

Building a Version-Controlled Clinical Knowledge Platform

Executive brief on the design, initial implementation, and strategic roadmap for an evidence-based maternal-fetal medicine reference library built with GitHub Gists.

Prepared by

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Executive Summary

STRATEGIC PURPOSE

OpenMFM is establishing a concise, evidence-based clinical reference library that converts frequently used ACOG and SMFM guidance into fast, searchable, version-controlled resources for clinicians, trainees, educators, developers, and future decision-support systems.

The initiative uses GitHub Gists as a lightweight publishing and version-control layer. Markdown supports clinician-facing guidance; JSON supports structured clinical data; Python demonstrates implementation logic; and SVG supports visual algorithms. Together, these formats create a maintainable bridge between clinical education and software development.

Initial deliverables include:

- Hypertensive Disorders of Pregnancy reference
- SMFM/ACOG Delivery Timing Master Table
- Multi-file Fetal Growth Restriction resource with structured delivery-timing data

EXECUTIVE TAKEAWAY

The work completed on July 28, 2026 establishes a scalable knowledge architecture. The immediate priority is to finish the FGR package, then expand high-impact references, cross-link the library, and embed canonical content into OpenMFM.org and DoctorsWhoCode.blog.

Contents

1. Vision and Strategic Rationale
2. Platform Architecture
3. Completed Clinical References
4. Structured Clinical Data
5. Design and Governance Principles
6. Integration Opportunities
7. Implementation Roadmap
8. Long-Term Vision and Closing Reflection

The best clinical reference is the one that answers the question in under 30 seconds.

Vision

Today marked the beginning of what will likely become one of the cornerstone resources for **OpenMFM.org**: a version-controlled clinical reference library built entirely on **GitHub Gists**.

Rather than creating lengthy review articles or traditional blog posts, the objective is to develop concise, evidence-based references that answer the questions maternal-fetal medicine specialists encounter every day. These references are intended to be fast, searchable, printable, easily maintained, and suitable for both human clinicians and future AI-powered decision-support tools.

GitHub Gists provide several advantages that make them particularly well suited for this purpose:

- Built-in Git version control
- Permanent URLs
- Markdown rendering
- Public sharing and collaboration
- Ability to include multiple related files
- Easy embedding into websites
- Ideal platform for structured clinical knowledge

The goal is not to replace society guidelines but to organize them into practical bedside references.

Why GitHub Gists?

Initially, I explored using HTML pages within GitHub Gists. Although technically possible, GitHub intentionally displays HTML as source code rather than rendering it as a web page.

Markdown proved to be a far better solution.

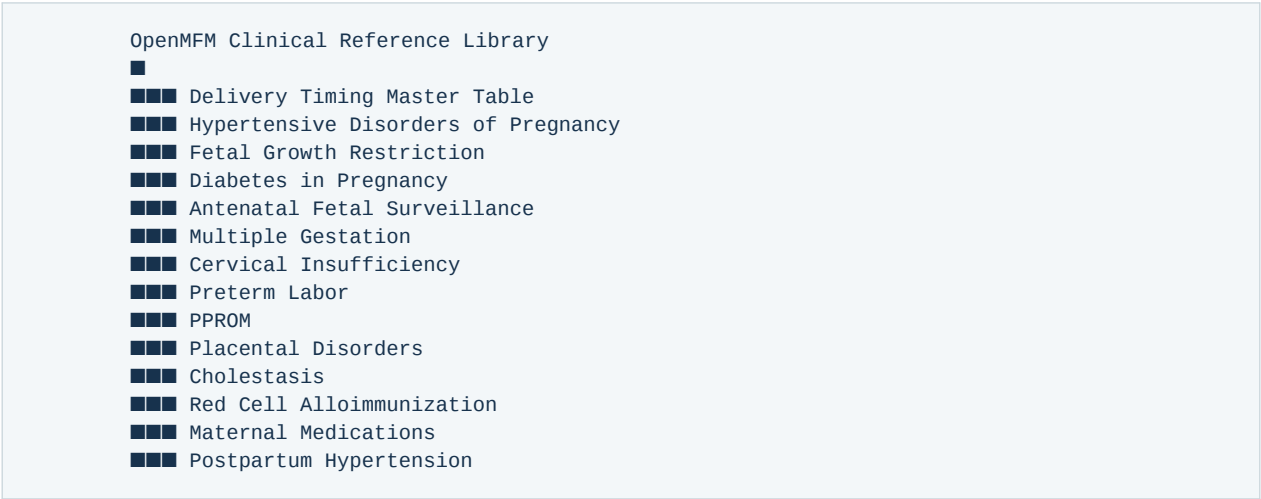
Markdown Gists offer:

- Excellent readability
- Clean formatting
- Automatic tables
- Callout blocks
- Version history
- Mobile-friendly viewing
- Easy editing

This makes Markdown the ideal format for clinician-facing references.

Project Architecture

Rather than creating isolated documents, the library is organized around a central index.



Every reference follows the same organizational structure and documentation standards.

Standard Clinical Reference Template

Each Gist contains consistent sections, allowing users to navigate quickly regardless of topic.

Typical sections include:

- 1 Clinical scope
- 2 Diagnostic criteria
- 3 Classification
- 4 Initial evaluation
- 5 Management
- 6 Surveillance
- 7 Delivery timing
- 8 Escalation criteria
- 9 Clinical pearls
- 10 Developer notes
- 11 References
- 12 Revision history

Maintaining a uniform structure will make future AI parsing, website integration, and educational use significantly easier.

Clinical References Completed

1. Hypertensive Disorders of Pregnancy

The first completed reference summarizes:

- Diagnostic criteria
- Severe features
- Delivery timing
- Clinical considerations

This serves as the prototype for future disease-specific references.

2. SMFM/ACOG Delivery Timing Master Table

This reference became the flagship project.

Rather than focusing on a single disease, it summarizes delivery timing recommendations across the breadth of maternal-fetal medicine.

Categories include:

- Hypertensive disorders
- Diabetes
- Fetal growth restriction
- Multiple gestation
- Placental disorders
- Cholestasis
- PPROM
- Prior uterine surgery
- Advanced maternal age
- Maternal medical disorders

The document emphasizes that maternal or fetal deterioration always supersedes routine gestational-age recommendations.

3. Fetal Growth Restriction

Recognizing FGR as one of the most frequently referenced and highest-impact topics in MFM, a dedicated multi-file Gist was designed.

Unlike the previous references, this project combines clinical documentation with machine-readable resources.

Files include:

```
README.md
fgr_algorithm.md
delivery_timing.json
fgr_decision_tree.py
fgr.svg
```

This design supports clinicians while simultaneously providing structured resources for future software development.

Structured Clinical Data

One of the most significant developments today was moving beyond narrative documentation into structured clinical data.

The `delivery_timing.json` file captures:

- SMFM diagnostic criteria
- Umbilical artery Doppler categories
- Delivery timing recommendations
- Earlier delivery triggers
- Antenatal corticosteroid recommendations
- Magnesium sulfate indications
- Surveillance intervals
- Decision logic
- Software safety considerations
- Source references

This represents the first machine-readable clinical knowledge object within the OpenMFM ecosystem.

Such structured resources could ultimately power:

- Clinical calculators
- AI assistants
- Interactive algorithms
- Educational simulations
- OpenMFM web applications

Design Philosophy

Several principles emerged during development.

Keep references concise

A clinician should be able to answer a common clinical question in less than one minute.

Link rather than duplicate

Disease-specific references should link to one another whenever possible rather than repeating large amounts of information.

Separate narrative from data

Markdown is ideal for human readers.

JSON is ideal for software.

Python demonstrates implementation logic.

SVG provides visual algorithms.

Each file serves a different audience while remaining synchronized through Git.

Build for maintainability

Every document includes:

- Version number
- Review date
- Status
- Primary references
- Revision history

Future guideline updates can therefore be tracked systematically.

Potential Future Integrations

The GitHub Gists can become the canonical source for several OpenMFM projects.

Examples include:

- OpenMFM.org
- DoctorsWhoCode.blog
- Educational slide decks
- AI-powered chat assistants
- Clinical decision-support prototypes
- Resident and fellow teaching materials
- Medical student education
- Intern research projects

Maintaining a single authoritative reference reduces duplication and simplifies updates.

Long-Term Vision

The long-term objective is to build a comprehensive, open, evidence-based maternal-fetal medicine knowledge base.

Potential future references include:

- Gestational diabetes
- Pregestational diabetes
- Cervical insufficiency
- Cerclage
- Antenatal fetal surveillance
- Multiple gestation
- PPROM
- Placenta accreta spectrum
- Placenta previa
- Vasa previa
- Cholestasis
- Rh alloimmunization
- Fetal anemia
- Maternal cardiac disease
- Postpartum hypertension

Each topic should follow the same editorial framework established today.

Lessons Learned

Several practical lessons emerged from the initial implementation.

- Markdown is significantly better suited than HTML for GitHub Gists.
- GitHub Gists function best as concise clinical references rather than complete websites.
- Multiple-file Gists allow narrative documentation, structured data, algorithms, and code to coexist in a single repository.
- Structured JSON resources greatly expand future possibilities for OpenMFM software development.
- Consistent formatting and version control will simplify long-term maintenance as society guidelines evolve.

Immediate Next Actions

Priority 1

Complete the Fetal Growth Restriction Gist.

Remaining files:

- fgr_decision_tree.py
- fgr.svg

Priority 2

Develop the remaining high-impact references:

- 1 Antenatal Fetal Surveillance
- 2 Diabetes in Pregnancy
- 3 Multiple Gestation
- 4 Cerclage
- 5 PPROM

Priority 3

Cross-link all clinical references from the OpenMFM Clinical Reference Library index.

Priority 4

Embed selected Gists into OpenMFM.org and DoctorsWhoCode.blog as canonical clinical references.

Priority 5

Use the structured JSON files as the foundation for future OpenMFM calculators and decision-support tools.

Future Opportunities

As the library grows, it can evolve beyond static references into an integrated knowledge platform.

Potential enhancements include:

- Interactive decision trees
- Visual management algorithms
- Evidence grading
- Automatic guideline update tracking
- API endpoints serving JSON data
- AI-assisted clinical search
- Resident quiz generation
- Integration with OpenMFM calculators
- Educational dashboards

● Mobile-friendly reference applications

The work completed today establishes the architectural foundation for this broader vision.

Closing Reflection

Today's work was more than creating a collection of GitHub Gists.

It established a scalable knowledge architecture for OpenMFM.

By combining concise Markdown references, structured JSON datasets, reproducible algorithms, and version-controlled documentation, the project bridges traditional clinical education with modern software development.

The result is a living clinical reference library that can support physicians, trainees, educators, developers, and future AI systems while remaining grounded in current ACOG and SMFM guidance.

Status: Active Development

Version: 0.1

Last Updated: July 28, 2026

Maintainer: Dr. Chukwuma Onyeije

Project: OpenMFM Clinical Reference Library

Website: <https://OpenMFM.org>

Companion Blog: <https://DoctorsWhoCode.blog>