Sorting TB Risk in CNMI

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Disclosures

Nothing to disclose
Learning Objectives

- Determine highest risk populations within your jurisdiction for TB control
- Develop a strategy for targeted latent TB screening
- Develop a cost-effective LTBI treatment regimen
What we know...

- CDC estimates that there are 13 million in the US with latent TB
  - 5-10% will develop active TB if not treated (650K to 1.3 million people)

- 2014 – 66% of active TB cases in US were in foreign-born individuals

- Majority of US active TB cases come from:
  - Mexico, Philippines, Vietnam, India, China, Haiti, and Guatemala
CNMI

- ~53,000 people per 2010 US Census
- Ethnicities
  - 40% Filipino
  - 32.7% Chamorro/Carolinian
  - 16.8% Other Asian (Chinese, Japanese, Korean)
  - 7.3% Other Pacific Islanders (FSM, Palauan)

United States overall... 3.0
Hawaii... 8.9
American Samoa... 7.4
Guam... 47.0
Northern Mariana Islands... 51.6
Palau... 65.8
Federated States of Micronesia... 97.9
Marshall Islands... 189.8

* Cases per 100,000 population; as of June 9, 2016.

Pacific Standards for Management of TB and DM

Standard 2: Every high-risk person with DM should be periodically screened for TB disease and TB infection

- Program may choose to screen all patients with DM for TB, or may choose to screen highest risk patients only
  - People with DM under age 50
  - People with poorly controlled DM (HgbA1c $\geq 8.0\%$)
Pacific Standards for Management of TB and DM

- Persons with TB symptoms or TB disease should be referred to the TB Program for TB management

- A test for TB infection should be done at the time of DM diagnosis

- Screening should be repeated as often as the local TB epidemiology may warrant. Annual symptom screening for TB disease is reasonable. Screening for TB infection every 2-5 years is reasonable.
Burden of DM in CNMI

- 2016 NCD Hybrid Survey estimates that 18.7% adults in CNMI have a diagnosis of DM, using RBS 140 as the cut-off
- Heavily concentrated among Chamorro, Carolinian, other Pacific Islanders, and Filipino populations
- Among the 2017 active TB cases thus far:
  - 12 out of 27 (44%) have DM
  - Average HgbA1c 8.5%
2016 CNMI LTBI Cases

- 239 cases
  - 10 with listed full completion of the 9 months of isoniazid (4%)
  - Falsely low?
    - Not in database?
    - Lack of case management?
    - Too long duration?
January-March 2017
- 24 cases
- 3 out of the 24 (12.5%) noted full completion by August 2017

April 2017-present
- In early April, changed from INH x 9 months to RIF x 4 months, unless otherwise contraindicated for RIF
- Instituted a case management system in which one Chest Clinic staff is assigned an LTBI case to follow-up and remind for monthly refills
- 27 out of the 35 cases (77%) have been compliant with monthly refills
Estimated CNMI LTBI Incidence Rate

- 2016 – 239 cases
- Population per 2010 US Census of 53,000
- Incidence rate of LTBI (estimated): 450 per 100,000
LTBI Screening Strategies

- Program may choose to screen all patients with DM for TB
  - **6,732** adults in CNMI with DM with 18.7% as estimated DM prevalence – not feasible

- People with DM under age 50 – 30% of population – **15,900**
  - **2,973** adults in CNMI age 50 and under with DM – not feasible

- People with poorly controlled DM (HgbA1c \( \geq 8.0\% \))
  - Assuming 50% of the 6,732 have HgbA1c >8%, then **3,366** have poorly controlled DM – not feasible
LTBI Screening Strategies (continue)

- People with DM under age 50 and with poorly controlled DM (HgbA1c $\geq 8.0\%$)
  - Assuming 18.7% DM prevalence
  - 2,973 is the DM population of those age 50 and under
  - Assuming 50% of have poorly controlled DM
    - Grand total: 1,486
CNMI Current Reality

- Staffing available for case management
  - 1 RN
  - 2 nurse assistants
  - 1 program manager

- All staff already also assigned for case management to the current 27 cases of active TB

- We already do DM screening for all active TB patients

- How much of the 1,486 can the Chest Clinic staff handle?

- How much can CHCC handle in terms of drug, labs, and imaging costs?
Cost Effectiveness

- INH vs. RIF
  - INH costs $0.84 per 300 mg pill
  - RIF costs $0.15 per 600 mg pill

- INH x 9 months - $40
- RIF x 4 months - $100
CNMI LTBI Screening Proposal

- Screen patients who have a diagnosis of DM and is 50 years or younger who are seen at Kagman Community Health Clinic from now until December 31, 2017
  - Kagman has estimated 300 patients with DM, so assuming 50% have poor control, then approximately **150** patients qualify for TB screening
  - The above is in addition to contacts screening and screening of correctional facilities inmates

- Estimated cost: $15,000 direct drug costs for treating 150 patients with RIF x 4 months
  - Vs. $17,000 - direct cost to treat a case of drug-susceptible TB
  - Does not include costs of PPD testing, CXR imaging, or staffing costs
CNMI LTBI Screening Proposal

- In 2018
  - We will begin to screen patients with DM age 50 years and younger at Family Care Clinic (FCC)
  - Estimating at least 3000 patients at FCC with DM
  - 30% of 3000 is 900 patients age 50 and younger
  - 50% of 900 is **450 patients** with poorly controlled DM and 50 years and younger who qualifies for TB screening

- Estimated cost: $45,000 direct drug costs for treating 450 patients with RIF x 4 months
CNMI LTBI Screening Proposal

- In 2019
  - Broaden to private clinics on Saipan (4 clinics)

- In 2020
  - Broaden to screen patients with DM on Tinian and Rota
CNMI LTBI Screening Proposal

- All patients with LTBI will be offered RIF x 4 months unless contraindicated

- Any patients with high risk factors will first be seen and evaluated by a physician

- All patients with LTBI will be assigned to a Chest Clinic staff for monthly renewal follow-up
Thoughts?
Si Yu’us Ma’asi!
References


