Curriculum Management & Curriculum Mapping

Best Practices

Curriculum Management & Curriculum Mapping Best Practices

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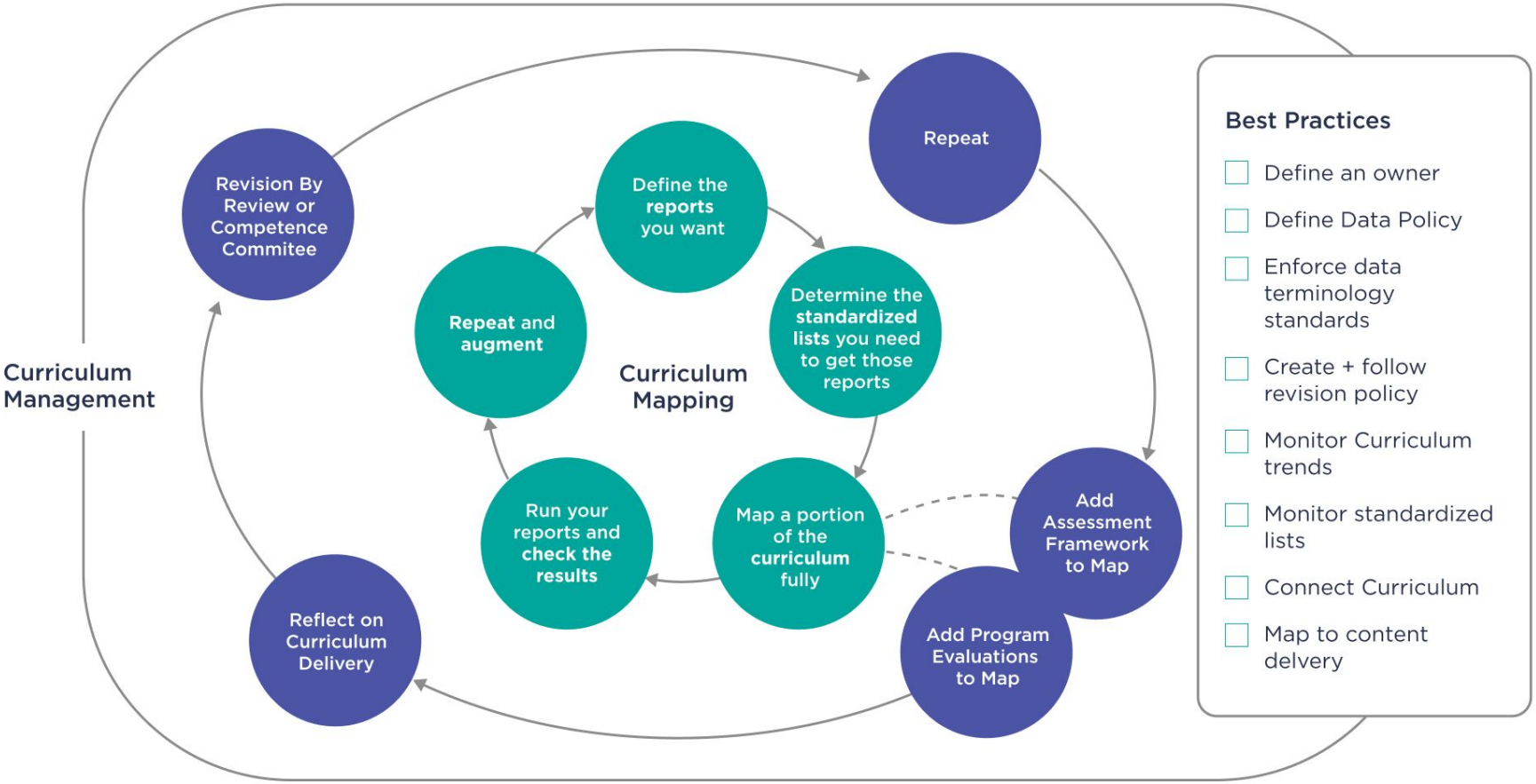
“The curriculum is a sophisticated blend of educational strategies, course content, learning outcomes, educational experiences, assessment, the educational environment and the individual students’ learning styles, personal timetable and programme of work.” - R. M. Harden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What is curriculum management?

Curriculum management is the prevention of curriculum drift, ensuring curriculum design adapts properly over time. This is done well through a structured set of activities designed to assess and adjust the curriculum.

1. Curriculum mapping
2. Content & structure analysis
3. Assessment
4. Program evaluation
5. Research, review & revision

Activities that make up curriculum management

1. **Curriculum mapping**: the first step of any curriculum management effort. The process of tagging and linking the timed phases of your curriculum (courses, phases, sessions) to learning outcomes and content areas.
2. **Content & structure analysis:** Using the created map, the process of analyzing and assessing the relevancy of content and if the curriculum structure is meeting your goals and requirements.
3. **Learner assessment:** Assessment results are the ultimate curriculum outcome and offer insight into curriculum bright spots or issues.
4. **Program evaluation:** The real-time feedback about the curriculum directly. With well designed curriculum-focused questions on your curriculum assessment forms this feedback can be leveraged.
5. **Research, review & revise:** This is the cycle that powers Continuous Quality Improvement (CQI). Discover issues, research and confer to improve.

Learn more about Curriculum Management

Challenges of Curriculum Mapping

Curriculum mapping is rarely at the top of anyone's priority list. This can make the issues of maintenance, data quality and review extremely difficult.

Issues:

- Inconsistencies
- Lack of understanding around the standards and requirements of the mapping process
- Education required for those involved, especially when there's updates to the mapping lists or institutional standards
- Overlap or gaps by different personnel involved with assessment and strategic planning can create data quality and monitoring concerns.
- Ineffective curriculum review

Addressing the challenges

Solutions

1. Have all stakeholders access & update the SAME data set.
2. Create the connection between the baseline of your curriculum map and the assessments of the content being delivered.
3. Link the map directly within the revision process
4. Leverage your curriculum map and the processes involved to enable true CQI
    a. You identify a gap in your curriculum review, you ask effective questions about the gap, and make a plan of adjustments to address it, you show in the assessment of the new content has this worked (or not), you adjust again - the essences of quality improvement.

Curriculum Mapping Goals:

1. Accurately map the curriculum
2. Discover inconsistencies to help inform improvements
3. Provide information for course review ongoing

BONUS:
Leveraging Curriculum mapping practices for Continuous Quality improvement CQI

5 Recommendations for Building your MedEd Curriculum Map

Accurately mapping your curriculum

Step 1

1. **Define the reporting specifics**

   Begin by creating the process that outlines the moving parts of your programs.

   a. Outline how your curriculum is defined into timed events. Consider the academic years, phases, courses, clerkship, cohorts, etc.

   b. Work backwards from how you will want to report on the curriculum overall. Consider where, when and how your institution's competencies, EPAs, objectives, content areas, curriculum themes and other key areas of focus are both taught and assessed.

Accurately mapping your curriculum

Step 2

2. Determine the standardized lists you need

Accreditation standards for curriculum review and CQI require a centralized map that displays outcomes, reveals gaps or redundancies and offers a means for in depth review. To power reporting and deliver on accreditation requirements for curriculum monitoring, the following standardized lists need to be mapped across all curriculum layers and events:

- Content topics: Keyword lists, National Board exam topics
- Competencies: School defined competency lists, Curriculum Themes, EPAs
- Teaching types & Instructional Methods: assessment methods, instructional methods, teaching resources
- Objectives

Accurately mapping your curriculum

Step 3

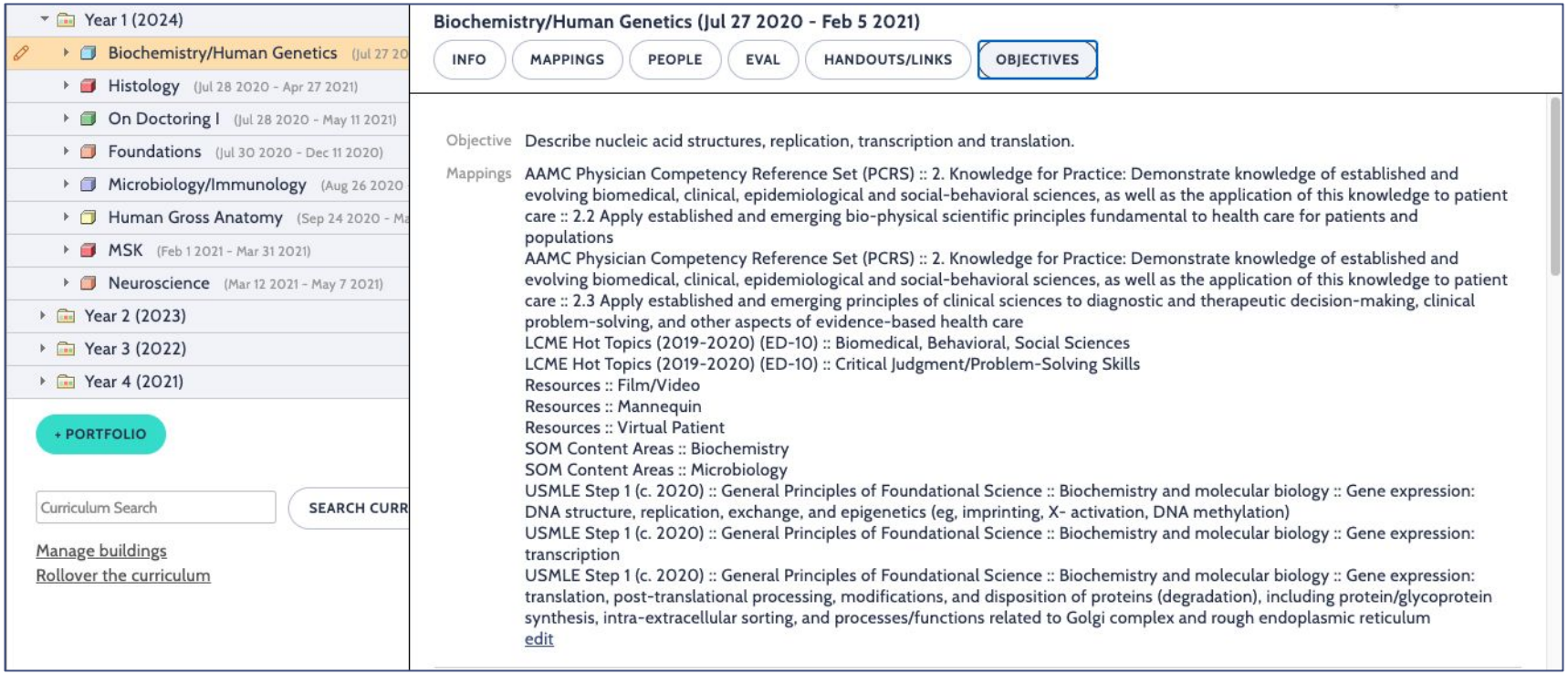
3. Map a portion of the curriculum

Start with one portion of the curriculum and map it fully to review the end reporting criteria. This will allow you to adjust and revise before moving on to the next portion of curriculum.

Define the curriculum hierarchy. Accurately outline the courses, lectures, labs and related learning events that take place.

a) Line the learning objectives to your desired mapping lists. Create mapping relationships between the learning events, their required objectives and the multiple mapping lists.

b) Apply teaching types and instructional methods elements to your learning events.



Curriculum hierarchy example (left) with Course level mapping example (right)

Accurately mapping your curriculum

Step 4

4. Review your reporting and verify results

Once you've designed and mapped a portion of your curriculum, review the outcome reporting and confirm that the information and output available matches your reporting needs.

Some report outputs to consider:

- Keyword based reports showing where topics appear across your curriculum.
- How competencies flow across the curriculum.
- Accreditation reports. Reporting on content topics will be essential so confirm you can easily show where each instance of content is covered.

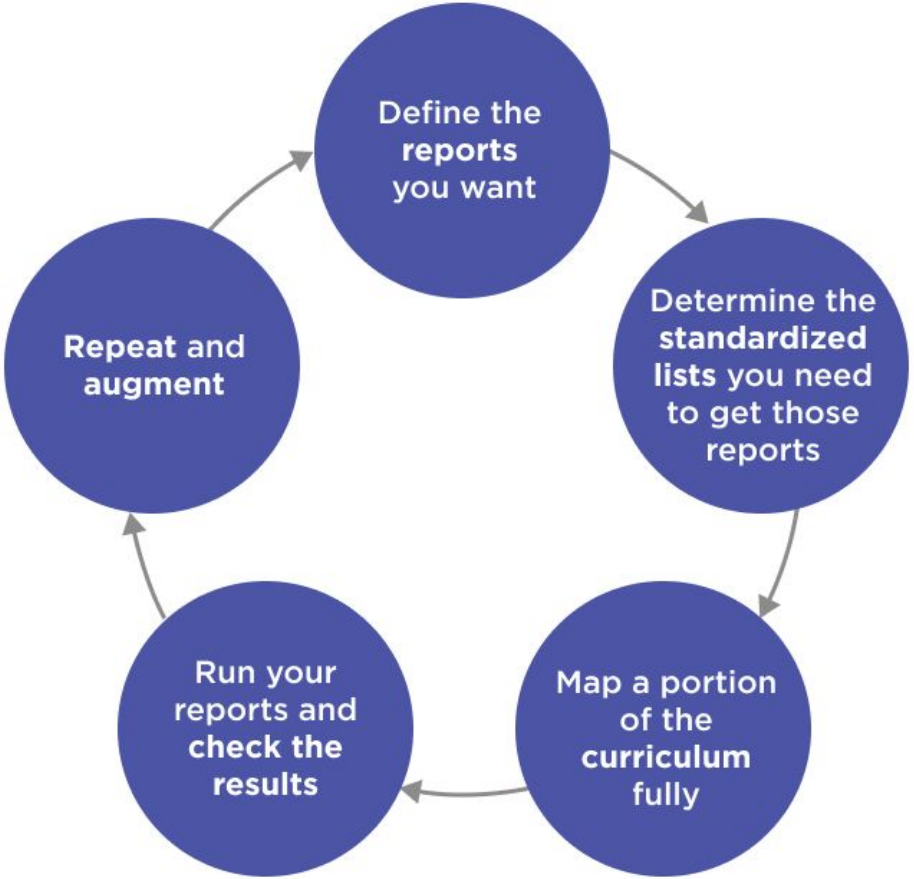
Accurately mapping your curriculum

Step 5

5. Repeat and augment

Once you've designed a successful map with satisfactory reporting results for a section of your curriculum, repeat the same steps for the remaining levels of the curriculum to complete your map.

Curriculum Mapping: The process cycle



Considerations for Ongoing Curriculum Mapping Success

Steps to Mapping Success

1. Define the logistics with the course and curriculum team
    a. What mapping lists are required for your institution?
2. Work through each course or clerkship to confirm there are course objectives defined
3. Once objectives for each course are finalized, map the the course objectives to the mapping lists (either each Course or Clerkship director individually or as a group)
4. Input your mapping data
5. Produce your report
6. Review, update and iterate

Defining the process

Consider the following as you build the process for mapping & review:

- Think about how to effectively create the map as a useful planning and reporting database to inform curriculum changes. This foresight can adjust your immediate approach.
- Check the administrative requirements to ensure compliance for accreditation reporting. Your future self will be grateful at the next site visit.
- Don't forget all of your stakeholders, inquiring about needs for all involved as your begin the mapping process ensures a more complete picture.
- Consider making the curriculum map useful for students and faculty alike to find and reference content and learning objectives

  (e.g. Exam objectives: survey students to determine which reports from the curriculum would be valuable study aids for exams. Or, where in the curriculum they find the content frustrating. Questions like these can help uncover valuable insights on areas for improvement. Consider adding a question in the Course or Clerkship evaluation to achieve this.)

Review, update and iterate

- Apply mapping lists to all areas where curriculum elements are taught and monitored.
- Use reporting cycles and processes to review for gaps.
- Review feedback on learner performance and from learners on the quality of the learning experiences, including where and how students receive feedback. Question the alignment of the intended curriculum - are adjustments required?
- Look for opportunities to include alternate experiences, adjust rotation capacities, improve curriculum content, add or remove academic sessions.
- Assess the contact hours for curriculum against assessment results. Are there redundancies or shortcomings in contact time that could impact overall performance?

“Curriculum mapping is about representing spatially the different components of the curriculum so that the whole picture and the relationships and connections between the parts of the map are easily seen.”

- R. M. Harden

Best Practices for Curriculum Management

Establishing a structured set of activities designed to assess and adjust the curriculum.

Define the Curriculum Management Owner

1. Ensure a single staff member is responsible for approving and maintaining the overarching standardized lists across the curriculum, evaluation and assessment systems used.

WHY? Eliminate the risks of impact on poor data quality or policy adherence with oversight by someone with the knowledge and impact.

Define Curriculum Data Policies

2. Create policies for how your curriculum is tagged, linked and where the data will be used. These relationships are important and defining the use cases will empower your reporting and CQI ease of review.

WHY? The key characteristics of quality curriculum data are consistency, accuracy and completeness.

Enforce standardized data terminology

3. Enforce a school-wide data dictionary and standardized lists database.

Ensure the key vocabulary lists (e.g. Competency Framework, EPA Frameworks, Assessment Methods list, Instructional Methods lists, Keywords lists, USMLE Step 1 & Step 2 Frameworks, curriculum themes/threads) are all standardized and up to date.

WHY? Ensuring high quality data management ensures you can consistently make sense of the data that is being collected. Keeping this organized, trustworthy and useful over time.

Define a revision policy

4. Ensure systems are all updated when a change to a standardized list is made

WHY? Just like ensuring the same set of standardized lists are used across systems, creating the process to follow through and update across those same systems when updates to the lists are made keeps the high quality data standards consistent and reporting reliable.

Stay up to date with trends

5. Monitor industry trends to ensure that items required for accreditation and contribution on a national level are being monitored

WHY? Staying current with industry trends and updates and making smaller tweaks and adjustments to the curriculum map in the current academic year is a much more straightforward undertaking than having to retroactively survey and adjust larger historical data sets.

Maintain standardized lists

6. Standardize key vocabulary lists

Beyond the data terminology standardization in point 4, ensure overall key vocabulary lists selected for application to the curriculum are the same list applied across all areas. For example: School Competency Framework, EPA Frameworks, Assessment Methods list, Instructional Methods, Resources, Keywords, USMLE Step1 and Step2 Frameworks, Curriculum themes & threads

WHY? Ensuring those who are making adjustments to your Curriculum mapping are using the same approved standardized lists across all layers of the curriculum hierarchy improves data quality, and reporting success to more easily identify gaps, redundancies and delivery on requirements.

Connect curriculum mapping & delivery

7. Connect your standardized lists to the curriculum delivery and assessment frameworks in the following key areas:

- Curriculum map & learning objectives
- Assessment of learners at all levels (EPA & competency frameworks, delivery of outcomes including self evaluations, peer evaluations, faculty evaluations, Grades or Marks, Professionalism assessments, Exam scores, OSCE scores, Rubrics.)
- Evaluation of Program (verify that core competencies and curriculum themes that are being evaluated by learners are mapped to the learning events being evaluated).

WHY? Reflecting on your curriculum map through the how curriculum is delivered and the assessments of your curriculum at all levels is a powerful tool for CQI and revision.

Bring review & mapping together

8. Embed the curriculum map directly into your revision process

Establish a competency or review committee to regularly review and identify irregularities through gaps and redundancies in the map and the reporting on performance outcomes.

WHY? Through regular committee review smaller curriculum adjustments and reform can be made within an academic year, documented well for accreditation reporting on improvements and results of the smaller adjustments confirmed before they become larger scale problems or accreditation red flags.

Review, revise & improve.

9. Iterate

Leverage your well defined process, engagement and standardized data sets to enact improvements to your curriculum. Apply your mapping lists across the full depth of your curriculum wherever the relevant mapping specific elements are taught and monitored.

WHY? To truly achieve the benefits and goals of CQI leverage the cycle of reviewing, revising and showing the evidence of improvements in your performance outcomes and curriculum reforms.

Experiment to Improve

Experiment your way to improvements

Collect data from how the reports are used to drive improvements in your curriculum.

- Most stakeholders will search the curriculum far more frequently than they navigate through the map. Gather the data on the types and frequency of searches.
- Ask users completing searches what is missing for them.
- Use this feedback at Curriculum Committee meetings to help inform improvements to the mapping

E.g. If the data suggests that linking competency information to session objectives would be helpful: start with one course. See if the update changes the search patterns or user satisfaction for that course. If so - excellent - compelling evidence to adjust the map further. If not - you haven't wasted valuable time on a change that doesn't improve the search.

Experiment your way to improvements

Focus first on testing changes that will produce value for those that access the curriculum map on a small scale.

- Adjust mapping changes for 1 course instead of 10
- Have a few students generate reports as you observe
- Create a test version of the map where small updates can be made and reviewed without worry of editing mistakes

THE GOAL Generate some excitement about the results. For each improvement made, ask - how can we test this to ensure it will add value?

Conclusion

Stay vigilant and build in processes to keep your curriculum current and adapt to changes.

Following the best practices outlined in this guide for curriculum management and curriculum mapping, you will be well prepared to catch and prevent curriculum drift. You will also have a powerful curriculum map and review process to serve your institution well for curriculum reform and your next accreditation visit.

Additional resources:

https://cbmepg.mcmaster.ca/resources-2/topics/curriculum-mapping/

https://teaching.helsinki.fi/sites/default/files/inline-files/Curriculum%20mapping%20Harden%20AMEE%20Guide.pdf

https://examsoft.com/resources/curriculum-mapping-teaching