

# HMRF Research Fellowship Scheme – Experience Sharing

---

Dr. Eric WAN  
Assistant Professor  
Department of Family Medicine and Primary Care &  
Department of Pharmacology and Pharmacy  
The University of Hong Kong

# Outline

- Introduction of my Research Fellowship project
- Proposal writing and interview
- Challenges during the implementation phase
- Take-home messages

# “When should statin therapy be initiated for patients with diabetes mellitus”

Mentor: Professor Cindy Lam (HKU Family Medicine)

Overseas supervisor: Professor Goodarz Danaei (Harvard Cardiovascular Health)

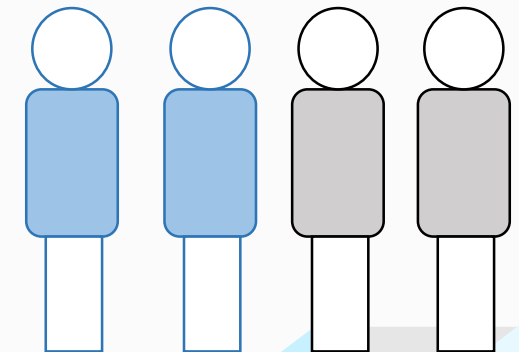
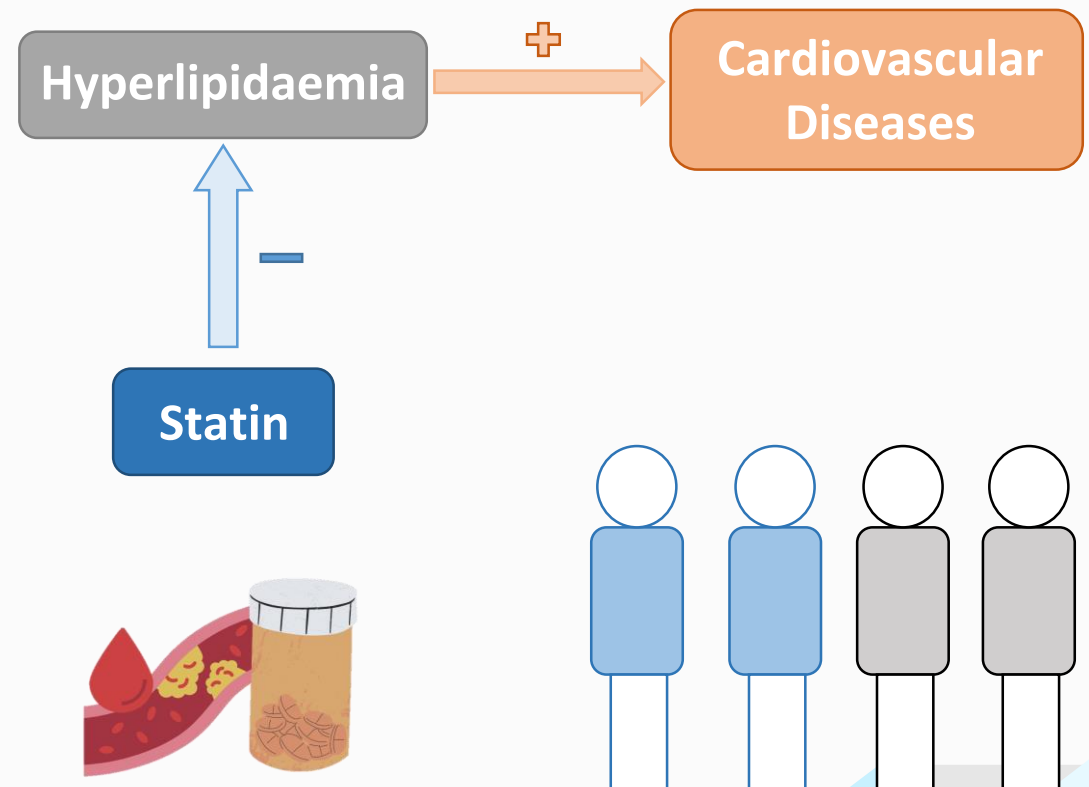
## Background

Diabetes has a global prevalence of 10.5% among adults aged 20 to 79 years

Using statin for primary prevention of CVDs in patients with diabetes

## What remain unclear

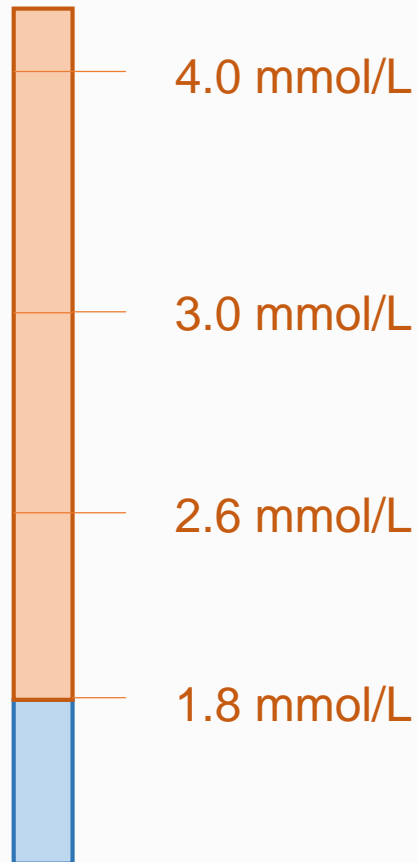
The **timing** to initiate statin in diabetes patients for primary prevention



# Current evidence

## LDL-C level

## Existing evidence or guideline



**RCT in Japan:** a lower risk of coronary heart disease in the treatment arm using pravastatin in the cohort (21% were diabetic) with a mean baseline LDL-C of 4 mmol/L

**RCT in UK, Multi-center RCT in 21 countries, Cohort study in Spain:** demonstrated the benefits of statin for primary prevention in participants with a mean baseline LDL-C of at least 3 mmol/L

**Guideline in mainland China and HK:** LDL-C  $\geq$  2.6 mmol/L in patients with DM

**Guideline by ACC/AHA:** suggesting the use of statin in diabetic patients who aged 40 to 75 years with LDL-C  $\geq$  1.8 mmol/L

# Objective

Comparing effectiveness and safety of initiating statin therapy at different LDL-C thresholds (1.8mmol/L vs. 2.6mmol/L) for primary prevention

## Overview of Method: target trial emulation

### Step 1: Target trial specification

Articulating the causal question in the form of the **protocol of a target trial** that would answer the question



### Key elements of causal estimands

Eligibility  
criteria

Treatment  
strategies

Treatment  
assignment

Follow-up

Outcomes

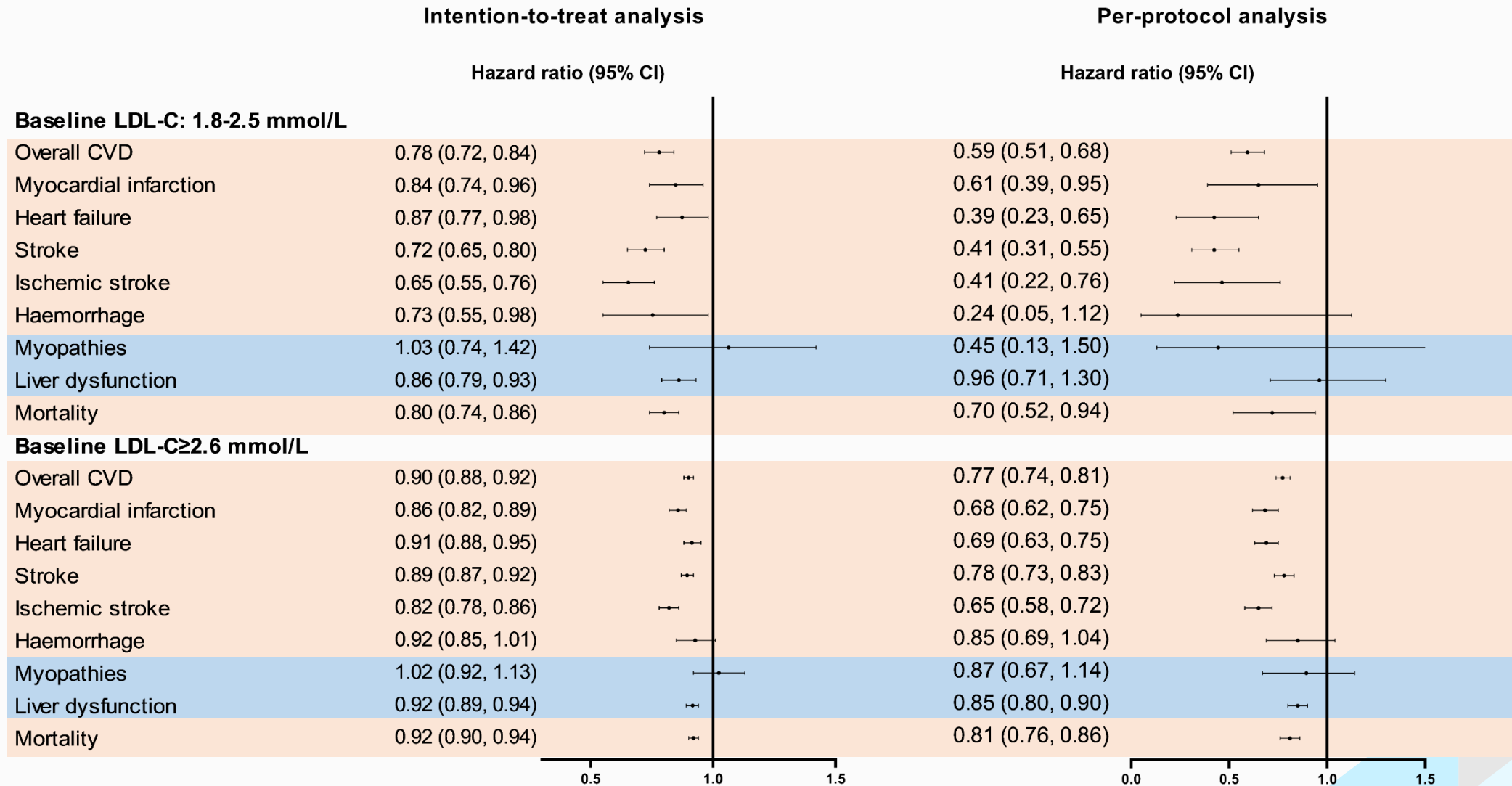
Statistical  
analysis



### Step 2: Target trial emulation

Emulate the **components of protocol** using the observational data.

# Results: Estimated effects of statin initiation



# Conclusion

Initiating Statin in diabetic patients with **baseline LDL-C  $\geq 1.8$  mmol/L** was associated with **reduced risks of incident CVD and all-cause mortality** among the Chinese population **without a significant increase in the risk of myopathy, liver function derangement, or cancer.**

## Published in Diabetes, Obesity & Metabolism

- Wan EYF et al. Evaluating different low-density lipoprotein cholesterol thresholds to initiate statin for prevention of cardiovascular diseases in patients with type 2 diabetes mellitus: A target trial emulation study. Diabetes, Obesity and Metabolism. 2024

## Extended outcomes

- Xu W et al. Long-term statin use and risk of cancers: a target trial emulation study. Journal of Clinical Epidemiology. 2024
- Xu W et al. Benefits and Risks Associated With Statin Therapy for Primary Prevention in Old and Very Old Adults: Real-World Evidence From a Target Trial Emulation Study. Annals of Internal Medicine. 2024
- HMRF 2023 (Recommend for Support)





# Proposal writing and interview

# Proposal writing - Research project

## Components

## Advices

Clinical important (e.g. what is the gap, what is the impact)

- Seek the advice of Health Professions (e.g. clinicians, nurses, pharmacists, OT, PT, dietitian etc.)

Feasibility (e.g. whether the study can be done)

- Include the results from pilot study
- Include preliminary data (especially in sample size calculation section)

Methodology (e.g. whether use the correct data analysis method)

- seek the advice from statisticians

Approval (e.g. whether the study is approved by IRB, any data sources approval?)

- Apply the approvals early

# Proposal writing – Mentor and Overseas training program

## Components

## Advices

Agreement from mentor and overseas supervisors (if any)

- Approach potential them early, and work the research project with them early

Additional to overseas training program

Set clear learning objectives

- Must be relevant to the projects

Include deliverables and time frame

- work with overseas supervisors on the training schedule

Budget

- Avoid over- or under-budget

# Interview

## Components

## Advices

Prepare Your Research Narrative

- Clearly articulate your research background, key plans. Practice summarizing your work in a concise way that highlights its significance and potential impact.

Anticipate Questions

- Prepare for common interview questions, such as, challenges you've faced in research, and your long-term career goals. Formulate thoughtful questions to ask the interviewers as well.

Mock Interviews

- Conduct mock interviews with a friend, mentor, or advisor. This helps you practice answering questions and receive constructive feedback on your responses and presentation style.



# Challenges during the implementation phase

# Challenges during the implementation phase

## Challenges

COVID-19 (e.g. changing the training period; delaying the data extraction; project extension etc.)

## Advices

- Seek the advice of oversea supervisor and HMRF research office



# Take-home Messages

## Take-home Messages

For junior research staff, the HMRF Research Fellowship Scheme presents a golden opportunity to develop your own research projects and acquire new skills and methodologies for future research

**Prepare Your Application Early:** Identify potential mentors and overseas supervisors at an early stage to strengthen your application.

**Emphasize Your Training/Mentorship Plan:** A well-structured Training and Mentorship Plan is just as important as your Research Plan. Ensure both are clearly articulated.

**Prepare Thoroughly for the Interview:** Take the time to practice and prepare for the interview to present your ideas confidently and effectively.

**Maintain Timely Communication:** Keep in regular contact with the HMRF research office regarding any amendments to your application or budget virement to ensure a smooth process.



# Acknowledgement

- **HMRF research fellowship scheme (Project No. FHB/H/41/69 (Application No: 05190107))**
- **HMRF research office**
- **Co-investigators in this project**
  - **Professor Cindy Lam (HKU)**
  - **Professor Ian Wong (HKU)**
  - **Professor Goodarz Danaei (Harvard University)**
  - **Dr Esther Yu (HKU)**
  - **Professor Esther Chan (HKU)**
  - **Dr Weng Chin (HKU)**
  - **Dr Celine Chui (HKU)**
  - **Ms Wanchun Xu (HKU)**
- **Hospital Authority for helping data extraction**
- **HKU ITS High Performance Computing service**