



**6th meeting of the CIOMS Working Group WG XIV on
Artificial Intelligence in Pharmacovigilance
8 November 2023, virtual meeting**

Minutes

Summary

The CIOMS Working Group XIV on Artificial Intelligence in Pharmacovigilance held its 6th meeting virtually on 8 November 2023. The meeting, originally scheduled for 27 September, was postponed following the request from the WG members. Chapter Teams provided progress updates and discussed future plans. The next (virtual) meeting is scheduled for 11 January 2024.

Minutes of discussion

1. Opening and welcome

Lembit Rägo, CIOMS Secretary General, welcomed the members to the 6th meeting of the CIOMS Working Group XIV on Artificial Intelligence (AI) in Pharmacovigilance (PV) and opened the meeting as Chairman (for a list of participants see **Annex 1**).

Lembit made the following announcements:

- [CIOMS WG XV, Pharmacoepidemiology for public health](#) held its first meeting on 2-3 November 2023 and the minutes are available on CIOMS webpage.
- CIOMS report [Good governance practice for research institutions](#) is expected to be published in December, 2023.
- [WG XII Benefit-risk balance for medicinal products](#) and [WG XIII Real-world data and real-world evidence in regulatory decision making](#) are expected to be published in 2024.
- Several CIOMS WGs are continuing their work with information available at the [CIOMS website](#).

The meeting agenda was adopted.

All WG materials are available in the [WG private member area](#).

2. Progress updates on chapter drafts

Chapter 1-4 Introduction, landscape and scope, guiding principles

Walter updated the WG on Chapters 1-4 progress. He recognised Niklas's significant contributions and then passed the floor to Vijay for a detailed presentation of Chapter 1. The following only represents the discussion points.

- The chapter covers the utilisation of AI/ML in PV, data access requirements, societal expectations, benefits, risks, and the current state of PV.
- The chapter aims to differentiate between algorithmic methods with fixed outcomes and generative AI with open-ended inputs and outputs, identifying the latter as high-risk due to potential misinterpretation of safety data.
- Panos raised concerns about the terminology, suggesting renaming "benefit-risk" in order to avoid confusion with existing pharmacovigilance terms.
- Vijay agreed, indicating the need for clear terminology that accurately reflects the content.
- Lembit supported the suggestion to change wording to maintain clarity and avoid confusion.
- Niklas discussed creating a visual overview of the pharmacovigilance lifecycle to unify the terminology and understanding across chapters.
- Julie and Satoko suggested maintaining the term "risk" but finding an alternative for "disadvantage" that captures the gravity of the potential dangers of AI.
- Piero Francesco commented on refining the introduction after the overall document takes shape to ensure a coherent narrative that guides the reader through the report.
- Lembit echoed this, stating the final touches to the introduction and other chapters depend on the full document's progression.
- Walter proposed incorporating how the WG's work fits within the broader contributions of CIOMS to pharmacovigilance, potentially within the introduction or a separate preamble.
- Lembit mentioned the possibility of sharing drafts confidentially with other groups for feedback, considering the links to signal detection and updates to existing guidance documents.

Chapter 2

- Niklas continued to update the WG on Chapter 2.
- Hans-Jörg noted a surprising lack of identified AI applications in case intake, where many benefits are anticipated.
- Niklas clarified the current findings are preliminary, encouraging contributions from the group to enrich this area.
- Taxiarchis appreciated the inclusiveness of the analysis but highlighted the limitation of available literature and the necessity to avoid overly extensive documentation.
- The discussion agreed on presenting a representative sample of applications, citing published reviews, and addressing the need for brevity.
- To what extent should technical details to be included, considering rapid advancements in LLMs and related AI technologies?
- Satoko suggested including applications like chatbots in case intake, sharing insights from inspection encounters.
- Panos suggested the addition of medical information and product complaints handling as relevant subsets for case intake.

- Andrew advocated discussing LLMs as the evolution of AI, emphasizing the transition from narrow AI to broader capabilities. He suggested this approach could help future-proof the report.
- Adrian mentioned the use of generative AI for creating synthetic data sets for training AI models in scenarios with insufficient existing data. Niklas acknowledged this as a potential inclusion if verifiable examples exist, possibly under emerging solutions.
- Manuela added points on AI applications in safety communications, quality management, and the potential for AI to aid in creating and assessing SOPs.
- The WG agreed on presenting a balanced representation of applications, ensuring geographic and sector diversity.

Overview of regulatory frameworks

- Benny provided an update of the draft on regulatory frameworks. He had reviewed AI-related regulatory principles from Canada, the EU, and the US, noting considerable overlap.
- Emphasised by various regulatory agencies, Algorithmic Impact Assessments help determine the AI system's risk level from low to high. Benny noted the current lack of specific guidelines in this area.
- Benny will update the EU Commission's framework section to ensure all recent changes are captured.
- Guidance documents for medical devices are more advanced. Benny pointed out the parallels and potential for overlapping ideas between medical devices and pharmacovigilance, as observed in chapter four.
- Benny highlighted a new generative AI policy from Canada and a draft guidance document from the US FDA on change control plans, both related to medical devices but potentially applicable to pharmacovigilance.
- All are welcome to suggest additional guidance documents and policies to be included in the report.

Chapter 3

- Julie provided clarification on the scope of the report, which is to provide a framework for the appraisal, implementation, and maintenance of AI solutions in pharmacovigilance. The target audience is specified as stakeholders within the biomedical research spectrum, excluding lay audiences.
- The document will not cover the safety of AI itself, general aspects of ML unrelated to pharmacovigilance, or the use of ML and AI for real world evidence or data analysis outside of safety data identification.
- Lembit emphasised the need to cover the pharmacovigilance lifecycle holistically rather than focusing solely on adverse event reporting. The necessity to balance the report's scope with future potentials and experiences from the COVID pandemic was also noted.
- Andrew and others expressed concern about the scope being too broad, potentially making the document overwhelming and less practical.
- The need to ensure that the scope includes all relevant aspects of the PV lifecycle, not limiting to specific elements like ICSRs, was reiterated.
- Vijay mentioned utilising Nicholas's proposed diagram from chapter one to define the scope clearly.

Glossary and terminology

- There was a consensus on the inclusion of a glossary for ease of navigation and understanding within the document.
- The group discussed the placement of the glossary, with some favoring its early placement in the document due to the use of terminology throughout the report.

Chapter 4

Beth updated the WG on the progress of Chapter 4. The following only represents the discussion points.

- Satoko raised concerns about companies' obligations to disclose the use of AI, sharing an instance where a chatbot's use was discovered during an inspection, suggesting a general principle of transparency.
- Lembit supported the need for transparency, advocating for upfront declarations of AI use in pharmacovigilance systems.
- Benny mentioned a White House executive order on AI labeling and discussed how change control plans might be a method for companies to declare AI use.
- Satoko noted the current legislation lag behind actual AI implementations, with some AI applications already active without prior disclosures or change controls. As an interim solution, inspectors should directly inquire about AI use until formalised plans or guidance are in place.
- Beth distinguished between AI enhancements to existing systems versus brand-new AI functionalities like chatbots, suggesting clarity on when disclosures are essential.
- She continued on the topic of data privacy and the need for consumer consent for data use in AI model training.
- Andrew highlighted the importance of understanding AI applications in quality management systems and the transparency of AI tools.
- Vijay and Andrew emphasized the need for methodological transparency in AI applications, differing based on whether AI is used for outcome validation or process augmentation.
- The WG agreed on the criticality of transparency in AI integration, recognising the challenges of articulating it due to the extensive use of AI in various processes.

Chapters 5-7 Validation and qualification considerations, implementation and maintenance lifecycle aspects

Taxiarchis updated the WG on Chapters 5-7. The following only represents the followed discussion points.

- There is a need for extensive rewriting and harmonisation of chapters for consistency in length and depth.
- Satoko highlighted issues with AI disclosure during inspections and the importance of upfront transparency regarding AI use in PV systems. AI integration into PV systems should be transparently documented and communicated.
- It was decided to have a preliminary compiled draft of the report ready for group review, possibly by the next virtual meeting. Preliminary draft would enable seeing the document's totality to identify gaps and overlaps.
- Hans-Jörg welcomed Satoko to contribute to the chapter discussing validation consideration.

Chapter 8 Future vision progress was not updated at the meeting.**3. Next steps / next meeting**

- The next full WG meeting will be held virtually on 11 January 2024. This will be an occasion for chapter teams to update the WG on their progress and discuss any questions on draft chapters. CIOMS Secretariat will assist with organising the meeting.
- Next in-person meeting will be held in March in Geneva. CIOMS Secretariat will send a Doodle poll to agree on the dates.
- The WG will aim to consolidate the chapters and prepare for a combined draft to be reviewed in the next meeting.
- The CIOMS Secretariat will circulate the combined chapters draft prior the meeting in January.

4. Closing remarks

- Lembit thanked all members for their active participation and valuable input towards developing a comprehensive and forward-thinking report.

5. Annex 1: List of participants

Participants

Justyna Amelio (AbbVie), Luisa Barrios (MSD), Andrew Bate (GlaxoSmithKline), Adrian Berridge (Takeda), Taxiarchis Botsis (Johns Hopkins University School of Medicine, US), Brian Burch (MHRA), Hua Carroll (Biogen), Flávia Moreira Cruz (ANVISA, Brazil), Julie Durand (European Medicines Agency), Piero Francesco Franco (Pfizer), Satoko Hirokawa (Health and Youth Care Inspectorate, Netherlands), Kirsten Egebjerg Juul (Danish Medicines Agency), Vijay Kara* (GlaxoSmithKline), Kostadinos Kidos* (Takeda), Dieter Kempf (Genentech, Roche), Benny Ling (Health Canada), Beth MacEntee Pileggi (Johnson & Johnson), Manuela Messelhaeusser* (PEI), Niklas Norén (World Health Organization / Uppsala Monitoring Centre), Kateriina Rannula (CIOMS), Stephen Rosenfeld (North Star Review Board), Lembit Rägo (CIOMS), Hans-Jörg Römning (Merck Group), Irene Scholz (Swissmedic), Walter Straus (Moderna), Phil Tregunno (The Medicines and Healthcare Products Regulatory Agency, UK), Panos Tsintis (CIOMS Senior Adviser), and Brian Yau (WHO).

Apologies

Russ Altman (Stanford University, US), Robert Ball (US FDA), Arvind Bellur (CSL Behring), Yauheniya Cherkas (Johnson & Johnson), Shaun Comfort* (Genentech), Selin Cooper* (AbbVie), Jean-Michel Dogné (University of Namur), Julie Girod* (Sanofi), Kendal Harrison* (The Medicines and Healthcare Products Regulatory Agency, UK), Stephen Heaton* (CIOMS), Thomas Henn* (Unither), Yuki Kikuchi* (Pharmaceuticals and Medical Devices Agency, Japan), Denny Lorenz (Bayer), Roli Mathur (India Council Medical Research), Yusuke Matsunaga (Pharmaceuticals and Medical Devices Agency, Japan), Dirk Mentzer (Paul-Ehrlich Institute), Richard McAteer* (Health Canada), Ravi Patel (Unither), Nicolas Perez* (Swissmedic), John Reinhard Pietzsch* (Bayer), Monica da Luz Carvalho Soares* (ANVISA, Brazil), and Thomas Stammschulte* (Swissmedic).

*Alternate