

# Coordination of Care: The Case Manager's Perspective Multi-drug Resistant Tuberculosis (MDR-TB)

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# The Case Manager's Perspective: (MDR-TB)

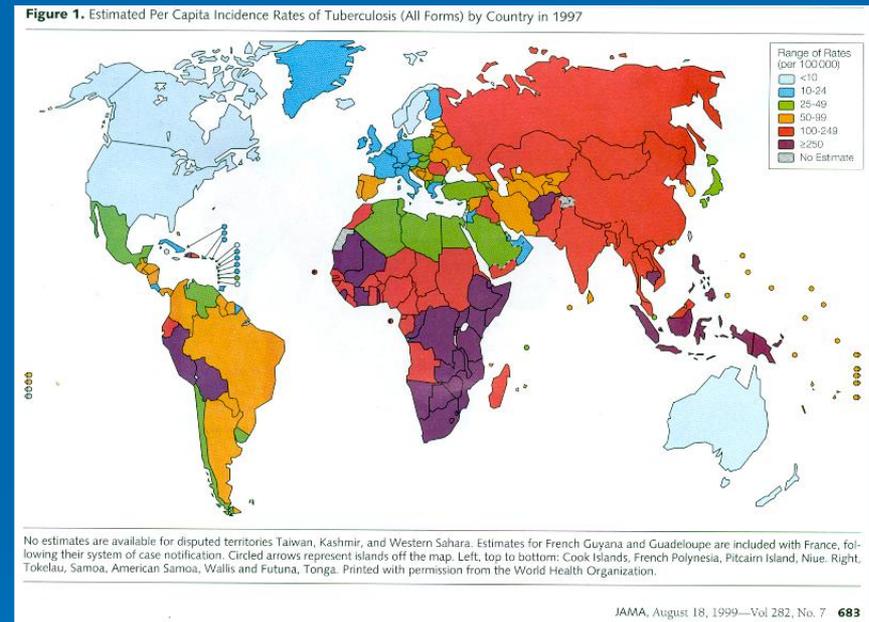
## Definition of MDR-TB:

TB isolate that is resistant to both isoniazid and rifampin.



# The Case Manager's Perspective: MDR-TB

- MDR-TB: TB isolate that is resistant to both isoniazid and rifampin.
- 2004 MDR-TB estimates 424,203 (4.3%) (includes new and previously treated cases).
- 43% of global MDR-TB cases have had prior treatment



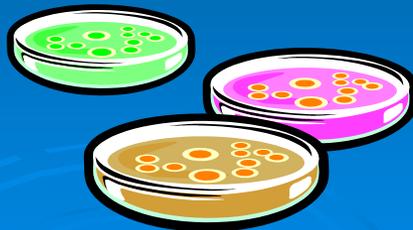
# MDR-TB Case

- June 2009- 24 year old female refugee arrived in USA. Born in Bhutan & lived last 17 years in Nepali refugee camp.
- August 2009- Initial assessment @ ICHD class B1 status. TST 17mm. Hospitalized w/ respiratory symptoms. CXR- abnormal. Bronchial wash specimens culture negative. TB disease r/o by ID physician.
- November 2009- Seen at ICHD LTBI clinic. Started on INH 300mg x 9 mths (self administered). Completed tx August 2010.



# MDR-TB Case

- November 2010- CXR done by PCP for unrelated reason. Results abnormal (significant changes since last years studies) suggestive of TB. CT Scan abnormal.
  - c/o poor appetite, fatigue and occasional chest pain. No other symptoms noted. Medical hx- IBS, HIV neg
  - Collected 3 sputums- all smear negative.
  - HPLC report positive Mycobacterium TB complex.
  - Case started 4 drug therapy- put in isolation.



# MDR-TB Case

- December 10, 2010- Preliminary susceptibility: resistance to INH, RIF and EMB. All TB meds stopped after Dr. Lowhim (ICHHD) consulted with Dr. Sunstrum (MDCH TB Consultant). Await final susceptibility report before starting regimen.



# MDR-TB Case

- December 29, 2010- Final susceptibility report:

## Resistant

Isonizid

Rifampin

Pyrazinamide

Ethambutol

Ethionamide

Streptomycin



## Susceptible

Ciprofloxacin

Kanamycin

Cycloserine

Capreomycin

Amikacin

Ofloxacin

Para-aminosalicylic  
Acid (50%)

- January 5, 2011- January 8, 2011: Case hospitalized at Sparrow Hospital to initiate medication regimen. PICC line inserted. Medications per Dr. Sunstrum's recommendations.

# MDR-TB Case



## ➤ Initial Treatment Plan-

- TB Meds initiated: Moxifloxacin daily, Linezolid daily, Cyclocerine 2x day, Capreomycin daily IV, Para-Aminosalicylic Acid 2x day.
- Weekly PICC dressing change- later port placed.
- Weekly blood work- later decreased to q mth.
- Monthly induced sputum collection (albuterol nebulizer tx in negative pressure room).
- Monthly vision and hearing tests.
- Initially (every week and prn) case conference with Dr. Lowhim (ICHHD Medical Director), Ruby Rodgers (CD manager). Included Dr. Sunstrum monthly on case conference.
- Case was in home isolation from 12/1/2010- 3/1/2011 (total 90 days).

# MDR-TB Case



## ➤ Contact Investigation-

- Infectious period of 9/1/2010 to 3/1/2011.
- 7 family members and 4 co-workers identified and tested.
- 3 family members were QFT positive, asymptomatic and CXR negative.
- 1 co-worker had prior +TST, asymptomatic, and CXR negative. Co-worker had almost completed 9 mths of INH treatment at time of contact investigation.
- Upon consultation w/ Dr. Sunstrum- + QFT Family members were to start 9 mths of INH and Moxifloxacin. Co-worker was to complete last three months of nine month INH regimen.

# MDR-TB Case

## ➤ Financial impact

- Case became uninsured in December 2010 before MDR-TB treatment even started.
- ICHD paid for COBRA coverage.
- ICHD assisted case w/ living expenses.
- Overtime cost for long (IV infusion) weekend DOTs
- Mileage reimbursement for BID visits.
- ICHD paid for MDR-TB contacts tx w/ LTBI medications.



# MDR-TB Case

## MDR Actual Monthly Cost of Living and Medical Expenses

<b>MDR Monthly Expenses</b>			
<b>Living*</b>		<b>Medical</b>	
<b>Month/Year</b>	<b>Total Paid</b>	<b>Month/Year</b>	<b>Total Paid</b>
<b>Jan. 2012</b>	<b>\$ 728.84</b>	<b>Jan. 2012</b>	<b>\$13,226.51</b>
<b>Feb. 2012</b>	<b>\$ 810.32</b>	<b>Feb. 2012</b>	<b>\$ 3,108.06</b>
<b>Mar. 2012</b>	<b>\$ 762.95</b>	<b>March 2012</b>	<b>\$ 3,462.45</b>
<b>Total</b>	<b>\$2,302.11</b>	<b>Total</b>	<b>\$19,797.02</b>
<b>*includes Cobra</b>			

**MDR Estimated Monthly  
Cost of Living and Medical Expenses  
For Last Six Months  
(Insurance ran out June 12, 2012)**

<b>Date</b>	<b>Total Living Expenses</b>	<b>Total Medical Expenses</b>	<b>Totals</b>
<b>July 2012</b>	<b>\$ 301.17</b>	<b>\$ 27,186.75</b>	<b>\$ 27,487.92</b>
<b>Aug 2012</b>	<b>\$ 301.17</b>	<b>\$ 27,186.75</b>	<b>\$ 27,487.92</b>
<b>Sept 2012</b>	<b>\$ 301.17</b>	<b>\$ 27,186.75</b>	<b>\$ 27,487.92</b>
<b>Oct 2012</b>	<b>\$ 301.17</b>	<b>\$ 27,186.75</b>	<b>\$ 27,487.92</b>
<b>Nov 2012</b>	<b>\$ 301.17</b>	<b>\$ 27,186.75</b>	<b>\$ 27,487.92</b>
<b>Dec 2012</b>	<b>\$ 301.17</b>	<b>\$ 27,186.75</b>	<b>\$ 27,487.92</b>
<b>Total</b>	<b>\$1807.02</b>	<b>\$163,120.50</b>	<b>\$164,927.52</b>

# MDR-TB Case

## ➤ Concerns/ Challenges-

- Worked as a seamstress. Released from work 12/2010 (while in isolation). Lost income/ insurance.
- Language barrier: Initial contact w/ case using older brother as interpreter.
- Boyfriend lived in Canada (refugee from same Nepali camp).
- In home isolation x 90 days. Extended family (father, mother, grandmother, 3 brothers and 1 sister). Father, mother, grandmother and sister newly arrived from Nepal. Hadn't seen in almost 2 yrs. Lived in separate apt.

# MDR-TB Case



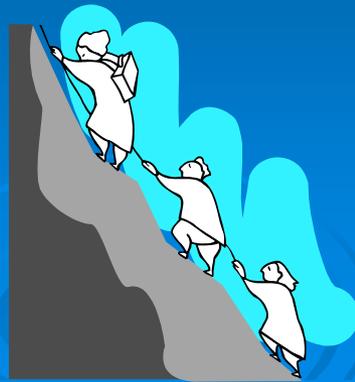
## Concerns/ Challenges-

- 2x day DOT visits by CD nurses. Short staffed. CD nurse visit for daily IV 1 ½ hr each day. Once out of home isolation- went to Sparrow Infusion for IV. Daily IV Capreomycin now given 3x wk.
- Depression due to health status/ symptoms from treatment, 3 mth home isolation, loss of job, separation and eventual break-up w/ BF, financial stress on family from loss of her income, delayed going to college.

# MDR-TB Case

## ➤ Concerns/ Challenges

- Case c/o symptoms from TB meds: GI distress, generalized muscle pain.
- Capreomycin nation wide shortage.
- No negative pressure rooms at ICHD. Rented space at Pulmonary Services (local pulmonology group).
- Initial trust/ confidentiality concerns re: contact investigation. Bhutanese refugees have close/ tight knit community in Lansing. Everyone knows everyone else.



# MDR-TB Case



Lessons Learned- It takes a village...to manage a MDR-TB case.

- Total DOT visits to this point: 977 (Many thanks to my co-workers: CD nurses Deneen, Missy, Andrea and Kathy).
- Clerical assistance (Thanks Shelly)- making sure the bills get paid (especially Cobra payments). Tracking of financial statistical information.
- Thanks to my CD Manager Ruby Rodgers, Medical Director Dr. Lowhim, TB Consult- Dr. Sunstrum and to the MDCH TB staff for all their advice and support.

## MDR-TB Case

# Questions?

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