Revision of the International Pharmaceutical Federation’s Basel Statements on the future of hospital pharmacy: From Basel to Bangkok

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Purpose. The processes used to revise the 2008 Basel Statements on the future of hospital pharmacy are summarized, and the revised statements are presented.

Methods. The process for revising the Basel Statements followed an approach similar to that used during their initial development. The Hospital Pharmacy Section (HPS) of the International Pharmaceutical Federation (FIP) revised the 2008 FIP Basel Statements in four phases, including a survey of hospital pharmacists worldwide, an internal review, online forums, and a face-to-face “World Café” workshop in Bangkok, Thailand.

Results. The global survey on the initial Basel Statements included input from 334 respondents from 62 countries. The majority of respondents agreed that most of the initial Basel Statements were acceptable as written and did not require revision. In total, 11 statements were judged by more than 10% of respondents as needing revision or deletion. The FIP HPS executive committee used the survey results to develop 69 initial revised draft statements. After an online discussion with the international hospital pharmacy community, including individuals from 28 countries representing all six World Health Organization regions, a final set of draft statements was prepared for the live discussion involving participants from 20 countries. The final 65 revised Basel Statements were voted on and accepted.

Conclusion. Systematic revision of the FIP Basel Statements resulted in an updated reflection of aspirational goals for the future of hospital pharmacy practice. While this revision reflects the development of new goals for hospital pharmacy practice, the core principles of the Basel Statements remain an essential foundation for the discipline.

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The Hospital Pharmacy Section (HPS) of the International Pharmaceutical Federation (FIP) developed the Basel Statements on the future of hospital pharmacy in 2008. Published in 2009, the Basel Statements reflect the global pharmacy profession’s preferred vision of practice in the hospital setting.1 Developed through an exhaustive consensus process, the statements were finalized at the FIP Global Conference on the Future of Hospital Pharmacy held in Basel, Switzerland. The conference was a landmark event and has propelled numerous international initiatives to support and develop hospital pharmacy practices around the world.

The initial Basel Statements were based on extensive literature reviews on key aspects of the medicines-use process and hospital pharmacy practices around the world. A strong emphasis was placed on identifying evidence that supported current practices and promoted the safe use of medicines.1 In total, six aspects of the medicines-use process were identified, and evidence supporting each was compiled.2–7 These six aspects were medicines procurement,2 influences on prescribing,3 preparation
and delivery of medicines, administration of medicines, monitoring of medicines, and human resources and training. A final theme, reflecting overarching concepts related to the practice and leadership of hospital pharmacy, was also included in the final set of Basel Statements. The development of the Basel Statements was supported by a global survey of hospital pharmacy practice, commissioned by FIP to supplement the literature reviews in each area. Responses to the survey were received from 85 countries, representing 83% of the world’s nations. The survey results highlighted that while hospital pharmacy practices differed around the world, many nations faced similar challenges, regardless of their population size, location, or wealth.

Drawing from the literature reviews and survey results, a total of 348 participants, representing 98 countries, participated in the final consensus development process at the Global Conference on the Future of Hospital Pharmacy. National delegates voted on each final draft statement, and a mean of 97.5% of participants “strongly agreed” or “agreed” with the final statements. The literature reviews and survey results were published in early 2009 along with the initial Basel Statements, and those proceedings remain a rich source of information about the diversity of hospital pharmacy practices around the globe.

Since the release of the Basel Statements, significant work has been done to implement them worldwide. The Basel Statements have been translated into 21 languages, including all 6 official languages of the United Nations (Arabic, Chinese, English, French, Russian, and Spanish). Furthermore, FIP section members from every region of the world have completed projects on Basel Statement implementation. In the Western Pacific Region, in particular, several projects focusing on hospital pharmacists’ influence on prescribing have been completed and published. These projects provided a benchmark that countries in the Western Pacific Region can use to compare themselves and an in-depth analysis of numerous factors associated with successful implementation of the Basel Statements. Such initiatives have challenged hospital pharmacists around the world to continue to pursue excellence and advances in practice. As with all resources related to healthcare, work is needed to keep consensus statements current and reflective of contemporary practice. The need to revise and update the Basel Statements was considered almost immediately after they were first published. Initiatives that used these statements also noted that some included a duplication of concepts while others were highly complex and might be better expressed as separate statements. Furthermore, translation of many concepts into other languages and cultures may further amplify these issues. As such, the FIP HPS began making plans to revise the Basel Statements in late 2011. The revision process began in 2013 and was finalized in September 2014. This report summarizes the processes used to revise the Basel Statements on the future of hospital pharmacy and presents the revised version of the FIP Basel Statements.

Methods

The process for revising the Basel Statements followed an approach similar to that used during their initial development. The initial statements were developed using information obtained from an exhaustive global survey of hospital pharmacy practice, drafting by content experts, revision based on e-mail-based communication, and final refinement during a two-day consensus conference. The revision process also relied on a variety of consensus methods used to ensure wide participation and accurate reflections of all aspects of contemporary hospital pharmacy practice. The revision process took place in four phases: (1) a survey of hospital pharmacists from around the world, (2) internal review and initial revision, (3) an online forum, and (4) a face-to-face “World Café” workshop. The survey portion of the revision process was conducted under the auspices of the University of Sydney’s human research ethics committee. A detailed description of each of these four phases is provided here.

Global survey. In order to capture as much input as possible regarding the revisions needed in the initial Basel Statements, a survey of the global hospital pharmacy community was conducted. The survey instrument was developed by the FIP HPS executive committee. Respondents were asked to rate each of the initial 75 statements, indicating if they (1) agreed with the statement as it was written and wished to leave it unchanged, (2) thought
it should be deleted entirely, or (3) thought that alternative wording was necessary. In the late case, respondents were asked to suggest revised language to be included in the statements. Respondents were also asked to suggest new statements that were not included in the initial version.

The survey was distributed through an online Internet-based survey service (SurveyMonkey, Palo Alto, CA) in November 2013, and responses were collected through the end of February 2014. The survey was distributed to a wide range of potential respondents, including FIP members, members of national hospital pharmacy associations, and members of state and provincial hospital pharmacy associations. Individuals who had participated in the development of the initial Basel Statements were also surveyed. All recipients were encouraged to distribute the survey to other hospital pharmacists. Two reminder e-mails were also sent to encourage participation in the survey.

**Internal review and initial revision.** The aims of the initial review were to refine suggestions obtained from survey respondents and to produce a draft version of the revised Basel Statements. The results of the survey were reviewed in detail by the FIP HPS executive committee in a two-day, face-to-face meeting in Santpoort, Netherlands, in March 2014. The committee comprises the HPS officers and representatives from Australia, France, Ghana, Japan, Nepal, Pakistan, South Africa, Netherlands, and the United States. While each of the initial statements was reviewed, special attention was paid to statements that were identified for revision by more than 10% of survey respondents.

**Online forum.** The draft version of the revised Basel Statements prepared by the FIP HPS executive committee was then made available on an online forum for the international hospital pharmacy community to review and discuss. Members of the FIP HPS executive committee served as facilitators for the online discussion, providing iterative feedback until participants’ opinions converged satisfactorily and consensus was achieved. The online forum was opened in June 2014, and an invitation to participate was sent to the same individuals and groups invited to participate in the survey. All participants were encouraged to invite others to participate in the online forum. The online forum remained open until September 2014.

**World Café workshop.** The final phase of the revision process, a one-day, face-to-face consensus workshop, was held on September 4, 2014, during the 74th FIP World Congress in Bangkok, Thailand. A facilitated group consensus process, called the “World Café,” was used. The World Café is an effective method that uses seven design principles to examine and review diverse individual perspectives and draws them into a single, collective perspective.

Participants were divided into small groups and rotated among stations focusing on each of the seven Basel Statement themes. Each station was facilitated by a member of the executive committee. Graphic recording was used to capture ideas and expressions about the draft statements in each theme, using words, images, or colors as they were expressed by participants. Each small group was given 20 minutes at each station; then participants were reassigned to new groups and rotated to other themes. Comments and suggestions made by previous small groups were then considered, added to, revised, or discarded by each subsequent small group arriving at each station. Active facilitation was used to elicit as much input into each statement as possible.

At the conclusion of the round-robin World Café discussions, revised statements were compiled by facilitators and presented to the assembled participants. All present were asked to vote on their acceptance of each revised statement, and discussion was invited. Voting was conducted openly, and each statement was accepted if more than 95% of participants agreed to accept it.

**Results**

**Global survey.** In total, 334 responses to the global survey were received from 62 countries (Appendix A) (32% of the 196 United Nations’ recognized countries, Table 1). The greatest numbers of responses by nation were received from the Philippines, South Africa, and the United States (36% of total responses). Responses were received from each of the six World Health Organization (WHO) regions. In total, 50% of nations represented were high-income level nations as defined by the World Bank income grouping scheme, while 27% were from upper middle-income, 13% were from lower middle-income, and 8% were from low-income level nations. The greatest number of responses by region was from Europe, which made up 39% of total participating nations.

The professional demographics of respondents are outlined in Table 2. A majority of respondents were in leadership or clinical positions within hospital pharmacy (41.3% and 25.0%, respectively), and a majority were employed in a public teaching hospital or public nonteaching hospital (23.8% and 20.0%, respectively). A majority (90.5%) of respondents had at least 5 years of practice experience, with 39.9% having been in practice for at least 20 years.

The majority of respondents agreed that most of the initial Basel Statements were acceptable as written and did not require revision. In total, 14 statements were judged by more than 10% of respondents as needing revision or deletion (Table 3). By theme, these 14 included 7 overarching statements, 1 on medicines procurement, 1 on influences on prescribing, 1 on preparation and delivery of medicines, and 4 on the administration of medicines.

**Internal review and initial revision.** During the initial revision process conducted by the executive commit-
tee, the results of the survey provided the necessary guidance to revise many of the initial statements. Language was simplified, related statements were combined and clarified, and several new draft statements were developed. In total, the 75 initial Basel Statements were refined, resulting in a total of 69 draft statements. Ten of the initial statements were merged into other statements to prevent duplication. Many of the initial statements were merged into a revised overarching statement that hospital pharmacists should optimize patient outcomes through the “responsible use of medicines,” a term newly defined by FIP. Responsible use of medicines means (1) that a medicine is used only when necessary and that the choice of medicine is appropriate based on what is proven by scientific or clinical evidence to be most effective and least likely to cause harm (this choice also considers patient preferences and makes the best use of limited healthcare resources), (2) there is timely access to and the availability of quality medicine that is properly administered and monitored for effectiveness and safety, and (3) a multidisciplinary collaborative approach is used that includes patients and individuals in addition to health professionals who are assisting in patient care.

Other statements that were merged appeared in the administration theme, as the initial Basel Statements included some specific statements to promote patient safety. Many of these statements were merged and presented instead as examples.

Three new draft overarching statements were also added based on the survey work and discussion:

1. Hospital pharmacists should take responsibility for the management and disposal of waste related to the medicine-use process, including human waste from patients receiving medicines.
2. Hospital pharmacists should take responsibility for all aspects of selection, implementation, and maintenance of technologies that support the medicine-use process, including distribution devices, administration devices, and other equipment.
3. Hospital pharmacists should take responsibility for the development, assessment, implementation, and maintenance of medicine-related analytics and informatics systems that guide therapeutic decision-making and improve the medicine-use process.

Online forum. The draft version of the revised Basel Statements was posted online for discussion by the international hospital pharmacy
Table 3. Original Basel Statements for Which 10% or More of Survey Respondents Indicated That Revision or Deletion Was Needed

<table>
<thead>
<tr>
<th>Statement</th>
<th>No. (%) Respondents Giving Indicated Opinion About Statement</th>
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<tbody>
<tr>
<td></td>
<td>Appropriate as Written</td>
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<tr>
<td>Overarching statements</td>
<td></td>
</tr>
<tr>
<td>1. The overarching goal of hospital pharmacists is to optimize patient outcomes through the judicious, safe, efficacious, appropriate, and cost effective use of medicines. (n = 208)</td>
<td>182 (87.5)</td>
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<tr>
<td>3. The “five rights” (the right patient, right medicine, right dose, right route, and right time) should be fulfilled in all medicines-related activities in the hospital. (n = 204)</td>
<td>160 (78.4)</td>
</tr>
<tr>
<td>5. Health authorities should ensure that each hospital pharmacy is supervised by pharmacists who have completed specialized training in hospital pharmacy. (n = 199)</td>
<td>167 (83.9)</td>
</tr>
<tr>
<td>6. The chief pharmacist/director of pharmacy should be the senior professional responsible for coordinating the judicious, safe, efficacious, appropriate, and cost effective use of medicines in the hospital. (n = 201)</td>
<td>172 (85.6)</td>
</tr>
<tr>
<td>7. Hospital pharmacists’ authority over the medicine-use process should include authority over the selection and use of medicine-related devices such as administration devices, giving sets, infusion pumps and computer-controlled dispensing cabinets. (n = 199)</td>
<td>157 (78.9)</td>
</tr>
<tr>
<td>8. Hospital pharmacists should take responsibility for all medicines logistics in hospitals. (n = 199)</td>
<td>168 (84.4)</td>
</tr>
<tr>
<td>10. All prescriptions should be reviewed, interpreted, and validated by a hospital pharmacist prior to the medicine being dispensed and administered. (n = 202)</td>
<td>173 (85.6)</td>
</tr>
<tr>
<td>Medicines procurement</td>
<td></td>
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<tr>
<td>18. Procurement should be guided by the principle of procuring for safety. (n = 184)</td>
<td>134 (81.7)</td>
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<tr>
<td>Influences on prescribing</td>
<td></td>
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<tr>
<td>30. Hospital pharmacists should be an integral part of all patient rounds to assist with therapeutic decision-making and advise on clinical pharmacy and patient safety issues. (n = 182)</td>
<td>162 (89.0)</td>
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<tr>
<td>Preparation and delivery of medicines</td>
<td></td>
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<tr>
<td>38. Hospital pharmacists should decrease the risk of medication errors by implementing evidence-based systems or technologies, such as automated prescription-filling, unit dose distribution, and bar coding systems. (n = 156)</td>
<td>136 (87.2)</td>
</tr>
<tr>
<td>Administration of medicines</td>
<td></td>
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<tr>
<td>43. Hospital pharmacists should ensure that allergies are accurately recorded in a standard location in patient record and evaluated prior to medicines administration. (n = 156)</td>
<td>136 (87.2)</td>
</tr>
<tr>
<td>50. Vinca alkaloids should be diluted, ideally in a minibag and/or large syringe (for pediatric patients), and dispensed with special labeling precautions in order to prevent inadvertent intrathecal administration. (n = 154)</td>
<td>129 (83.8)</td>
</tr>
<tr>
<td>52. Medicines not commercially available for neonatal and pediatric patients should be prepared by the hospital pharmacy. (n = 156)</td>
<td>128 (82.1)</td>
</tr>
<tr>
<td>54. Hospital pharmacists should be responsible for determining which medicines are included in ward stock and for standardizing the storage and handling of ward medicines. (n = 157)</td>
<td>139 (88.5)</td>
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community. Individuals from 28 countries, representing all 6 WHO regions, participated in this discussion. Many participants offered positive comments about the proposed changes, and there was strong support for the new draft statements and the concept of responsible use of medicines. Some additional concepts that arose from the online discussion included the following: (1) having hospital pharmacists collaborate with the Hospital Committee for Health Technology Assessment, (2) using the term adverse drug events throughout the statements to encompass both medication errors and adverse drug reactions, (3) holding a hospital pharmacy ultimately responsible for the integrity of a product if the pharmacy is unable to compound a sterile product and outsourcing occurs, and (4) developing specialty practice in hospital pharmacy.

World Café workshop. In total, 80 participants from 20 countries participated in the World Café workshop hosted in Bangkok, Thailand. The draft version of the revised Basel Statements and comments from the online forum were presented to all participants and discussed in multiple small groups. Numerous changes were made to the draft statements during this workshop. At the end of the workshop, the statements were voted on, resulting in the final 65 revised Basel Statements (Appendix B).

Discussion

The revision process highlights the robust work that initially occurred in developing the Basel Statements, as only minor modifications were needed. Based on experience with the implementation of the initial Basel Statements, we believe that these guiding principles will result in more-effective and cost-efficient patient care worldwide. This revision process serves to highlight the increasing role that hospital pharmacists play in the direct care of all patients, as well as our continuing responsibility to serve as stewards of pharmaceutical technology.

Hospital pharmacists around the world still share the same unified vision for the future of the profession, with some additional responsibilities added since the Global Conference in 2008. The largest change since the original Basel Statements were released was the concept of responsible use of medicines. The term, recently defined within FIP implies that the activities, capabilities, and existing resources of health-system stakeholders are aligned to ensure that patients receive the right medicines at the right time, use them appropriately, and benefit from them.18

The concept of responsible use of medicines was developed by an FIP Working Group for the 2012 FIP Centennial.18 This description complements and is not intended to be a substitute for the WHO definition of rational medicine use, which is as follows: “Medicine use is rational (appropriate, proper, correct) when patients receive the appropriate medicines, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost both to them and the community.”19 As described, the focus of rational medicine use is the patient and the medicine the patient receives. Responsible use of medicines further expands on this concept by recognizing the importance of patient and medication safety, medication availability, correct medication use, and monitoring and by encompassing other healthcare professionals, policymakers, caregivers, and health systems.

Another major development since the initial Basel Statements was the release of the joint FIP/WHO Guidelines on Good Pharmacy Practice.20 One new concept in these guidelines was pharmacists’ responsibility over the management and disposal of waste related to the medication-use process. FIP promotes the concept that pharmacists should accept a degree of responsibility for managing the entire medicine-use process in order to minimize the environmental effects of pharmaceuticals. Reengineering the entire process of prescribing, dispensing, pharmaceutical care, and disposal of unused medication should ultimately result in a reduction in metabolic waste discharged into the environment.20,21 Furthermore, a recent draft of the Green Pharmacy Practice Report by FIP highlighted the different ways that medicines find their way into the water supply, soil, and atmosphere and their harmful effects.21 For pharmacists to accept the professional challenge of reducing the environmental impact of the medications for which they are responsible, the profession needs to provide meaningful leadership in an area that is virtually devoid of such leadership. Accordingly, these concepts were added to the revised Basel Statements.

Lastly, with the expanding role of information and technology in health systems, pharmacists were acknowledged to play a key role in technology development, assessment, implementation, and maintenance. Medicine-related analytics and informatics systems that guide therapeutic decision-making and improve the medicine-use process have become increasingly common, and pharmacists should be crucial stakeholders in their development and use. At the time of the initial Basel Statements, informatics was a newly growing field, with only 6% of U.S. hospitals having a complete electronic health record system with no paper records in 2007.22 By 2013, 27% of U.S. hospitals operated a complete electronic health record system, with 93% of hospitals in the United States having a partial or complete electronic health record system.23 Additional statements were added to reflect these changes in practices. During the revision process and in parallel with the FIP process described here, the European Association of Hospital Pharmacists (EAHP) embarked on adapting the Basel Statements for use in Europe. EAHP is a federation of national
organizations across 34 countries representing hospital pharmacists at European and international levels. Similar to the FIP process, EAHP nominated a working group of hospital pharmacists to identify which Basel Statements were applicable to the European context. EAHP also made additional efforts to ensure that patients and other healthcare professional groups were included in their process. The robust work that resulted in the development of 44 European Statements of Hospital Pharmacy was strongly referenced in the revision process of the Basel Statements. Other regions are encouraged to adopt a similar system to that used by EAHP in adapting the Basel Statements to support the global advancement of hospital pharmacy in a specific country, group of countries, or region.

Over the coming years, the FIP HPS will work to further develop the Basel Statements and support ongoing efforts to implement them in practice. FIP has developed a Web portal to provide hospital pharmacists worldwide with access to the statements and other supportive resources.

Conclusion
Systematic revision of the FIP Basel Statements resulted in an updated reflection of aspirational goals for the future of hospital pharmacy practice. While this revision reflects the development of new goals for hospital pharmacy practice, the core principles of the Basel Statements remain an essential foundation for the discipline.

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Disclosures
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References
Appendix A—Nations represented by survey respondents
Afghanistan  Albania  Argentina  Australia  Austria  Brazil  Brunei Darussalam  Canada  China  Cook Islands  Costa Rica  Croatia  Denmark  Estonia  Fiji  France  Germany  Ghana  Greece  Hungary  India  Indonesia  Ireland  Israel  Jamaica  Japan  Kenya  Lebanon  Luxembourg  Macedonia, former Yugoslav Republic  Malaysia  Mexico  Micronesia, Federated States  Netherlands  New Zealand  Nigeria  Norway  Pakistan  Peru  Philippines  Portugal  Qatar  Romania  Saudi Arabia  Serbia  Singapore  Slovenia  South Africa  South Sudan  Spain  Sweden  Switzerland  Taiwan (Republic of China)  Tanzania, United Republic  Thailand  Trinidad and Tobago  Uganda  United Arab Emirates  United Kingdom  United States  Uruguay  Zimbabwe

Appendix B—Revised Basel Statements on the future of hospital pharmacy

Overarching and governance statements
1. The overarching goal of hospital pharmacists is to optimize patient outcomes through collaborative, interprofessional, responsible use of medicines and medical devices.

> The responsible use of medicines means
> - That a medicine is only used when necessary and that the choice of medicine is appropriate based on what is proven by scientific and/or clinical evidence to be most effective and least likely to cause harm. This choice also considers patient preferences and makes the best use of limited healthcare resources.
> - There is timely access to and the availability of quality medicine that is properly administered and monitored for effectiveness and safety.
> - A multidisciplinary collaborative approach is used that includes patients and those in addition to health professionals assisting in their care.

2. At a global level, evidence-based hospital pharmacy practice standards should be developed. These should assist national efforts to define standards for the extent and scope of hospital pharmacy services and should include corresponding human resource and training requirements.

3. Hospital pharmacists should engage health authorities and hospital administrators to ensure appropriate resources for, and design of, the hospital medicine-use process.

4. Health authorities should ensure that each hospital is serviced by a pharmacy that is supervised by pharmacists who have completed advanced training in hospital pharmacy.

5. The Chief Pharmacist/Director of Pharmacy should be the accountable professional coordinating the responsible use of medicines in the hospital.

6. Hospital pharmacists should serve as a resource regarding all aspects of medicines use and be accessible as a point of contact for patients and healthcare providers.

7. All prescriptions should be reviewed, interpreted, and validated by a hospital pharmacist prior to the medicine being dispensed and administered.

8. Hospital pharmacists should monitor patients taking medicines to assure patient safety, appropriate medicine use, and optimal outcomes for inpatients and outpatients. When resource limitations do not permit pharmacist monitoring of all patients taking medicines, patient-selection criteria should be established to guide pharmacist monitoring.

9. Hospital pharmacists should be allowed to access and document in the full patient record.

10. Hospital pharmacists should ensure that patients or caregivers are educated and provided written information on the appropriate use of medicines.

11. Hospital pharmacists should provide orientation, drug information and education to nurses, physicians, and other hospital staff regarding best practices for medicines use (a best practice is a method or technique that has consistently shown results superior to those achieved with other means and that is used as a benchmark).

12. Undergraduate pharmacy curricula should include hospital-relevant content, and postgraduate training programs and specializations in hospital pharmacy should be developed.

13. Hospital pharmacists should actively engage in research into new methods and systems to improve the use of medicines and of human resource needs in hospital pharmacy.

14. Hospital pharmacists should take responsibility for the management and disposal of waste related to the medicine-use process, and advise on disposal of human waste from patients receiving medicines.

15. Hospital pharmacists should take responsibility for all aspects of selection, implementation, and maintenance of technologies that support the medicine-use process, including distribution devices, administration devices, and other equipment.

16. Hospital pharmacists must ensure proper storage to maintain the integrity of medicines across the supply chain to ensure quality, safety, and security.

17. Hospital pharmacists should ensure appropriate assessment, development, implementation, and maintenance of clinical decision support systems and informatics that guide therapeutic decision-making and improve the medicine-use process.
18. Each pharmacy should have contingency plans for medicine shortages and emergencies.
19. The “seven rights” (right patient, medicine, dose, route, information, documentation, and time) should be fulfilled in all medicine-related activities in the hospital.

Theme 1–Procurement
20. Hospital pharmacists should be involved in the complex process of procurement of medicines and health products, promoting equity and access. They should ensure transparent procurement processes are in place in line with best practice and national legislation, are free from conflict of interest, and are based on the principles of safety, quality, and efficacy.
21. Procurement practices must be supported by strong quality assurance principles, regularly reviewed, and adapted to fit different settings and emerging needs in the most appropriate and cost-effective way.
22. Procurement should not occur in isolation but rather be guided by the formulary selection process. This includes the procurement of standard concentrations of high-risk medicines including electrolytes.
23. Procurement must be supported by a reliable information system that provides accurate, timely, and accessible information.

Theme 2–Influences on Prescribing
24. Hospitals should utilize a medicine formulary system (local, regional, and/or national) linked to standard treatment guidelines, protocols, and treatment pathways based on the best available evidence.
25. Hospital pharmacists should be key members of pharmacy and therapeutics committees to oversee all medicines management policies and procedures, including those related to off-label use and investigational medicines.
26. Hospital pharmacists should have a key role in educating prescribers at all levels of training on the access to and evidence for responsible use of medicines, including the required monitoring parameters and subsequent prescribing adjustments.
27. Hospital pharmacists should be an integral part of the multidisciplinary team responsible for therapeutic decision-making in all patient care areas.
28. Hospital pharmacists should promote seamless care by contributing to the transfer of information about medicines whenever patients move between and within healthcare settings.

Theme 3–Preparation and Delivery
29. Appropriately trained and credentialed hospital pharmacists should participate in collaborative prescribing.
30. Hospital pharmacists should assume responsibility for storage, preparation, dispensing, and distribution of all medicines, including investigational medicines.
31. Hospital pharmacists should assume responsibility for the appropriate labeling and control of medicines stored throughout the facility.
32. Hospital pharmacists should be involved in determining which medicines are included in ward stock and standardizing the storage and handling of ward medicines.
33. Hospital pharmacists should ensure that compounded medicines are consistently prepared to comply with quality standards. This includes taking responsibility for ensuring medicines not commercially available in a suitable formulation are prepared to accepted practice standards and ensuring that injectable admixture services comply with accepted practice standards.
34. The preparation of hazardous medicines including cytotoxics should be under the responsibility of the hospital pharmacist and prepared under environmental conditions that minimize the risk of contaminating the product and environment minimize exposure of hospital personnel to harm using accepted practice standards.
35. Hospital pharmacists should implement evidence-based systems or technologies (e.g., automated prescription filling, unit dose distribution, machine-readable coding systems) to decrease the risk of medication errors.
36. Hospital pharmacists should support the development of policies regarding the use of medicines brought into the hospital by patients, including the evaluation of appropriateness of complementary and alternative medicines.
37. Hospital pharmacists should implement systems for tracing medicines dispensed by the pharmacy (e.g., to facilitate recalls).
38. Concentrated electrolyte products (such as potassium chloride and sodium chloride) and other institutionally identified high-risk medicines should be dispensed in ready-to-administer dilutions and stored in secure, separate areas with distinct labels.
39. Hospital pharmacists should develop simple, rules-based approaches to advancing patient safety; for example, when a large number of dosage units are needed to give a dose (more than two tablets, vials, etc.), the prescription should be verified prior to preparation or dispensing.

Theme 4–Administration
40. Hospital pharmacists should ensure that the information resources needed for safe medicines preparation and administration are accessible at the point of care.
41. Hospital pharmacists should ensure that clinically relevant allergies, drug interactions, contraindications, past adverse events, and other relevant medication history details are accurately recorded in a standard location in patient records and evaluated prior to medicine use.
42. Hospital pharmacists should ensure that medicines are packaged and labeled to ensure identification and to maintain integrity until immediately prior to administration to the individual patient.
43. Medication labels should be clear and have sufficient information to ensure safe administration, including at least two patient identifiers, the name of the medicine, prescribed route, dose in mass and, where appropriate, volume, and rate of administration.
44. Hospital pharmacists should ensure that healthcare professionals who administer medicines are appropriately trained in their use, hazards, and necessary precautions.
45. Doses of chemotherapy and other institutionally identified high-risk medicines should be independently checked against the original prescription by at least two healthcare professionals, one of whom should be a pharmacist, prior to administration.
46. Hospital pharmacists should develop and implement policies and practices that prevent route errors. Examples include:
   - Labeling of intravenous tubing near insertion site to prevent misconnections,
   - Use of enteral feeding catheters that cannot be connected with intravenous or other parenteral lines,
   - Packaging vinca alkaloids to prevent inadvertent intrathecal administration,
50. An easily accessible reporting system for adverse drug reactions should be established and maintained. Reports of reactions should be reviewed internally and sent in a timely manner to regional or national pharmacovigilance or regulatory reporting programs. These data should be regularly reviewed to improve the quality and safety of medicine-use practices.

51. An easily accessible, nonpunitive reporting system for medication errors, including near misses, should be established and maintained. Reports of medication errors should be reviewed internally and sent to regional or national medication error reporting or regulatory programs. These data should be regularly reviewed to improve the quality and safety of medicine-use practices.

52. Medicine-use practices should be self-assessed and compared with benchmarks and best practices to improve safety, clinical effectiveness, and cost-effectiveness.

53. The medicine-use process should be reviewed through an external accreditation or quality-improvement program. Hospitals should act on reports to improve the quality and safety of their practices.

54. Pharmacists’ clinically relevant activities should be documented, collected, and analyzed to improve the quality and safety of medicine use and patient outcomes. Activities that significantly impact individual patient care should be documented in the patient record.

55. Systematic approaches (e.g., trigger tools) should be used to provide quantitative data on adverse drug events and optimal medicine use. These data should be regularly reviewed to improve the quality and safety of medicines practices.

Theme 6–Human Resources, Training, and Development

56. At a national level, competency frameworks are defined, established, and regularly assessed.

57. At a national level, hospital pharmacists should engage health authorities to bring together stakeholders to collaboratively develop evidence-based hospital pharmacy human resource plans to support the responsible use of medicines, including those in rural and remote areas.

58. Hospital pharmacists should work with key stakeholders to ensure that work-force education, training, competency, size, and capacity are appropriate to the scope of services, coverage, and responsibilities of all cadres providing pharmacy services.

59. Hospital pharmacy work-force plans should describe strategies for human resource education and training, recruitment and retention, competency development, remuneration and career progression pathways, diversity-sensitive policies, equitable deployment and distribution, management, and roles and responsibilities of stakeholders for implementation.

60. Hospitals should maintain human resource information systems that contain basic data for planning, training, appraising, and supporting the work force. Data should be collated at a national level to improve work-force planning.

61. The training programs of pharmacy support staff should be nationally formalized, harmonized, and credentialed within a defined scope of practice.

62. Hospital human resource policies should be founded in ethical principles, equity, and human rights and be compliant with labor regulations, guidelines, and hospital pharmacy practice standards.

63. Hospitals should use the nationally accepted competency framework to assess individual human resource training needs and performance.

64. To promote interprofessional education and team-based care, the role of hospital pharmacists, including collaborative prescribing, should be included in the curricula of other healthcare professionals, and the roles of other healthcare professionals should be included in the pharmacy curricula.

65. Postgraduate clinical courses should be developed to prepare hospital pharmacists for collaborative prescribing of medicines, including instruction in legal and professional accountability.