The Critical Role of Implementation Investigators: Navigating Challenges in Complex Environments

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BACKGROUND & OBJECTIVE

- Implementing interventions in complex ecosystems frequently face unanticipated challenges and rarely adhere to preset plans.

- Cirrhosis Care Alberta (CCAB) trial, initiated in 2018, faced unforeseen challenges; COVID-19, delayed electronic record launch, staffing changes, and a new system level acute care bundle intervention (Figure 1).

- The study aims to investigate how study investigators successfully navigated the emergent challenges during the implementation of the CCAB trial.

METHODS

- An adapted Critical Decision Method (CDM) was used (Figure 2).

- Those who implemented (investigators) or helped implement (facilitators) the CCAB trial were interviewed both in-person and virtual (via zoom) using a semi-structured topic guide from June-December 2023.

- A deductive directed Qualitative Content Analysis (DQICA) analysis approach was used. The macrocognition framework was used to analyze the data (Figure 3).

RESULTS

- CCAB implementation investigators used complexity enriched macrocognitive skills to adapt the implementation strategy pragmatically in response to emerging challenges throughout the implementation process.

- Sensemaking and sense giving, planning and replanning and employing formal and informal methods for monitoring and detection allowed investigators to adapt implementation strategy as necessitated.

- The team was able to foster, maintain, and leverage the social capital needed to maintain situational awareness and support coordination, communication and decision making to navigate the emerging constraints and uncertainty dynamically over time.

- Flexibility, unusual willingness to revise and update mental models; and, a clear focus on, fidelity to, patient oriented objectives, and replanning characterized the team's management of the unexpected.

CONCLUSIONS

- Employing a complexity-informed, iterative, socially connected, and flexible approach to essential knowledge work functions, alongside a readiness to revise and alter mental models, proved essential for successful implementation in a highly dynamic context.

- Studying investigators' real-time sensemaking and adaptations can reshape implementation science, offering insights into how evidence-based interventions transition within complex systems amid changing contexts.
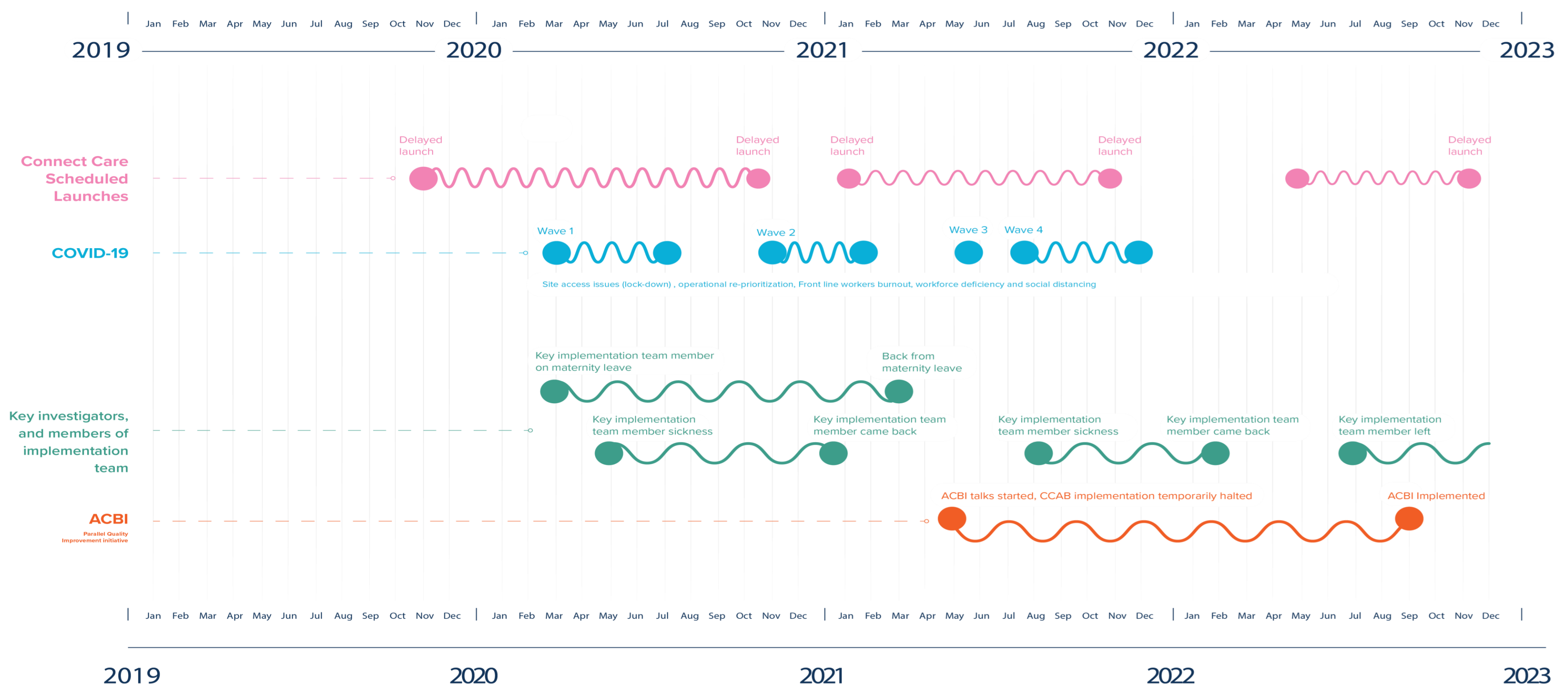
Critical Incident Timeline

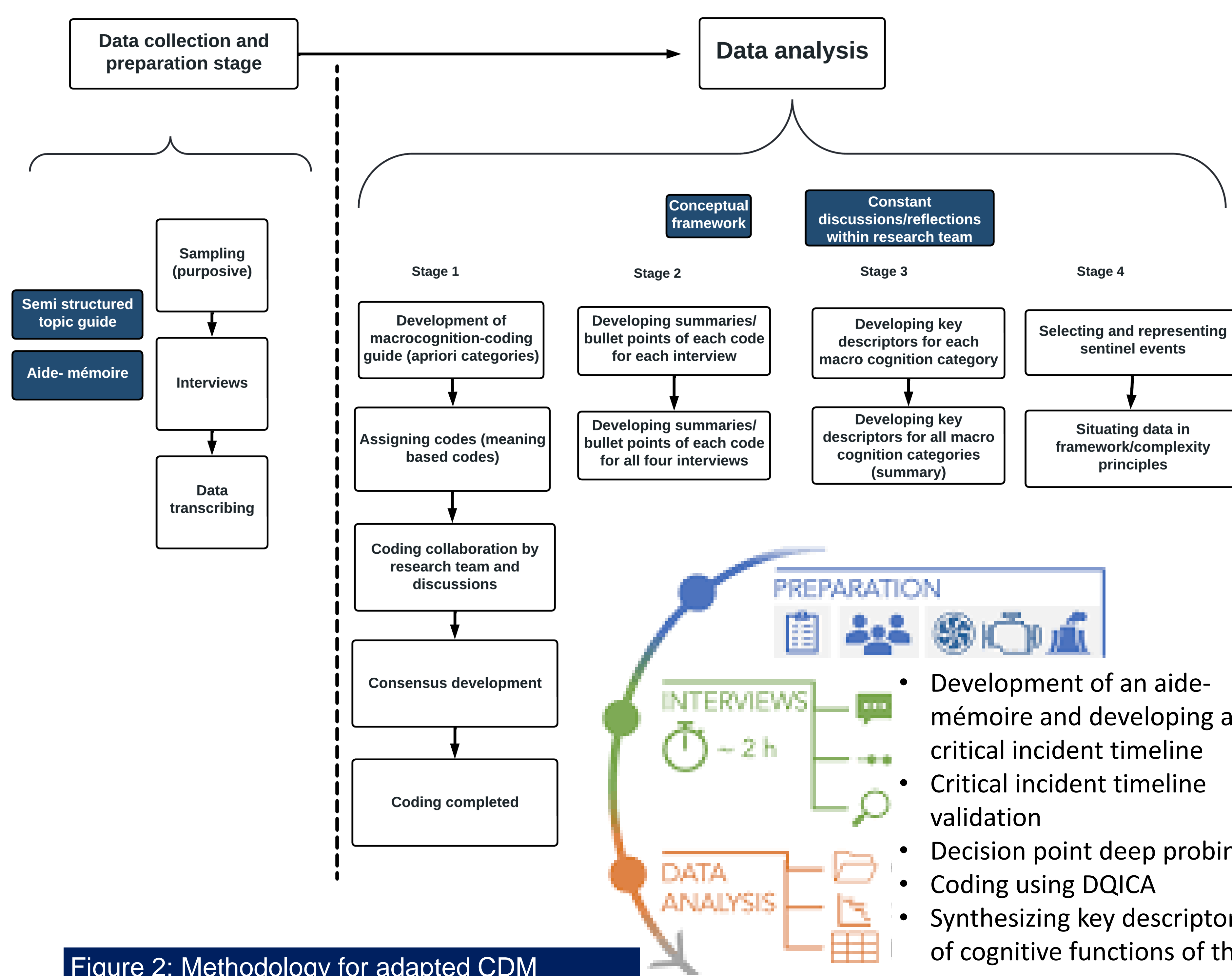Figure 1: Critical events during the CCAB implementation

Figure 2: Methodology for adapted CDM

- Development of an aide-mémoire and developing a critical incident timeline
- Critical incident timeline validation
- Decision point deep probing
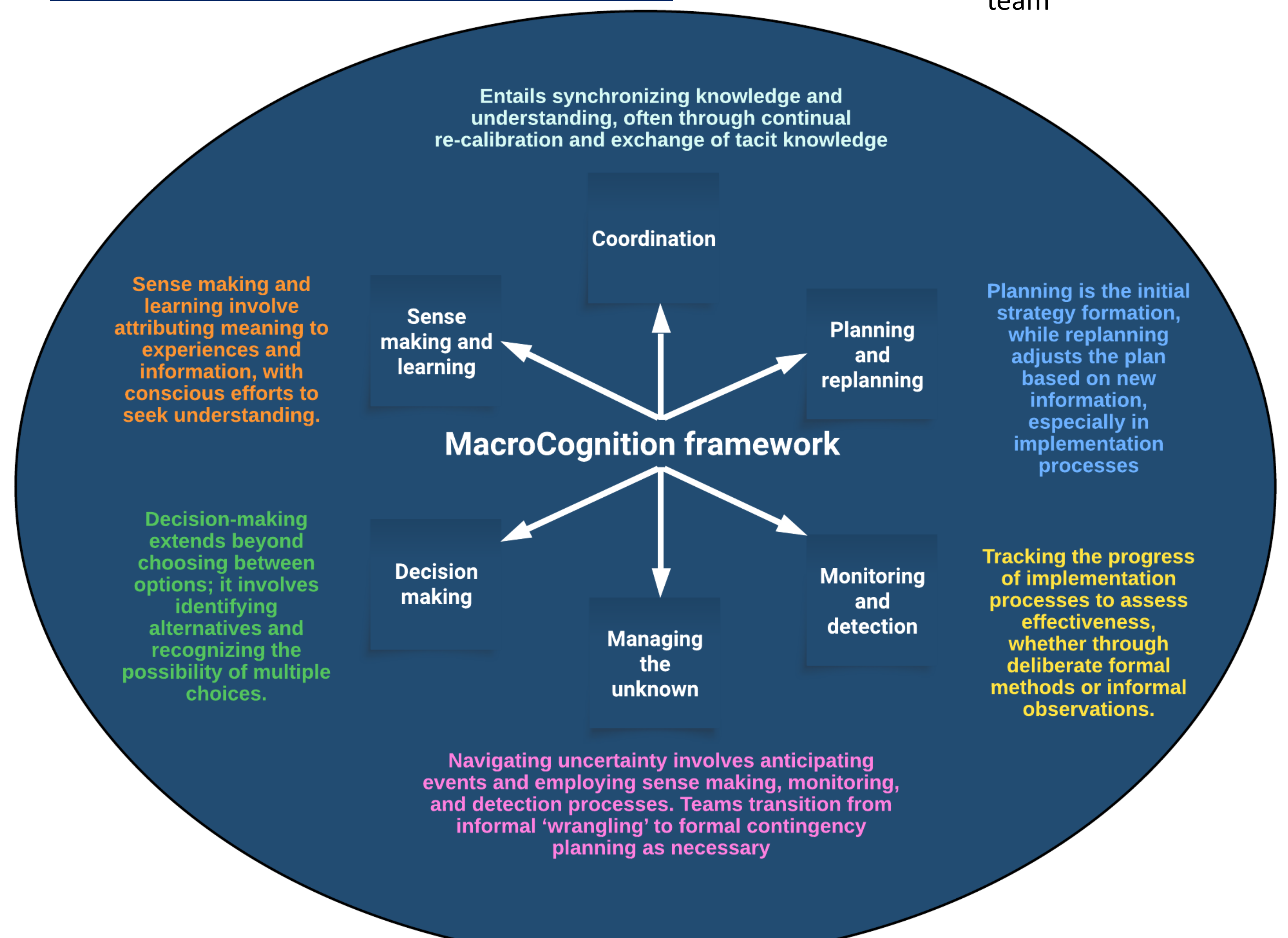- Coding using DQICA
- Synthesizing key descriptors of cognitive functions of the team

Figure 3: Macrocognition framework