**Q-1.** Could you address how this effort is funded, and how issues of IP, access, confidentiality will be addressed?

**A-1.** The MCBK community currently exists as a grassroots, multi-stakeholder community guided by a volunteer Steering Committee. As such, activities to-date have been modestly supported by discretionary funds from leadership members, but these cannot sustain the desired global movement for CBK infrastructure. The Steering Committee is exploring funding opportunities and the future potential to organize MCBK into an incorporated, independent organization. More information regarding funding will be provided as it becomes available.

Regarding IP, access and confidentiality, we value an open and transparent computable biomedical knowledge ecosystem in which CBK is easily findable, universally accessible, highly interoperable, and readily reusable (i.e. the FAIR principles). The MCBK *Policy and Coordination to Ensure Quality and Trust* workgroup is currently examining best practices and regulatory considerations in order to address these important factors within the CBK ecosystem.

**Q-2.** Open Source and its central repositories (i.e. GitHub) is an example of successful general computable knowledge sharing. Are there lessons we can learn from that community?

**A-2.** Yes, we can always learn from other groups, promote integration and interoperability, and utilize existing platforms to facilitate mobilizing CBK. Related to open-source repositories, we certainly have learned to prioritize low-barrier sharing platforms (i.e. minimal restrictions, required elements, and formatting designations), while promoting metadata that helps us understand CBK history and provenance.

**Q-3.** How does the concept of "executability" come into these plans? This MCBK has to make it to the point of care somehow.

**A-3.** Our vision for mobilizing CBK supports the creation, storage and execution, delivery or ‘activation’ of CBK into the point-of-care or point-of-need. Although creation and storage are necessary prerequisites, the delivery and execution of re-usable CBK is essential. Infrastructure that puts computable knowledge to use (or ‘activates’ it) realizes the full value of shifting toward CBK.

To meet this end, we intend to guide the development of metadata, standards, and infrastructure toward executable CBK. In the early stages, we will prepare to accept knowledge in any format (e.g. semi-structured or partially executable decision support rules) as we build an agile, evolving ecosystem.

**Q-4.** Is the scope of CBK inclusive of defining the data required to compute knowledge? For example, what are all the data points needed on a patient to make a recommendation about treating a specific disease? That is a big obstacle to decision support today.

**A-4.** Yes, the scope of our work—in particular the work of the *Standards for MCBK* workgroup—includes defining structured metadata for CBK artifacts, such as decision
support interventions or phenotype definitions that feed into decision support. These
definitions can and should include descriptions of inputs, expected outputs, and how
variations in data quality might impact the executed output. If you are interested in
these types of questions, please consider joining the Standards for Mobilizing
Computable Biomedical Knowledge workgroup.

Q-5. Your 2018 meeting was a great example of facilitating conversations. Do you have some ideas about what the structure of the next meeting will be? Will there be an opportunity to submit papers, posters, panel proposals, etc.?

A-5. The current plan is for the next MCBK meeting to be held July 18-19, 2019 at Natcher Conference Center (Building 45) at the National Institutes of Health in Bethesda, MD. Information about poster and presentation submission is forthcoming; posters were at capacity last year and we are looking forward to continuing to engage the community. The meeting will also include elements to support the continued activities of the MCBK workgroups. Feel free to send agenda, speaker and format suggestions to MCBK-Info@umich.edu.

Q-6. Are there any plans to integrate with OMG’s Healthcare Domain Task Force is working on Business Process Management integration, Care Management/Planning at a high level, and Decision Models? Active in this group are the DoD, VA, Mayo and others. Seems a vital part of your vision’s use cases, along with challenge of conflicting guidelines.

A-6. We are aware of OMG’s efforts and have plans to leverage and cooperate with their activities, which do appear to be consistent with our aims. Our Standards for Mobilizing Computable Biomedical Knowledge and Technical Infrastructure workgroups include representatives from the OMG’s Healthcare Domain Task Force. As a principle, the MCBK community wishes to leverage and not recreate relevant work. We look forward to exploring this option.

Q-7. To what extent do you see this as a US initiative or a global movement?

A-7. We want to be clear that this movement is not coterminous with the USA. We embrace efforts to implement CBK across the globe, where many individuals and groups are working to address these problems.

However, we can only grow as a global movement with increased international representation and involvement from stakeholders with expertise in biomedical knowledge systems outside of the US. We enthusiastically invite international colleagues to join us at our annual meetings and participate in working groups. If you are interested in building a coalition of MCBK members outside of the USA, please consider participating in the MCBK Sustainability for Mobilization and Inclusion workgroup.
**Q-8.** Has there been any dialog with "up to date" or USPSTF, etc.?

**A-8.** This is a fantastic question and could be an example of what we discussed previously: starting with semi-structured knowledge and slowly evolving into fully computable formats. We are already seeing this kind of work at the U.S. Federal level through AHRQ’s [CDS Connect](https://www.hhs.gov/ahrq/cdsconnect) project (featured as a technical demonstration at the July, 2018 meeting). The University of Michigan has a grant from AHRQ to explore how the USPSTF recommendations can be disseminated as computable knowledge.

**Q-9.** When you say "computable", I can’t help but think of ontologies. My question therefore is: Is the use/application of ontologies one of the considerations in the CBK work?

**A-9.** Absolutely. We encourage you to browse through the four technical demonstration presentations from our [July 2018 meeting](https://www.mobilizecbk.org/2018-meeting) to learn more about how public and private platform-building initiatives have approached knowledge representation. Consider joining the MCBK [Standards for Mobilizing Computable Biomedical Knowledge](https://www.mobilizecbk.org) workgroup to become more involved!

**Q-10.** Harmonize with GEM?

**A-10.** As a principle, the MCBK community will leverage and not recreate relevant work. The Guideline Elements Model (GEM) is considered foundational to represent the heterogeneous knowledge contained in practice guidelines, and this modeling approach is commonly used in the design and exchange of decision support applications. While MCBK use cases go beyond clinical decision support, we expect to leverage GEM or other modeling best practices. The [Standards for Mobilizing Computable Biomedical Knowledge](https://www.mobilizecbk.org) workgroup will have more detailed discussions about GEM and other standards that can be leveraged. This is, of course, an excellent opportunity for future collaboration as computable guidelines are a very important component of CBK.

**Q-11.** Is there a mailing list?

**A-11.** The MCBK community interim management team can be contacted via the following email address: [MCBK-Info@umich.edu](mailto:MCBK-Info@umich.edu).

If you have any further questions, information needs or suggestions, please also visit the MCBK website at [http://www.MobilizeCBK.org](http://www.MobilizeCBK.org).

As webinar attendees, you will continue to receive e-mail updates about MCBK unless you notify us that you wish to opt-out.