A response to the Clinical Pharmacology in research, teaching and Health Care.
Considerations by IUPHAR, the International Union of Basic and Clinical Pharmacology

With this message I would like to respond to the call of the WHO Secretariat for the Expert Committee for the Selection and Use of Essential Medicines to submit comments to the abovementioned document with the aim of making the final version as globally relevant and applicable as possible.

I would like to welcome this document (Review) and its aim to set the scene for clinical pharmacology in the 21st century in an attempt to persuade primarily governmental decision makers to improve healthcare delivery for all populations through expertise of the discipline of clinical pharmacology; and would like to thank the authors who have undertaken the difficult effort and important work and congratulate with this achievement.

I wholeheartedly support the Review document and the idea that clinical pharmacology as a specialty which is uniquely equipped with knowledge and expertise to promote patient care through the rational use of medicines with independent information delivery, research, teaching and through the public health needs driven scientific advice for drug development. In this way clinical pharmacology indeed needs strong WHO and governmental support.

However, a number of issues outlined in the document raise some concerns.

The document presents a comprehensive overview of the discipline of clinical pharmacology based primarily on the English language literature. It leaves out the Global particulars and thus provides a somewhat skewed picture.

The document has not been designed as a critical analysis of implementation of the historical Report of WHO study group (1970, TRS 446) with appraisal of successes, contributions and shortcomings of clinical pharmacology as a practicing medical specialty with the WHO defined mission “to safeguard individual and public health”

The sequence of reviewed topics, placement of the section “Patient care” after research and teaching as reflected also in the title of the review, and placement of the section “The Contribution of Clinical Pharmacology to the Global Public Health” as the last one on the list, as well as inclusion of separate sections “Pharmaceutical industry” and “The relationship with Other Experts” catch the eye of the reader. These seem to reflect the actual situation with the discipline of clinical pharmacology of losing its due key role in patient care and health delivery. It illustrates the major hurdles in the specialty development. This also seems to be in fact diverting from the original WHO vision of the development of the specialty of clinical pharmacology and its mission, as it had been formulated in the item 7 of the summary of the 1970 WHO technical report: (7) To safeguard individual and public health, an immediate and substantial expansion of clinical pharmacology is essential; and in the description of the scope: “The functions of the clinical pharmacologists are (1) to improve patient care by promoting the safer and more effective use of drugs; (2) to increase knowledge through research; (3) to pass on knowledge through teaching and (4) to provide services, e.g., analysis, drug information, and advice on the design of experiments.
A number of arguments presented in the document seem to derive rather from the agenda of the pharmaceutical industry per se (meaning profit oriented businesses) and not from public health needs. This is of crucial importance in view of health oriented mission of clinical pharmacology: it would seem very appropriate that the function of clinical pharmacologists within the industry would be to advise on research and development to follow the public health needs and not the opposite as has been the case for quite some time now.

Declaring a completely independent position and being free of any conflicts of interest, with the exception of the interest of the specialty of clinical pharmacology as a practical medical (health care driven), teaching and research discipline, I would like to draw your attention to the following points (following the sequence of the Review).

1. Definition of Clinical Pharmacology

The document provides the definition of the specialty of Clinical pharmacology which had not been formulated by the original WHO document. The definition if to be provided at all would be better discussed globally and existing definitions be referred to. It would seem that for the WHO consideration the definition of clinical pharmacology would have needed to include the following: the discipline of clinical pharmacology was established to contribute to public health through the rational use of medicines utilizing all its organizational, teaching and research modalities. The examples of key words which in my view are currently missing from the suggested definition include: ‘independent information’, ‘responsibility’, ‘epidemiology’….

2. History of Clinical Pharmacology

This section, based on 8 references, does not present the global perspective in a balanced way. For example, the history and traditions of clinical pharmacology of the former Soviet Union which contributed to the health of the citizen and the best health indices at the times of its golden age (1960-1970), has not been included. [Вотчал Б. Е. Очерки клинической фармакологии. – М., 1963, 1965, 2007 – Votchal V.E. Studies on clinical pharmacology. - 1963, 1965, 2007].

3. Provision of independent information and unique position of clinical pharmacologists

The most important public health service of clinical pharmacology – delivery of independent scientific (evidence-based) medicine information (the number one service on the list of clinical pharmacology services on the WHO 1970 Technical report) – has been addressed in several sections of the document: in the section on governments, organization, contribution to Global Public health and primarily in the subsection on the rational use of medicines; in the section on patient care, in the list of services (the fourth of 11 services); and in the section on education.

The global problem of pharmaceutical promotion (misleading unethical advertising/marketing) has been shyly addressed as the last bullet point on the list of trends which specify prescribing demands (the section on education).
This is despite the fact that clinical pharmacologists by their scope (outlined by the 1970 WHO Technical Report) are uniquely placed in health systems and should be uniquely equipped to deliver this function. The document does not touch sufficiently on the issue of independent pharmaceutical information generation and delivery.

3. Evaluation of clinical pharmacology performance for the last 40 years, controversial issues

Though the document does not provide systematic analysis of clinical pharmacology achievements and losses through the four decades,

- it does mention that there is a worldwide shortage of clinical pharmacologists,
- it emphasizes that the discipline of Health Technology Assessment (HTA) has emerged in the absence of contributions from clinical pharmacologists and
- it stresses that “the solid knowledge about the pharmacological principles that underpin the RUD [rational use of drugs] is just as relevant as it was in 1970.”

The document acknowledges that despite the new developments “we are still dealing with problems in drug therapy that were recognized in the 1970s”, points to prescribing errors as the global health problem, and concludes that compliance with WHO recommendations has been “generally unsatisfactory”.

However the document repeatedly emphasizes differences in requirements to clinical pharmacologists and their performance in 1970 and in the beginning of the 21st century and the need for change.

The research section describes exciting research achievements but does not acknowledge that primarily research-oriented development of the specialty in the last decades in laboratories of pharmaceutical companies accounts for the fact that modern clinical pharmacology has drifted away from its public health mission formulated by the WHO study group at its inception. The challenge for numerous mentioned translational medicine nowadays is to indeed translate the essential new knowledge into practical applications which would benefit public health remains unmet.

The review points to the reasons for this: “Too few contemporary clinical pharmacologists are actively engaged in the design, conduct and improvement of clinical trials.”

5. Other noticed contradictions

The review describes career paths of clinical pharmacologists in the industry and comments on the global crisis in pharmaceutical productivity and regulatory failures. However it does not elaborate sufficiently on the advisory function of clinical pharmacology in drug development - “the design of experiments” (as formulated by the 1970 WHO TR), and does not propose the role for clinical pharmacology in design of clinical trials addressing public health research needs and in setting up frameworks for non-industry or alternative funding schemes for clinical science development.

If clinical pharmacology had fulfilled at least this part of its scope of work appropriately the world would have ended up today with fewer blockbusters, “me-too”s, post marketing withdrawals, scandalous promotion cases, and public health risks and patient damage.
6. Timing

The Review states: “It is clear then the time has come to modernize the original WHO report in the hope that lessons will have been learned and the problems addressed……during the last few years, there have been signs both of new growth in and new enthusiasm for the discipline [7]….. A recent report on the relationship between the pharmaceutical industry and the National Health Service (NHS) in the United Kingdom has stated that re-building clinical pharmacology as a core discipline in the NHS is of vital importance for the future of health care in the UK and this is likely to be true in many other countries [8].”


I would suggest rephrasing of this statement as follows: “It is clear that the time has come to revitalize the original WHO report and to develop a strategy of putting the original concept into action to be in accord with the WHO Medicines strategy and the Essential Medicines Concept.” [not ‘modernize’]

The position of the discipline of clinical pharmacology in governments and its role in public health as outlined in the Review could become the practical way to developing this strategy.

In conclusion, the review is impressive in its volume and covers important issues of existing challenges of the specialty of clinical pharmacology, but not all.

It reflects the contradictory story of development of clinical pharmacology and thus becomes controversial in itself.

Claiming that clinical pharmacology should be recognized as a scientific discipline in its own right and seeking WHO support in strengthening the discipline’s global position it describes in detail the modern development which redirected the specialty away from the initial patient care – public health oriented mission (as had been outlined by the 1970 WHO Technical report) and does not fully analyze the factual reasons of this.

It would seem logical and most appropriate that at this particular moment of time to conclude that this is not the Report of a WHO study group (1970) that needs to be updated, it is the strategy of its implementation that needs to be developed and put into action.

On the basis of these observations I would like to propose to the WHO Secretariat:

b. Design and implement a survey on the contribution of clinical pharmacology to public health, governmental medicine regulation and national pharmaceutical policies with the emphasis on patient care through the rational use of medicine, with analysis of performance.
c. Develop measures at the governmental level, at the level of teaching and research institutions and at the level of patient care to enable implementation of the discipline mission outlined by the 1970 report. This could be developed as a separate document and endorsed by the Expert Committee.