The Patient-Centered Medical Home as a Model for Treating Adult Refugee Patients with Hypertension: A Retrospective Chart Review

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Background

- The Patient Centered Medical Home (PCMH) model for primary care attempts to improve patient health outcomes by providing resources needed to support successful management of chronic diseases, such as hypertension (HTN).
  - Efficacy of PCMH model is noted for the general population but has not yet been well described for patients from vulnerable populations such as refugees[1]
  - This study examines the role of the PCMH in the achievement of blood pressure (BP) control for refugees with HTN.
  - HTN was defined by JNC-8 guidelines[2]
    - Goal BP <140 / <90 for adults <65 and BP <150/<90 for 65+
- Approximately 1600 refugees have been seen at the study clinic – a National Committee for Quality Assurance Level 3 designated PCMH practice – since 2007
  - Evaluates patients for communicable disease as well as non-communicable diseases at initial evaluation and then transitions them to longitudinal care
  - As a PCMH, the practice provides:
    - Translation services
    - Pharmacists
    - Dedicated social worker
    - Collaboration with refugee resettlement agency
    - RN for care management
    - Home visits
    - Special clinic time for complex patients
    - Electronic record for monitoring patient metrics and population health

Methods

Study Design: Retrospective Chart Review

Setting: Jefferson Family Medicine Associates (JFMA), a large, urban, academic ambulatory practice

Patients: Recently resettled refugees (largely from Bhutan/Nepal, Iraq, Myanmar) who received care between 2007-2014 and have a diagnosis of hypertension (n = 149)

Data collection: For each patient with a diagnosis of HTN, BPs recorded at the overseas exam, an initial intake visit, and at each subsequent visit were collected, along with body mass index (BMI), lipid panel, and smoking status

Primary Outcome Measure: Achievement of BP goal (as per JNC-8 guidelines) at most recent visit

Secondary Outcome Measures: Completion of testing for associated quality measures (lipid panel, fasting blood sugar), smoking status, BMI

Results

Defining the population:

Patient Characteristics	Frequency (n)	Percentage (%)
Gender		
Female	78	52
Country of Origin		
Iraq	53	36
Bhutan/Nepal	51	34
Myanmar	22	15
Other*	23	15
Country of Transit		
Nepal	50	34
Iraq	21	14
Syria	17	11
Jordan	14	9
Thailand	12	8
Malaysia	8	5
Other**	27	18
Age Category		
18-29	6	4
30 – 39	20	13
40 - 49	33	22
50 -59	30	20
60 - 69	29	19
70+	31	21

Notably:

- 13.5% prevalence of HTN in study site refugee population
- 55% diagnosed abroad
- 45% diagnosed at study site

- Approximately 1/3 Iraqi, 1/3 Nepali/Bhutanese

- Prevalence equal across age groups:
- 42% ages 40-59
- 40% ages 60+

Table 1. Demographics of adult refugees diagnosed with hypertension (N = 149)
*Countries include Afghanistan, Cuba, Egypt, Ethiopia, Guinea, Haiti, Indonesia, Iran, Jordan, Liberia, Sudan, and Vietnam
**Countries include Cuba, Egypt, Ethiopia, Ghana, Guinea, Haiti, Kenya, Lebanon, Liberia, Romania, Turkey, Uzbekistan, Vietnam, and Not Documented

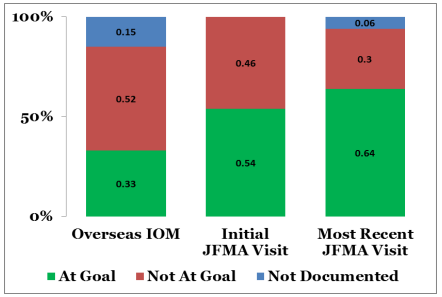

Figure 1 **Blood pressure goal status at the overseas exam, initial JFMA visit, and most recent JFMA visit**

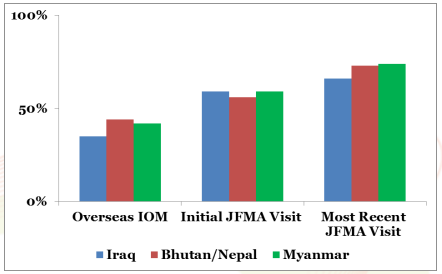

Figure 2 **Blood pressure goal status at the overseas exam, initial JFMA visit, and most recent JFMA visit by country of origin**

Discussion

- Refugee patients from all backgrounds engaged within the PCMH study site achieved BP control with similar success
  - Iraq 35% -> 59% -> 66%; Bhutan/Nepal 44% -> 56% -> 73%; Myanmar 42% -> 59% -> 75% (p =0.175)
- BP control increased from 33% at overseas visit to 64% at the most recent visit
- By McNemar test, no statistically significant change in proportion of individuals achieving goal BP from overseas to initial visit, initial to most recent visit, or overseas to most recent visit ($p = 0.15$, $p = 0.12$, $p = 0.63$, respectively)
- Other medical comorbidities assessed in the study population include obesity (33% at most recent visit), hyperlipidemia (40% diagnosed), diabetes mellitus (23% diagnosed), smoking status (42% quit)
- **Limitations:**
  - Time between visits varies by patient
  - Clinically significant BP changes may not reach "goal" set by guidelines and so was not included in analysis
  - Establishes correlation but not causation

Conclusions and Future Directions

- The PCMH model facilitates management of chronic conditions for complex patients from vulnerable populations by providing unique clinical services and care management
- Future research should include:
  - Studies at other institutions to confirm the findings at this site
  - Larger sample populations
  - Data analysis for associated quality metrics such as weight, cholesterol, fasting glucose
  - Further evaluation of the "time to goal" or number of visits required to get to goal BP
  - Patient-centered research evaluating individual experiences with pharmacy staff, social worker, etc to evaluate specific services

References

1. Grumbach, Kevin, and Grundy, Paul. (2010) Outcomes of implementing patient centered medical home interventions. *Washington, DC: Patient-Centered Primary Care Collaborative* .
2. Paul A. James, MD; Suzanne Oparil, MD; Barry L. Carter, PharmD; William C. Cushman, MD; Cheryl Dennison-Himmelfarb, RN, ANP, PhD; Joel Handler, MD; Daniel T. Lackland, DrPH; Michael L. LeFevre, MD, MSPH; Thomas D. MacKenzie, MD, MSPH; Olugbenga Ogedegbe, MD, MPH, MS; Sidney C. Smith Jr, MD; Laura P. Svetkey, MD, MHS; Sandra J. Taler, MD; Raymond R. Townsend, MD; Jackson T. Wright Jr, MD, PhD; Andrew S. Narva, MD; Eduardo Ortiz, MD, MPH (2014). 2014 evidence-based guideline for the management of high blood pressure in adults: report from the panel members appointed to the Eighth Joint National Committee (JNC 8). *JAMA*, *311*(5), 507-520.