

Closing the Knowledge Gap with a Knowledge Management Strategy Empowered by Dashboards and AI

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ABSTRACT

The unprecedented pace of technological advancements, together with constantly evolving standards and regulatory requirements, presents a critical people leadership and management challenge in the pharmaceutical industry. Traditionally knowledge has been accumulated and transferred via on-the-job training – knowledge gap. It is not uncommon to see knowledge centring in a handful of subject matter experts due to the lack of a robust knowledge management strategy that ensures the efficient collection, storage and dissemination of knowledge.

In this presentation, we will share our thoughts and illustrate our initiative to close the gap with the establishment of a knowledge base that employs interactive dashboard and AI to facilitate knowledge sharing. Our goal is to foster a collaborative environment where knowledge sharing is key and enable employees to build competencies across the organisation.

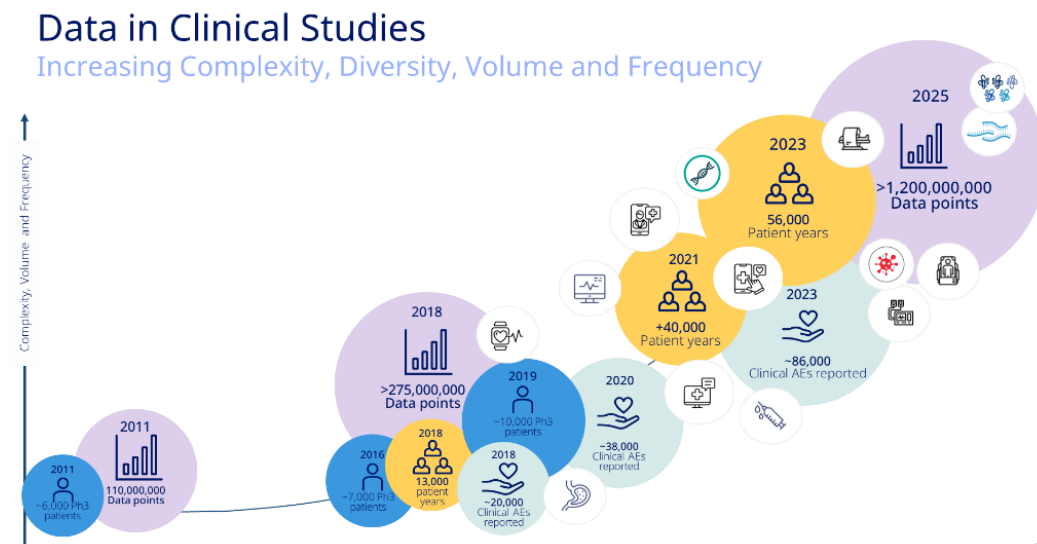
INTRODUCTION

Driven by the advancement in health care and information technologies, recent years have seen an unprecedented growth in complexity, diversity, volume, and frequency of data generated in clinical studies. This, together with the continuously evolving standard and regulatory landscapes, poses a dual challenge to the leadership within the pharmaceutical industry: ensuring that employees stay abreast of new technologies and practices while delivering to the growing competition and adhering to stringent regulatory requirements.

KNOWLEDGE GAP

As the industry strives for greater efficiency and effectiveness, the traditional methods of knowledge acquisition and transfer, primarily through on-the-job training, become insufficient. As a result, knowledge often becomes concentrated among a small group of subject matter experts (SME), leading to a widening knowledge gap across the organisation over time.

The challenges of the knowledge gap become even more evident with the growing trend in the pharmaceutical industry to hire individuals with a STEM (Science, Technology, Engineering and Mathematics) background. Their limited understanding of the process-heavy nature of the pharmaceutical industry places an additional burden on training efforts.



Additionally, organisational silos can further exacerbate the knowledge gap. Within many pharmaceutical companies, departments may operate independently, leading to a lack of collaboration and sharing of insights, research findings, and best practices. This disconnection can result in duplicated efforts, inefficiencies, and the stifling of innovation.

KNOWLEDGE MANAGEMENT STRATEGY

Recognising the challenges posed by the widening knowledge gap, the Submission Standards and Implementation (SSI) department in R&D at Novo Nordisk sets off to identify and implement a robust knowledge management strategy.

SSI is responsible for the global implementation of study data submission standards supporting the automation of study data creation for all clinical studies in Novo Nordisk. The complex data and process landscapes of clinical studies, along with constantly evolving submission standards and regulatory requirements as well as adoption of modern information technologies, impose significant burden of knowledge dissemination on the department. Considering the diverse range of stakeholders, it is apparent that SSI cannot bridge the knowledge gap through classroom training or e-learning alone.

Therefore, SSI decides on a strategy that combines personalisation and codification approaches, supported by dashboards and AI chatbot to enhance knowledge dissemination and improve learning experience of the stakeholders.



Personalisation
Super User Community
Online Training
Mentorship



Codification
Super User Help Desk
Knowledge Base
(Training Material and FAQ)



Innovation
Dashboards
AI Chatbot

DASHBOARDS ENABLING PERSONALISED INTERACTIVE LEARNING

A common drawback of codification is information overload. As a knowledge base grows over time, it often becomes increasingly difficult for its users to locate the requirement information. An intuitive and interactive interface that guides the users to the training materials they need, when they need them is therefore crucial to the success of a knowledge base.

To achieve this, SSI implements a dashboard, PapillonsWiki, on top of the knowledge base on SharePoint providing an engaging visual guidance to the various training materials through three dimensions: Topic, Process Stage and Job Function. Other than colour coding to indicate the difficulty level of each material, users can also read the abstract of the material to determine its relevance instead of spending time browsing through the materials to identify the needed information.

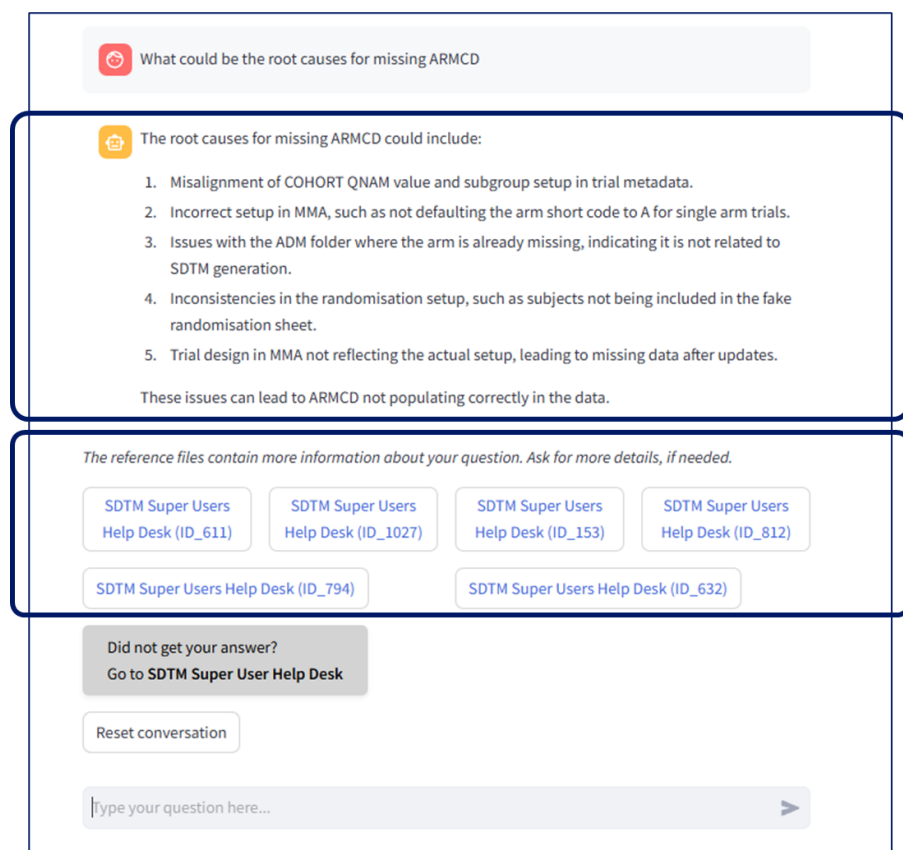
To further enhance the users' learning experience, related training materials are "interlinked" giving users a better understanding of the interdependency amongst topics and processes. The "interlinked" training materials are visualised in a network diagram allowing users to navigate through the materials interactively.

Via PapillonsWiki, users can easily and accurately locate the required information relevant to their everyday tasks.

To achieve the above, large amount of effort has been put into ensuring the reliability by minimising AI hallucination, which occurs when AI presents false or misleading information as fact, during the development of PapillonsChat¹. PapillonsChat is designed to be deterministic and will not provide an answer if it cannot locate related materials from the training library. In addition, PapillonsChat also provide the sources from which the answer is extracted providing users access to related information. This approach ensures traceability and further improves the reliability of the AI chatbot.

The deterministic behaviour of the PapillonsChat results in occasions which it provides no answer to a user's inquiry, but it also efficiently removes the risk of disseminating incorrect information. With the enrichment of the training library over time, the performance of PapillonsChat will become better.

Coupling with the personalised interactive learning provided by PapillonsWiki, the AI chatbot can efficiently help SSI in closing the knowledge gap.



What could be the root causes for missing ARMCD

The root causes for missing ARMCD could include:

1. Misalignment of COHORT QNAM value and subgroup setup in trial metadata.
2. Incorrect setup in MMA, such as not defaulting the arm short code to A for single arm trials.
3. Issues with the ADM folder where the arm is already missing, indicating it is not related to SDTM generation.
4. Inconsistencies in the randomisation setup, such as subjects not being included in the fake randomisation sheet.
5. Trial design in MMA not reflecting the actual setup, leading to missing data after updates.

These issues can lead to ARMCD not populating correctly in the data.

The reference files contain more information about your question. Ask for more details, if needed.

SDTM Super Users Help Desk (ID_611) SDTM Super Users Help Desk (ID_1027) SDTM Super Users Help Desk (ID_153) SDTM Super Users Help Desk (ID_812)

SDTM Super Users Help Desk (ID_794) SDTM Super Users Help Desk (ID_632)

Did not get your answer?
Go to SDTM Super User Help Desk

Reset conversation

Type your question here...

Domain specific

Reliable and traceable



CONCLUSION

The pharmaceutical industry faces significant challenges related to knowledge management, exacerbated by rapid technological advancements, increased complexity of clinical datasets, and stringent regulatory requirements. A shift from traditional knowledge transfer methods to a more structured and robust knowledge management strategy is essential.

By adopting effective practices for knowledge identification, storage, dissemination, and retention, pharmaceutical companies can bridge existing knowledge gaps and foster a continuous learning culture. This proactive approach reduces the organisation's reliance on a small group of subject matter experts, ensuring that critical information and expertise are accessible across the organisation. Furthermore, enhancing knowledge management can lead to improved operational efficiency, enabling the organisation to respond more swiftly to market changes, regulatory demands, and innovation opportunities.

REFERENCES

- ¹ [Hi, I am a chatbot, how can I help you? Enhancing reliability and traceability of Large Language Models](#), Anja Vrečer and Vicky Poulsen

CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author at:

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