

Progress Report: Cardiovascular health measurement scales at our finger-tips: Improving the efficiency of clinical decision-making through a futuristic Wiki

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1 Project Objectives

Based on the original Confluence Wiki system, use *WordPress* to rebuild this Wiki as a conveniently accessible and adaptable cardiovascular measurement scale for medical students and clinical researchers, with the aim of providing the latest recommendations on appropriate choices from possibly countless health measurement scales to predict cardiovascular events.

1. All content from the existing Wiki should be transferred into *WordPress* without reducing the browsing quality, and the content in the new Wiki should be easy to browse.
2. Website construction should be sustainable. Wiki should be more accessible and for external and future users, including medical students and physicists. Users can edit and update content to contribute to the content construction of the website.
3. Extend Wiki's content based on structured literature reviews, with the support of existing structured literature retrieval strategies, all relevant updates should be applied so that future users can keep up to date with the latest findings and appropriate statistics.

2 Methodology

1. Literature review: Collect papers on Cardiovascular health measurement scales in the *Ovid* medical database. Use *Medline* and *Embase* database as the source of literature for data extraction. And then select them according to the *PRISMA Flowchart* which is shown in Figure 1 below. After obtaining the potential literature, extract data from them to find relevant statistics that can expand and update the cardiovascular disease measurement scale. At this stage, the expanded content of the website focuses on the literature data on primary prevention and control in 2015-2020.

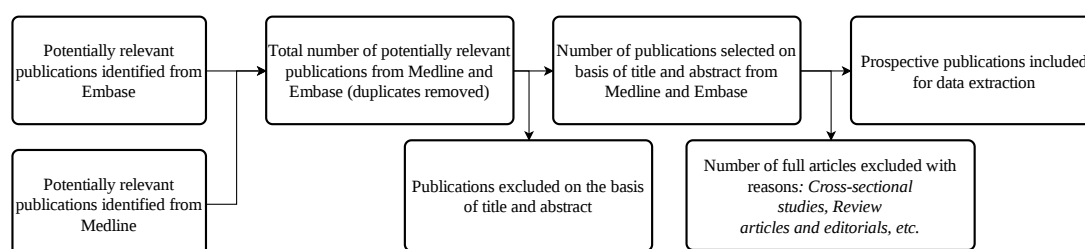


Figure 1: PRISMA Flowchart

2. Design-demonstration website design: Use *WordPress* to reconstruct the website, evaluate the structure of the original website, and formulate a consistent website structure and layout design. Use *WordPress*'s plugins to meet functional requirements.

3. Analysis and user evaluation: Evaluate the prototype website and collect user evaluation data. The evaluation form is questionnaire evaluation, from which quantitative analysis and qualitative analysis can be obtained. Then adjust the prototype website based on user feedback.

3 Progress

3.1 User interface and website content

1. The content of the original *Confluence wiki* has been transferred to the newly developed website. The content of literature expansion has not been updated, and it needs to be continued after the subsequent literature selection and data extraction.
2. Website framework and user interface have been completed. It includes structure and colour of the main pages, navigation, block position, global page design, core content area, column design, etc. They are mostly completed, but still need to be test and adjusted according to the feedback obtained by subsequent user evaluation phase.

3.2 Literature review

Expanding the content of the Wiki based on a structured literature review has not yet been completed, only the preliminary selection of literature from 2020 to 2018 has been completed. The remaining literature for 2015-2017 need to be completed. And extract the data according to the needs in the perspective literature and integrate it into the website.

3.3 Functional design

In general, the functional requirements of the website have been roughly completed. The following are the implemented functionalities (many of which are added to improve user engagement or increase user activity), and subsequent adjustments are required.

1. User registration and login: Allow external users to register and log in, and support the use of social account login (*Twitter, Facebook, Google*), but still need to be provided API authorisation ID.
2. User Centre: Registered users can edit their personal information (password, email, subscription information, etc.), they can log in to their dashboard to set up their account. And users can view the list of registered users for further discussion and communication.
3. Forum system: (Authorised) users can create new forums, add new topics, and participate in discussions in the forums.
4. User social system: users can publish activities (website construction activities or even a greeting message). The discussions and articles published by users in the forum can also be updated on the activity page. User can also create groups and joining groups, send real-time messages, follow users, etc.
5. Media subscription and mailing: Registered users can be added to the subscription lists, in addition to welcome mail, users can subscribe weekly/monthly updates. The system supports authorised users to post any email newsletter media content in the back-end.

6. Achievement points system: The purpose of the system is to incentivize users to participate in website contributions. Users who post articles or start responding to events will receive corresponding reward points, which can be used to pay for restricted content or get the corresponding level badge. Users can post restricted articles, and other users need to use points to purchase content to lift the restrictions.

4 Work Deviation

When developing the functional requirements of the website, I found that it was difficult to build a similar development environment using a local server because the database files were not available. Therefore, I use the development environment of the website for development. This caused the website to crash. I applied for *SFTP* connection for direct editing of files in the website directory. Now that I got an *SFTP* connection, I stopped develop locally but switched to online website development and changed the backup method to ensure the security of the website.

During this period I put my work on the literature review. In general, after the website development is basically over, the focus of work begins to shift to the documentation work. I found that the literature review was a heavy workload, and it exceeded my previous plan. So I will adjust my follow-up plan as shown in Section 5.

5 Follow-up plan

According to the current progress, we are ahead of the original *IPP* plan. But the actual situation is not optimistic. In *IPP*, I plan to complete the literature expansion in about two weeks. But I underestimated the workload of literature review and literature content expansion, which requires another two weeks to complete the literature expansion. In the original plan, the time for collecting user feedback and the follow-up tasks for website adjustment were also very hasty. In order to allow enough time for the dissertation the follow-up plan.

After the website development reaches a finished state, I will continue to complete the rest of the literature selection. Then a user evaluation will be conducted and the website will be modified based on the feedback. Afterwards, the dissertation will be written. During this period, the literature data will also be extracted and uploaded to the website to complete the update of the website content. The rough Gantt chart is shown below.

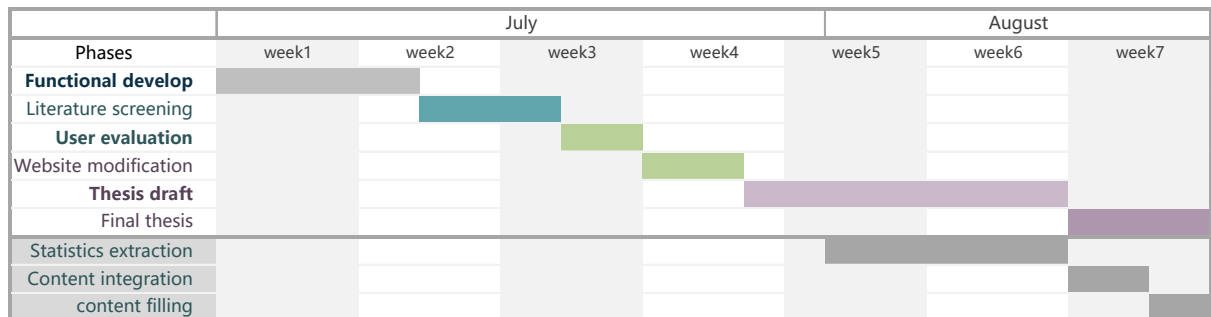


Figure 2: Gantt chart for follow-up plan