***Room for survey taker to add thoughts on statements 24-30***
- Question 27, pharmacological qualified is not the only skill able to manage this program. a broader approach adapted to local contexts would be more efficient and with better support from the teams.
Q28 the frequnecy of meetings should be realted to the patient turnover , Geneeral medication safety and patient specific consultatins should be considered

	separately . *- Ad. 29: frequenter Dan wekelijks* *- Re. question 29 - Pharmacotherapeutic stewardship should be for all patients so I don't think a weekly meeting should be to identify patients for this. But I do think that regular meetings to identify high risk patients (e.g. extensive polypharmacy >10 meds) could be very useful.* *- Ideally an MDT (akin to cancer care) would be useful. This not only allows more holistic clinical care, but builds up expertise and education in this area.* *- Full access to EHR and prescribing software necessary* *- All these aspects are important.* *- Wards rounds etc: clincial pharmacists and clinicians are involved here and sometimes also clinical pharmacologists. For learing/efficient teaching about drug use/drug lists weekly ward round are very important.*
32	There should be a mechanism in place to request pharmacotherapeutic assessment of patients by stakeholders within the hospital.
33	Pharmacotherapeutic assessment should be performed by a competent member of the pharmacotherapy team.
34	Prescribers should be given the opportunity to decline or accept advices resulting from pharmacotherapeutic assessment by this team.
35	Patients and their family should be informed about the outcomes of pharmacotherapeutic assessment and decisions resulting from this.
36	The pharmacotherapeutic stewardship plan should be documented in patient’s record.
37	The pharmacotherapeutic stewardship plan should be documented in the discharge summary or correspondence to the next line of care.
38	***Room for survey taker to add thoughts on statements 32-37*** *- Re. question 33 - some aspects of pharmacotherapeutic assessment should be carried out by all clinical staff - e.g. medicines reconciliation by a pharmacist, medicine history by clerking doctor, surveillance of ADEs. But I agree that further assessment/surveillance by dedicated pharmacotherapy team would be very valuable.* *- I do think that stakeholders should be able to ask for assessments. The clinical teams may be aware of things that the Pharmacotherapeutic team are not aware of, so should be allowed to accept or decline advice. It is imperative that assessments and decisions involve patients and are communicated in the notes and on discharge paperwork.* *- All these aspects are important.* *- I do not think such a program should replace the clincian reporting system, in stead it should strengthen it in a good and smart way by making good routines for prescription/drug use and drug surveillance of each patient.*
	Satisfaction status/experiences of…
39	… patients receiving pharmacotherapeutic stewardship should be monitored.
40	… clinicians consulting the pharmacotherapy team should be monitored.
41	Survival status of patients receiving in-hospital pharmacotherapeutic stewardship should be documented.
42	Hospital readmission status of patients receiving in-hospital pharmacotherapeutic stewardship should be documented.
43	***Room for survey taker to add thoughts on statements 39-42*** *- 41- It's in the field of research rather than in the field of care. Evaluating patient survival or re-admission is essential but exploring the relationship between pharmacotherapeutic stewardship and suvival or re-admission is a research question and cannot be explored individually, as the causes for such outcomes*

are multifactorial.
- Interventions are ideally introduced based on positive evidence - but I do think that monitoring should be kept to a minimum and only performed with a clear agenda in mind.
- 41 -42 these would only make sense if infromatin for all patients (with and without stewardship support) is collected to allow comparisons and "effect " Analyses.
- Re Q39-42 - all patients should be monitored for these things anyway. Further monitoring would be useful if additional care provided, e.g. if patient is flagged for a polypharmacy review.
- You should seperate the research into the effects of pharmacotherapeutic stewardship and the implementation in clinical practice. Extra monitoring means more burocracy and administration.
- Survival status is dependent on so many factors and I am not sure that this blunt instrument is useful. Having said that, I do think that readmission may be a useful indicator.
- Survival status and hospital readmission status of patients should be monitored for all patients, not only for those receiving pharmacotherapeutic Stewardship.
- All these aspects are important..
- I am very unsure about the aims here. I want a better system for drug prescription but it is important to collaborate with clinicians not to control them, but to educate them and to improve the current systems, to make the systems better (not a completely new start). This is team work. Maybe we should look more to how an economical account work in such processes, learn from them. Statistician support is important. It should focus on patient drug treatment both at individual and group level.

The team performing in-hospital pharmacotherapeutic stewardship should document…

44	... the number of Potentially Inappropriate Medications (PIMs).
45	... document the number of (preventable) Adverse Drug Events (ADEs).
46	... document the number of (preventable) Adverse Drug Reaction (ADR).
47	... the number of discrepancies (either intentional or unintentional) between the medication in use in before hospitalization and the medication in use at hospit
48	... the number of days a patient is inoptimally treated with medication.
49	... the number of patients identified with at least one prescribing errors (PEs).
50	... the number of prescribing errors (PEs) identified after pharmacotherapeutic assessment.

Room for survey taker to add thoughts on statements 44-50
- I agree with everything but I think the team should be cautious in order not to be considered "a medication cop" by the colleagues who are not directly involved in the pharmacotherapeutic stewardship. The way the evaluations and reports are presented should allow preserving trust and communication between profesionnals.
- International standards are needed regarding what is considered a clnically relevant medication error (here physicians and poharmacists often disagree). Standards are alo needed for causality assessemd for ADE (especially difficult in cases of polymedication).
- The aim would be to identify potential drugs for targeting potential deprescribing instead of highlighting PIM. Morevoer, a focus on drug interactions of

potential clinical relevance to be prevented wouls be useful.
- 44-51: documentation is fine, however it is not the outcome. The team should focus on outcome measures, deaths, adverse event reduction, patient satisfaction ....
- This is only relevant for research, not for clinical practice. The numbers are not relevant, only the individual treatment activities.
- I wonder, if the "number" of PIMs and ADRs are important. This is only for statistics. Optimization means to adapt dose and choice of drug, thereby considering physical conditions, co-morbidity, drug-drug-interactions and pharmacogenetics. Outcome data would be lenghts of hospital stay, costs of medication etc., but such data will be resolved from general recordings.
- All these aspects are important.
- This documentation (44-50) should remain confidential and only be used for publications, general reports, and targeted actions by management to improve in-hospital procedures and fix systematic error sources.
- The reporting here: at what level, the personal prescription of the clinician or an overview of for instance the Departmnents prescription or for å certain disease group etc. This has to be thougth of to aim this edaction to cover many patients in the program.