 Medicines through Advocacy and Transparency for Cardiovascular Health

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• Use of medicines for secondary prevention is very low, worldwide.
• This is worse in LMICs than HICs.
• Barriers for the use of medicines include patient-, provider-, and health system-level factors.
• Health system barriers include availability and affordability of medicines.
• The health system can be influenced by empowering patients.
Health Systems Strengthening

Making **SECONDARY** prevention, the **PRIMARY** goal

The overall goal of this proposal is to **improve use of quality essential medicines** for secondary prevention of CVD through the following mechanisms:

• improve **availability** of quality medicines
• improve **affordability** of quality medicines
• improve prescribing **practices** (physician behavior)
• improve **acceptability** (patient behavior)
Conceptual Model

Context

Empower patients
- Advocacy
- Support
- Education
- Transparency of governance

Patient Choice
- Choose lower cost pharmacies
- Choose higher quality meds
- Ask provider to prescribe indicated meds
- Ask for generic meds
- Complaints fed back to administrator

System responses
- Lower their prices
- Increase availability of generics
- Stock higher quality meds

Medication Use
- Lower cost for medicines
- Avoid stock outs
- Higher quality medicines
- Transparency
- Government support for the people
Interventions

1. MATCH Champions
2. WikiMeds
MATCH Champions

Empower patients

• Patient education
  – Importance of the medicines for secondary prevention.
  – Equivalence of generic and brand-name medicines
  – Basic assessment of medication quality (expiration date, disintegrating tablets)

• Social support to improve acceptability of medicines

• Advocacy/feedback from patient to provider to improve prescribing practices

• Location of visits is context-specific (home-visits, community-based group meetings, groups at health facilities).
WikiMeds (transparency of medicine governance)

- **WikiMeds Staff**: WikiMeds coordinator is a country-level individual who will collect medication user price information for recording and display on the WikiMeds website.
- Patients will send their medication price information to the WikiMeds coordinator.
- Agreement with local cell phone providers to charge the recipient (1-800-WIKIMED, WikiMeds coordinator) for the SMS message.
- Advertising for WikiMeds:
  - Online posting of public and private pricing via website communicated through social media
  - Public posting of medicine pricing at public sector dispensaries
- Pricing/quality data
  - WHO/HAI pricing for local public/private pricing (national procurement price and user price at public and private sector)
  - Patients inform the local WikiMed coordinator
  - Basic quality assessment (crumbling/old packaging) or expired products/limited shelf life.
Research Questions

1. Does the use of MATCH Champions improve usage of medicines for secondary prevention?
2. Does WikiMeds improve usage of medicines for secondary prevention?
3. Is the combination of MATCH Champions and WikiMeds more effective than either intervention alone?
Specific Aims

1. Qualitative evaluation of the local acceptability/feasibility of (1) MATCH Champions and (2) WikiMeds specifically to evaluate/target the barriers to the use of secondary prevention medications.

2. Adaptation/refinement of the planned intervention based on the results on Aim 1.

3. In a cluster-randomized 2x2 factorial design trial, evaluate the independent and combined effect of intervention 1 and 2 on the use of medicines for secondary prevention of CVD over 1 year and 5 years in defined cohorts.

4. Cost effectiveness evaluation of each intervention arm.
Definitions

• CVD: Post MI, Post Stroke, Heart Failure

• Use of medicines
  – PURE definition: use for 1 week in the last month of the indicated medicines
  – Evaluate each individual medicine and composite of indicated medicines

• Availability:
  – WHO/HAI definition: Available during cross-sectional survey

• MATCH Champions
  – High income countries: likely nurses, possibly lay paraprofessionals
  – LMIC: likely community health workers, pharmacists

• Prescribing practices:
  – Outpatient follow-up: Medical record review.

• User price
  – Patient price – Survey individual patients to ask about the price they paid.
  – Pharmacy price – WHO/HAI methodology
WikiMeds Price Map

Canada Map Gas Prices

Explore the map below to view gas prices directly on the map. Find the cheapest fuel and save some money on your next fill. The map is searchable using the search box located above the map.
## Initial Settings

<table>
<thead>
<tr>
<th></th>
<th>Bangladesh</th>
<th>Nigeria</th>
<th>U$A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current policy</strong></td>
<td>Full government coverage for consultations and medications</td>
<td>Public: 10% copay for meds with insurance</td>
<td>Public/Private insurance</td>
</tr>
<tr>
<td><strong>Public sector experience</strong></td>
<td>Public: $0.13 (consultation and med)</td>
<td>Public: 10% copay on a higher price (local pharmacy markup)</td>
<td>Variable copays at different pharmacies</td>
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<tr>
<td><strong>Private sector experience</strong></td>
<td>Full (marked up) price</td>
<td>Full (marked up) price</td>
<td></td>
</tr>
<tr>
<td><strong>Stock outs</strong></td>
<td>Frequent</td>
<td>Rare</td>
<td>Rare</td>
</tr>
<tr>
<td><strong>Corruption perception rank</strong></td>
<td>136/177</td>
<td>144/177</td>
<td>19/177</td>
</tr>
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Methods: Aim 1

Acceptability/feasibility.

- Focus group discussions: patients, physicians, local health administrators, policy makers, potential MATCH champions (context specific).
- Including incentives, financial compensation, volume for MATCH champions.
- Assess which health facilities and pharmacies are accessed by patients.
- Safety, security, privacy, accountability
Analysis: Aim 1

• Content analysis
• NVIVO software
• Deductive and inductive codes
Methods: Aim 2

Adaptation/refinement.

• Participatory design process (patients, potential MATCH champions, providers and local health administrators).

• Stakeholder agreements, and structures for supervision, reporting, monitoring, and evaluation.

• Development/programming of WikiMeds portal.

• Integrated into the existing health system.

• Acceptability/feasibility testing
Analysis: Aim 2

- Content analysis
- NVIVO Software
- Critical events
- Source-of-error analysis
- Iterative feedback
Methods: Aim 3

• Interventions
  – MATCH Champions
  – WikiMeds

• Patient Eligibility
  – Patients with a CVD event (MI, stroke or heart failure admission) requiring hospitalization within the last 12 months.
2 x 2 Factorial Design

<table>
<thead>
<tr>
<th>WikiMeds</th>
<th>MATCH Champions</th>
<th>MATCH Champions &amp; WikiMeds</th>
</tr>
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<tbody>
<tr>
<td>+</td>
<td>MATCH Champions</td>
<td>+</td>
</tr>
<tr>
<td>-</td>
<td>WikiMeds</td>
<td>-</td>
</tr>
</tbody>
</table>

MATCH Champions & WikiMeds

MATCH Champions

WikiMeds

Usual Care
Outcomes: Aim 3

• **Primary Outcome:**
  – Use of medicines at 1 year (pilot) and 5 years

• **Secondary Outcomes**
  – User price of medicines (patient price and pharmacy price)
  – Availability of medicines
  – Prescribing practices
  – Patient acceptability (survey instrument to be informed by Aim 1)
  – Recurrent events (recurrent MI, recurrent stroke, HF rehospitalization, development of another CVD event)
  – Death (CVD and all-cause, by hospital record or verbal autopsy)
  – Process evaluation
Cluster Sampling

• PURE-ly CONTEXT SPECIFIC
  – Local health administrative unit
  – Clusters to be chosen to facilitate training and administration of MATCH Champions.

• Potentially different cluster sizes in different settings/contexts
  – May need to stratify randomization
Analysis: Aim 3

- Power calculations
  - Expected effect size = 10% improvement in primary outcome
    - Combined arm: 20% expected improvement
  - ICC range: 0.01 - 0.20
  - Alpha 0.05, corrected for multiple comparisons
    - Bonferroni correction
  - Beta 0.20
- Plot # clusters vs ICC range to determine optimal sample size (including # clusters and N within cluster)
Analysis: Aim 3

- Multivariable logistic regression
- Cluster effects
- Confounding variables
  - Income classification
  - SES
  - Disease type
  - Demographic factors
Methods: Aim 4

Cost effectiveness--incremental

- MATCH Champions
- WikiMeds
- MATCH Champions & WikiMeds

- Costs from societal perspective
- Costs per DALY
Budget

• Please, fund us until we are done!
Budget (2)

1. Qualitative
   - study staff+ materials
   - Honoraria for study participants

2. Adaptation
   - WikiMeds maven
   - MATCH Champion training program, curriculum development, monitoring/evaluation tools

3. Intervention
   - Study coordinators
   - MATCH champions reimbursement
   - WikiMeds coordinators, programmers, servers, IT, air time
   - Investigator support/security

4. Cost Effectiveness
   - Costing data collection
   - Investigator support/security
Challenges and Alternatives

• Contamination between clusters
  – Ensure geographic separation

• Ensuring accountability and feedback
  – Transparency alone may be insufficient

• Safety and security of WikiMeds users
  – Remember WikiLeaks “whistle-blowers”

• Other barriers to use of medicines may be more important
  – Aim 1 will highlight relative importance of barriers
Thank you

Let’s light this MATCH together