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**The U-Shaped Curve of Concern:
Where Are We 27 Years Later?**
Commemorating World TB Day

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World TB Day

- Proposed by Mali in 1991
- March 24, 2018 is the 136th anniversary of discovery of tubercle bacillus
- GTBI, NYC-BTBC, IUATLD (UNION), WHO, CDC, ATS; crusaders against TB worldwide celebrate March 24 or World TB day to call attention to the embarrassing fact that TB will kill more people in 2018 than in 1882 when Koch discovered the bacillus

Resurgent Tuberculosis in New York City-1

- Analyzed a cohort of 224 consecutive patients recently admitted to a large, sophisticated university affiliated urban hospital center
 - 53% alcoholic, 64% intravenous drug and/or crack cocaine users, 68% homeless or unstable housing, and 50% HIV infected
- Ultimately, 178 patients were discharged on TB treatment
 - 159 (89%) were lost to follow-up, failing to complete therapy
 - Of these, 48 patients were re-admitted within 12 months with confirmed active TB; 40 of these were discharged on treatment, and another 35 were lost

Karen Brudney & Jay Dobkin
 Resurgent Tuberculosis in New York City -
 Human Immunodeficiency Virus, Homelessness,
 and the decline of Tuberculosis Control Programs
Am Rev Respir Dis 1991; 144:745-749

Resurgent Tuberculosis in New York City-2

- Central Harlem has been the area in New York City with the highest rate of TB since before 1960, having seen a more dramatic increase in TB than any other area and has been an area of unemployment, poverty, and high rates of drug and alcohol abuse and AIDS
- Prospectively studied all patients with TB admitted to Harlem Hospital
 - All inpatients at Harlem Hospital Center with suspected or confirmed TB were evaluated
 - Only patients with culture-confirmed *Mycobacterium tuberculosis* were included

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Brudney and Dobkin's Conclusions

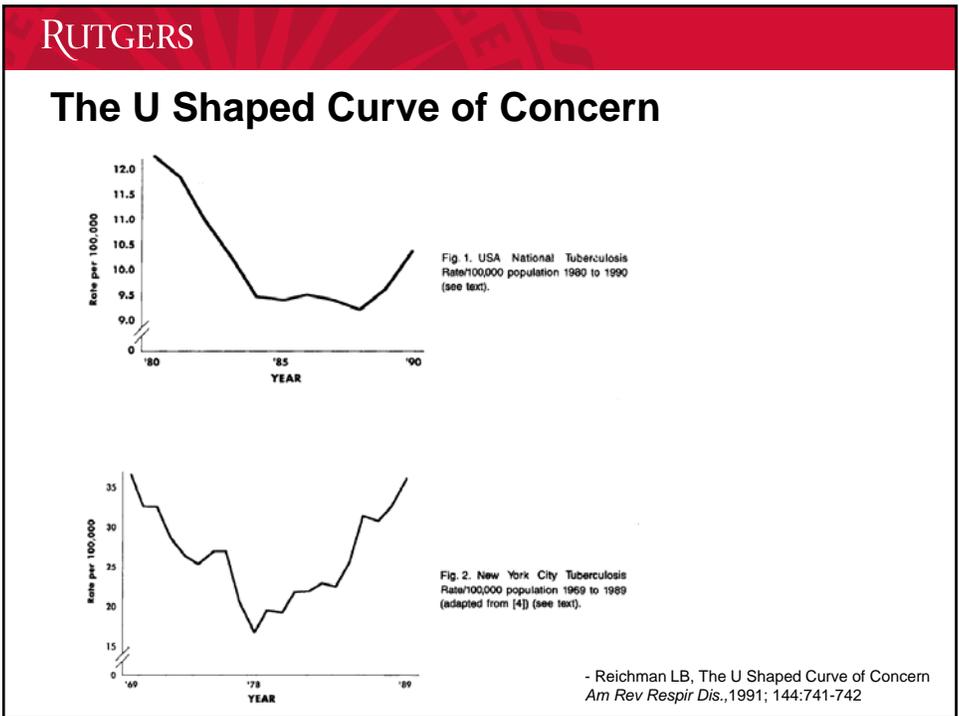
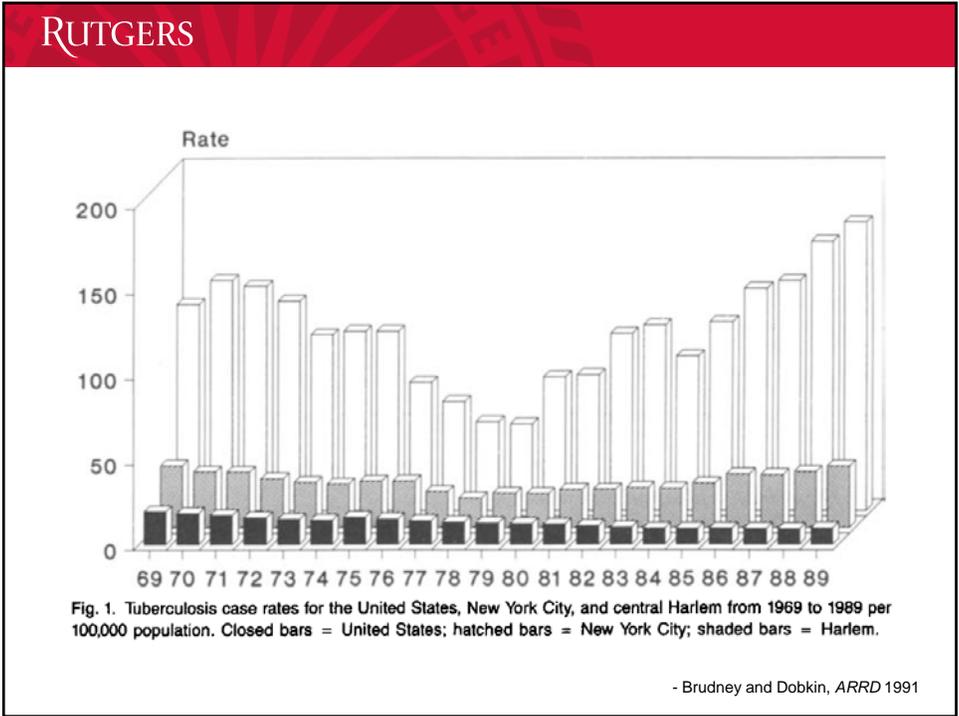
- The resurgence of TB in the AIDS era is surrounded by ironies. Increasingly potent anti-tuberculosis agents are powerless to overcome massive noncompliance
- Tuberculosis, among all the serious complications of AIDS, stands out simultaneously as both the most curable and the most contagious to the HIV-negative population
- Regaining control of epidemic tuberculosis will be difficult and will require effective approaches to hardcore issues also common to the AIDS epidemic: poverty, homelessness, and substance abuse
- The AIDS epidemic has created severe financial stress on the health care system in many communities. It would be a tragic mistake to divert vital resources to AIDS activities from essential public health programs like tuberculosis control

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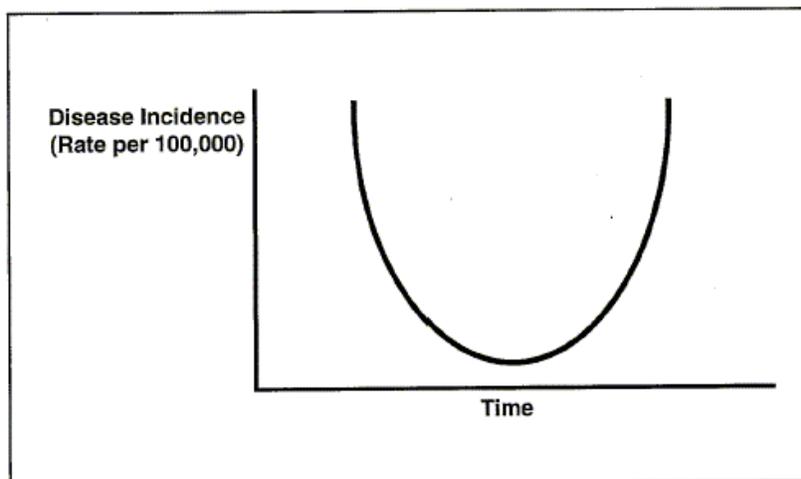
The Original Editorial -1

- The rise of TB in New York City, and by analogy other urban areas of the US, is not due only to the HIV or homeless problems usually cited by the media
- It reflects the total failure of a public health system
- The Brudney-Dobkin experience precisely reflects what seems to be a ubiquitous occurrence in public health practice
- First, evaluation indicators of a public health program show improvement leading to diminishment of compelling need
- Then resources providing fuel and direction for the program are removed
- Finally, the incidence of the disease "controlled" begins to rise in proportion to the diminished resources
- This phenomenon has been called "the U-shaped curve of concern"

Reichman LB, The U Shaped Curve of Concern
Am Rev Respir Dis., 1991; 144:741-742



The U Shaped Curve of Concern



The Original Editorial-2

- Brudney and Dobkin document that the rise in TB rates in their center is largely caused by the failure of the system although the knowledge and technology to reverse this trend have been readily available
- This is the state of TB control in the United States in the 1990's
- The problem is amply defined and well documented, and the solution attainable with dedication, resources and commitment
- Many programs have long demonstrated they have the dedication. Unfortunately and urgently, we still await the resources and commitment

- Reichman LB, The U Shaped Curve of Concern
Am Rev Respir Dis.,1991; 144:741-742

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Case Rates

	2016	2017
NYC Cases	565 cases	613 cases (+10%)
NYC Case Rates (per 100,000)	6.9	7.5
US Cases	9256 cases	9093 cases (-1.8%)
US Case Rates (per 100,000)	2.9	2.8 (-2.5%)

*CDC MMWR Tuberculosis — United States, 2017
March 23, 2018 / 67(11);317–323*

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Déjà Vu All Over Again

- NYC projects 10% increase in cases in 2018
- NYC projects a loss in funding for 2018
- When will we ever learn?

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