
Witness
an online magazine
Tuberculosis
Scourge of a Silent Killer
Photographs & Text
by
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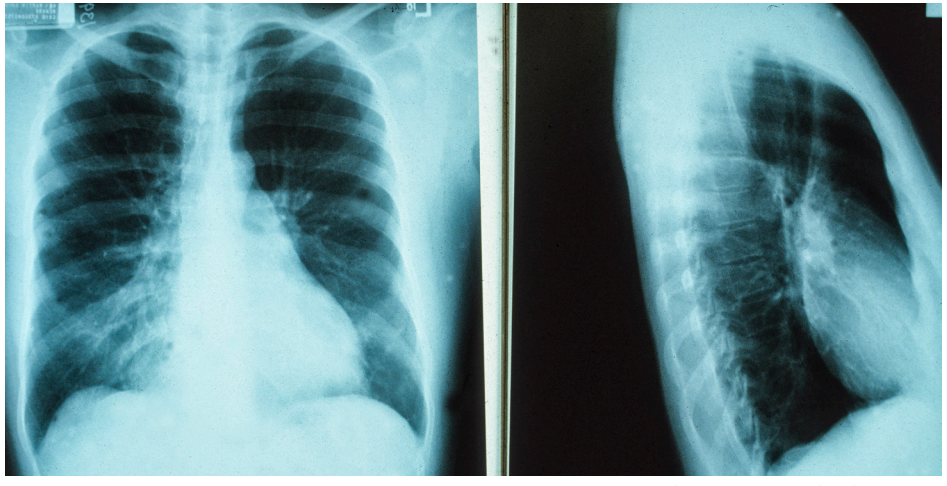
Tuberculosis

The Scourge of a Silent Killer

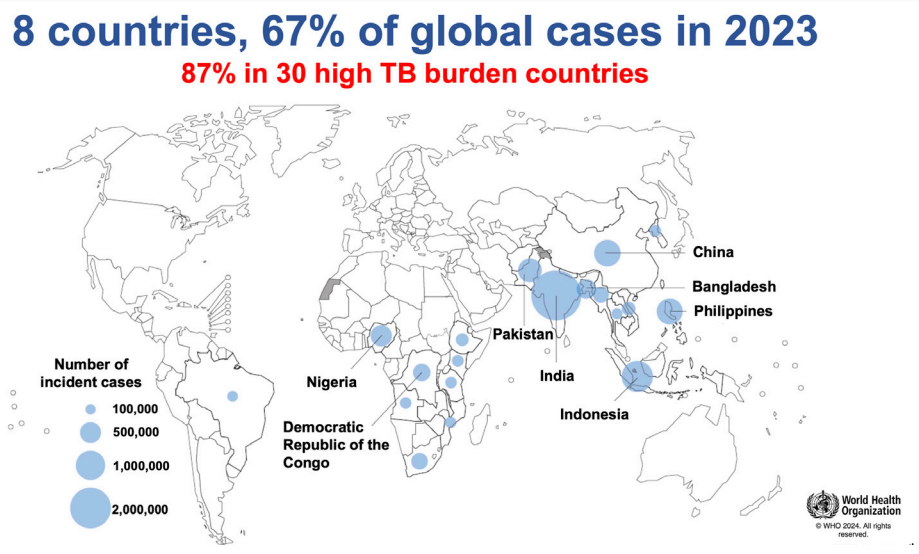
For several weeks, Danny was not feeling well. He had a cough, chills, and night sweats. This was followed by days of high fever. Finally, he decided to see a doctor when he started coughing up blood. After several examinations, Danny was diagnosed with active tuberculosis (TB) disease. It was the beginning of a long road.

The American Lung Association defines Tuberculosis (TB) as an airborne bacterial infection caused by the organism Mycobacterium tuberculosis that primarily affects the lungs. However, other organs and tissues may be involved. A diagnosis of TB requires a patient to follow a strict and regulated treatment plan to both suppress the disease from spreading and cure the patient. These treatment plans (also called treatment regimens) can take 4, 6, or 9 months to complete depending on the type of bacteria infecting the body. They require a patient to ingest several combinations of drugs daily. TB is treated with antibiotics. However, some forms of the bacteria no longer respond well to treatments.



X-ray shows TB in the lungs.

For many years, tuberculosis was in a slow decline. In recent years, the incidence of tuberculosis has been increasing globally. The World Health Organization (WHO) published a new report on tuberculosis revealing that approximately 10.8 million people were newly diagnosed with TB in 2023 – the highest number recorded since WHO began global TB monitoring in 1995. Of the number, 1.6 million people died, placing TB again as the leading infectious disease killer in 2023, surpassing COVID-19. The report also found an increase in drug-resistant cases.



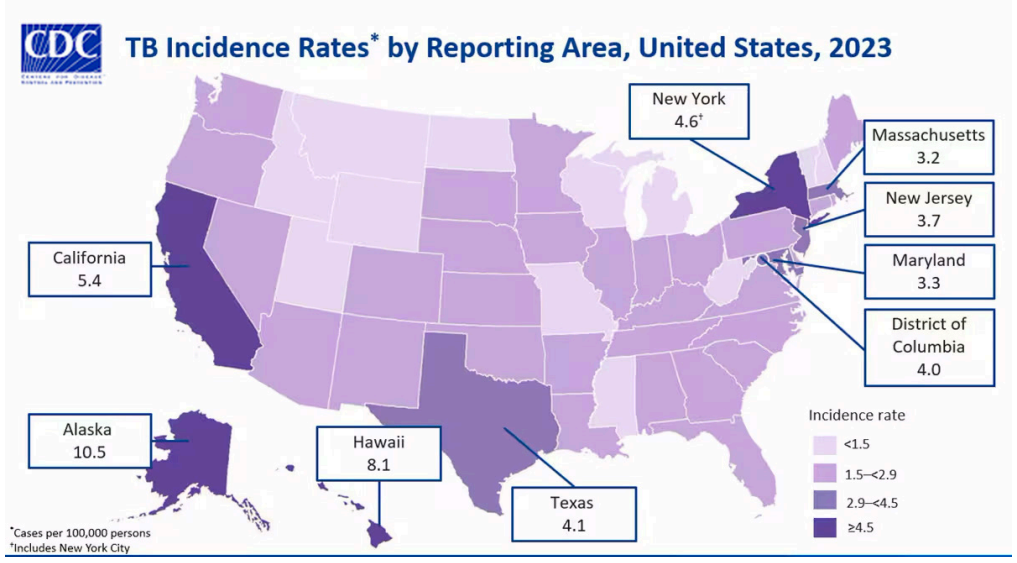
In the United States, the Centers for Disease Control and Prevention (CDC) reported an increase in tuberculosis by sixteen percent. As in past years, four U.S. states combined reported half (50.6%) of all U.S. TB disease cases in 2023:

- California (21.9%)
- Texas (12.9%)
- New York, including New York City (9.3%)
- Florida (6.5%)

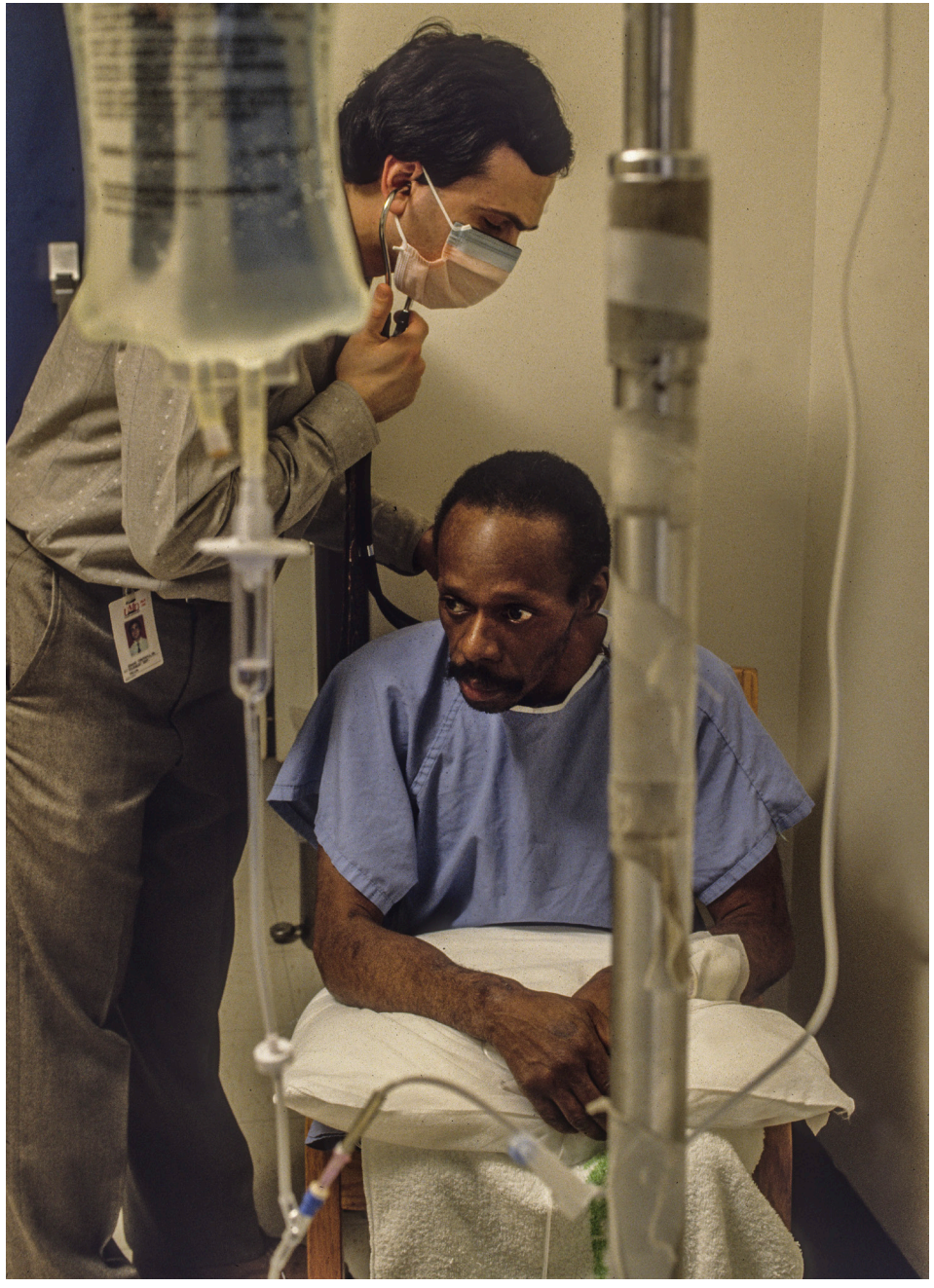
These states are the most populated U.S. states but only represent about a third of the total U.S. population.

The CDC also reported in 2023, the TB incidence rates (cases per 100,000 persons) in areas above the national incidence rate of 2.9 cases per 100,000 persons. They were:

- Alaska, 10.5
- Hawaii, 8.1
- California, 5.4
- New York, including New York City, 4.6
- Texas, 4.1
- District of Columbia, 4.0
- New Jersey, 3.7
- Maryland, 3.3
- Massachusetts, 3.2



The germs from tuberculosis are passed through the air when someone sick with TB coughs, speaks, laughs, sings, or sneezes. Anyone near the sick person with TB disease can breathe TB germs into their lungs. The disease spreads easily when people gather in crowds or live in crowded conditions. People with HIV/AIDS and other people with weakened immune systems have a higher risk of catching tuberculosis than people with typical immune systems.[1]



TB patient is treated at University Hospital.

A nurse comforts a TB patient at University Hospital.. Newark, NJ

Once someone is infected, the TB germs can live in the body without making the individual sick. This is called latent TB infection. Latent TB requires a preventive therapy plan. This treatment kills germs that could cause problems if the disease becomes active. The most common preventive therapy is a daily dose of the antibiotic isoniazid (INH) taken as a single pill for six to nine months. A patient is not contagious if they have latent TB. [2]

If a patient has an active TB disease you are treated with a combination of antibacterial medications for six to 12 months. The most common treatment for active TB is isoniazid INH in combination with three other drugs—rifampin, pyrazinamide, and ethambutol. An individual may begin to feel better only a few weeks after starting to take the drugs, but treating TB takes much longer than other bacterial infections. A patient must continue taking the medication for the entire time. Not completing the course could also contribute to drug-resistant TB.[3]

Drug-resistant TB means that some drugs initially used to treat TB will no longer be able to fight the TB germs in your body. TB that is resistant to more than one drug, called multidrug-resistant TB (MDR TB), is very dangerous. The treatment for this type of TB takes much longer, 20 to 30 months to complete, and you may experience more side effects. [4]

A patient must finish their medicine and take the drugs exactly as prescribed. If a patient stops taking the drugs too soon because they start feeling better, they will become sick again and potentially spread the disease to others. Additionally, by taking the drugs incorrectly, TB germs that are still alive may become drug-resistant, making it harder for an individual to get better next time.[5] These treatments must also include regular checkups to ensure the drugs work correctly.

TB patient is treated at University Hospital.

Hospitalization for tuburculosis is expensive.

The cost of treating tuberculosis (TB) in the United States varies depending on the type of TB and the treatment regimen. The CDC estimates that the average cost of direct treatment for non-MDR TB is $23,000.00 while the average cost for MDR TB is $182,186.00

TB in California: 2020 Snapshot

Tuberculosis (TB) disease is an illness caused by the bacteria Mycobacterium tuberculosis. TB usually affects the lungs and spreads through the air when a person sick with TB coughs. Not everyone infected with the bacteria becomes sick. People that have been infected but are not sick have latent tuberculosis infection (LTBI). People with LTBI can become sick with TB disease in the future if they are not treated. [6]

Medical and societal costs of TB reached $180 million in California in 2020.

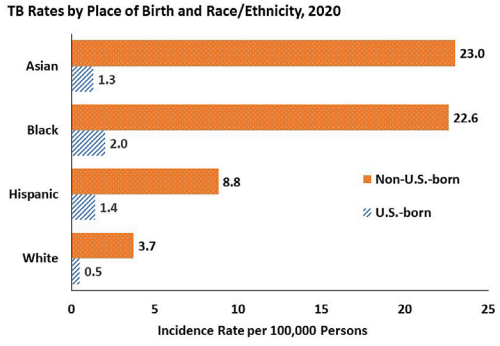
The vast majority of TB cases (85%) were attributable to progression of LTBI to active TB while an estimated 5% of cases were in persons who arrived in California with active TB disease from outside the United States, and another 10% resulted from recent transmission.

More than 2 million Californians (6% of the population) have LTBI. Without treatment LTBI can progress to active TB.

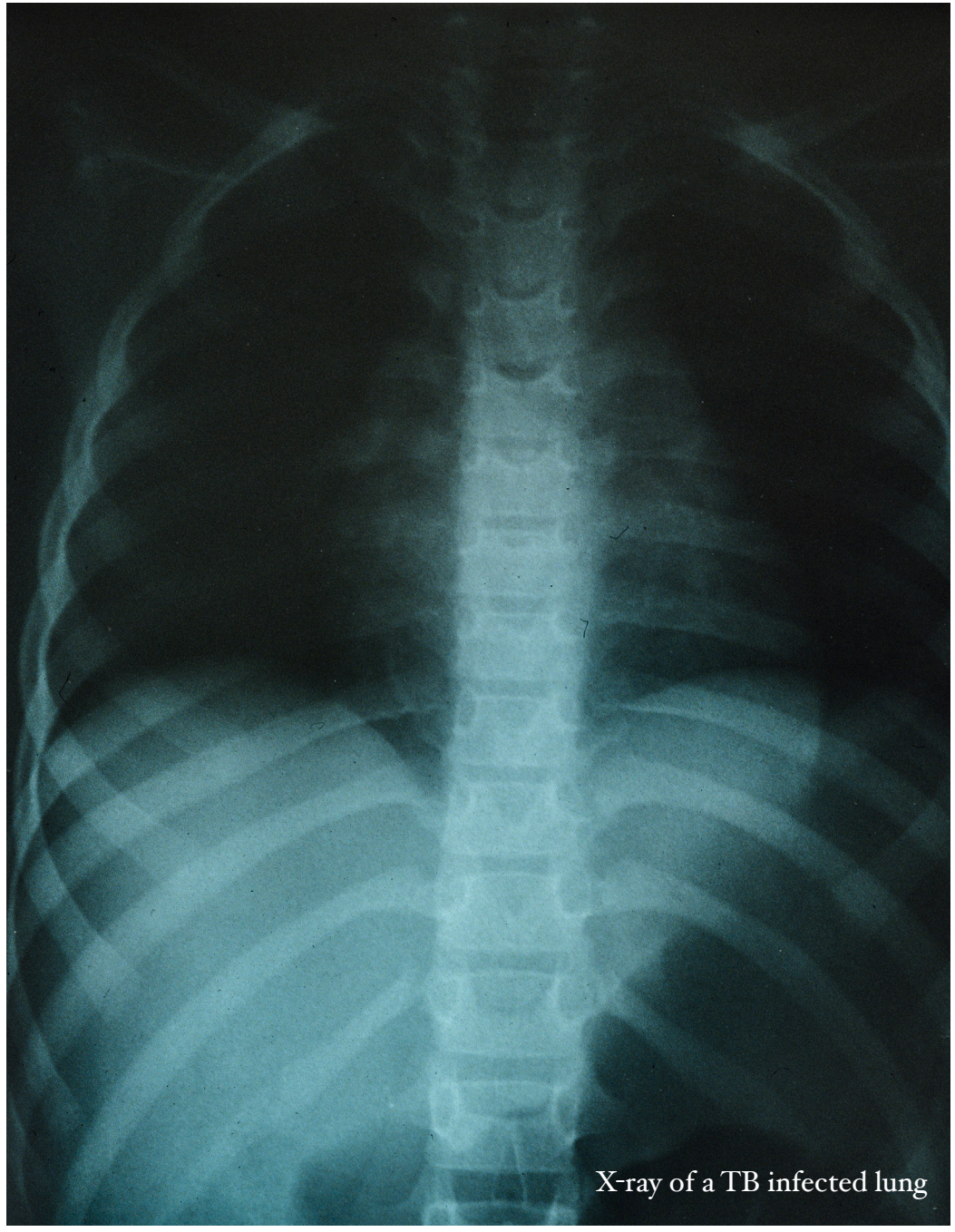
The TB rate among persons born outside the U.S. (13.2 per100,000) was 14 times higher than the rate among U.S. born persons (1.0 per 100,000).

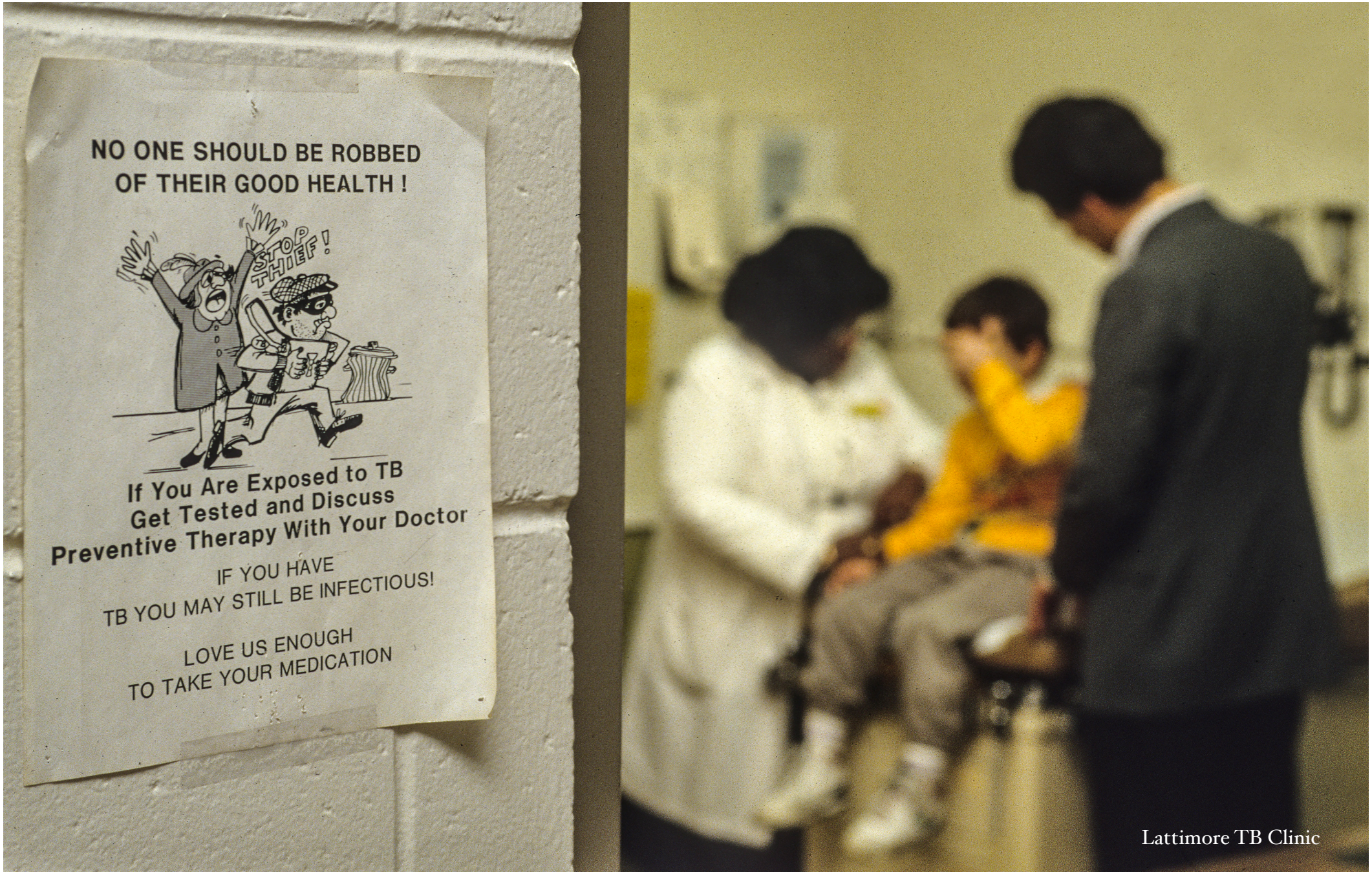
Racial/Ethnic Disparities

- The rates among Asians and Blacks born outside the U.S. were **50 and 51 times higher** than of U.S.-born whites respectively. The rate among non-U.S.-born Hispanics was 20 times that of U.S.-born whites.
- Rates in each non-U.S.-born racial and ethnic group were higher than among U.S.-born persons in the same group.



- More than half (52%) of California's TB cases occurred in Asians, up from 47% in 2010.


X-ray of a TB infected lung



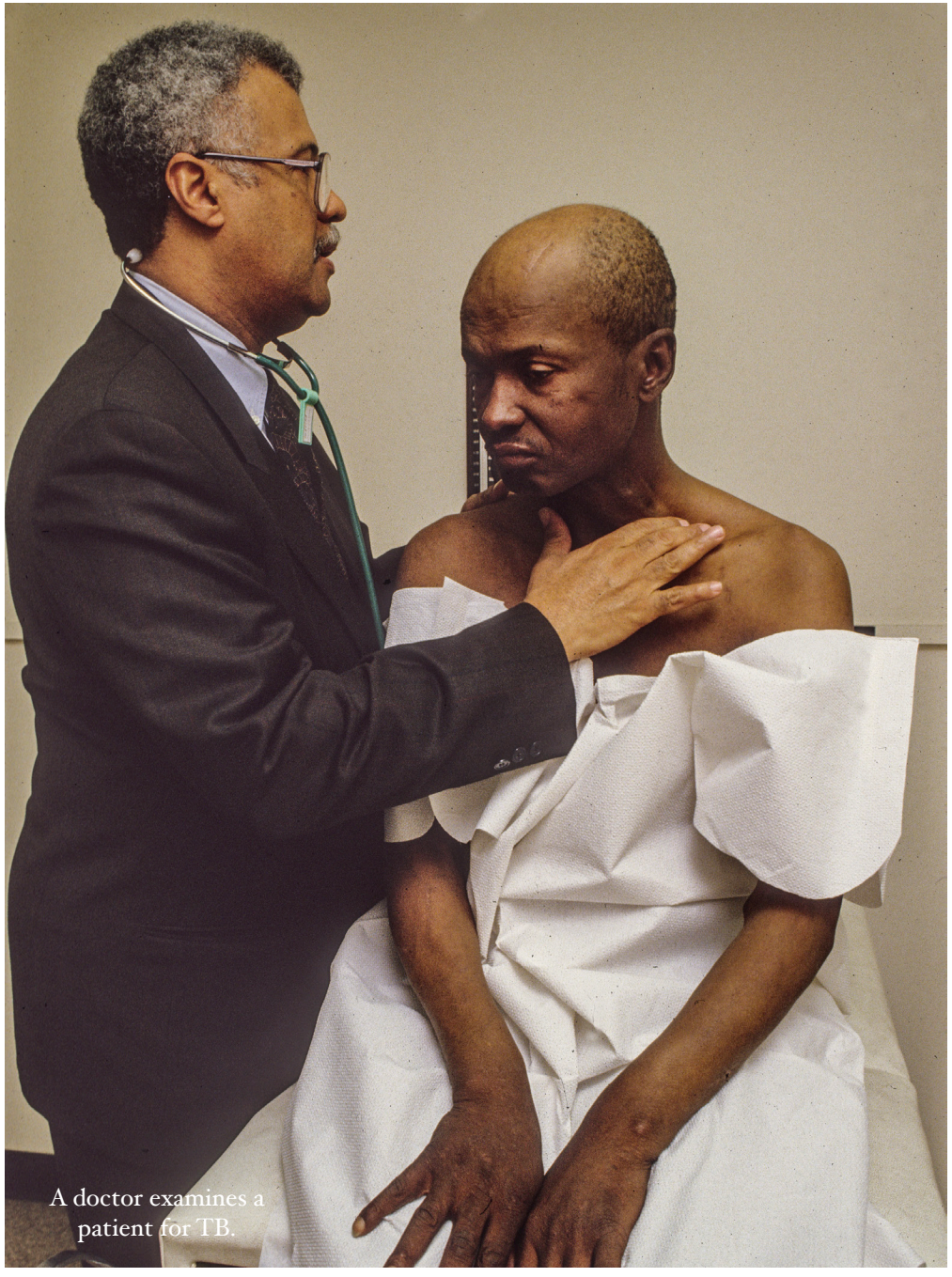
Lattimore TB Clinic

Lattimore Tuberculosis Clinic

Waiting to be seen at the Lattimore TB clinic.

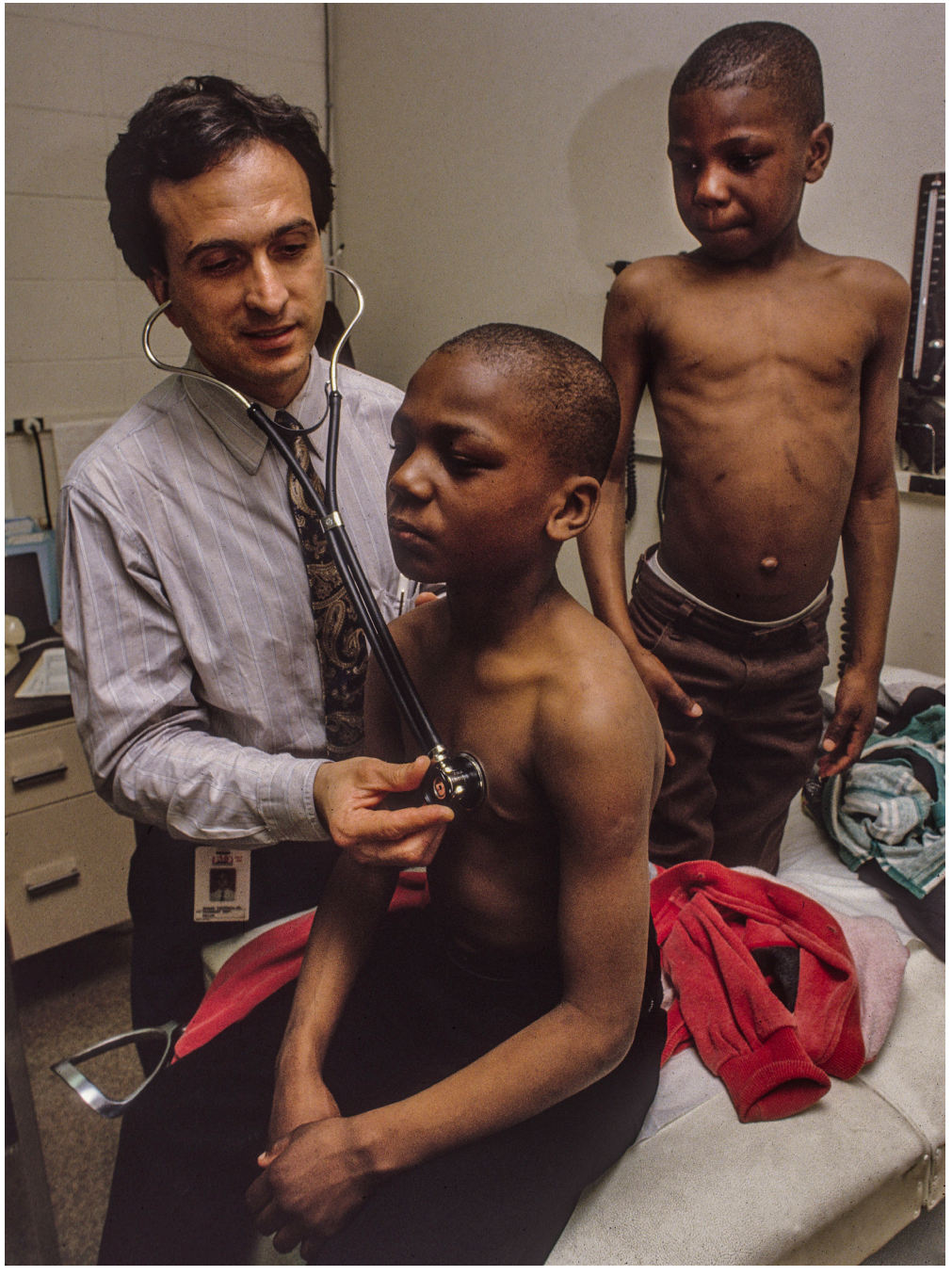
TB is preventable. The infection is detectable with a one-time test, and treatment can remove TB from the body. The United States Preventive Services Task Force (USPSTF), the leading national agency for assessing prevention, recommends screening for latent tuberculosis infection (LTBI) in populations at increased risk and has established LTBI testing and treatment as a standard of care.[7]

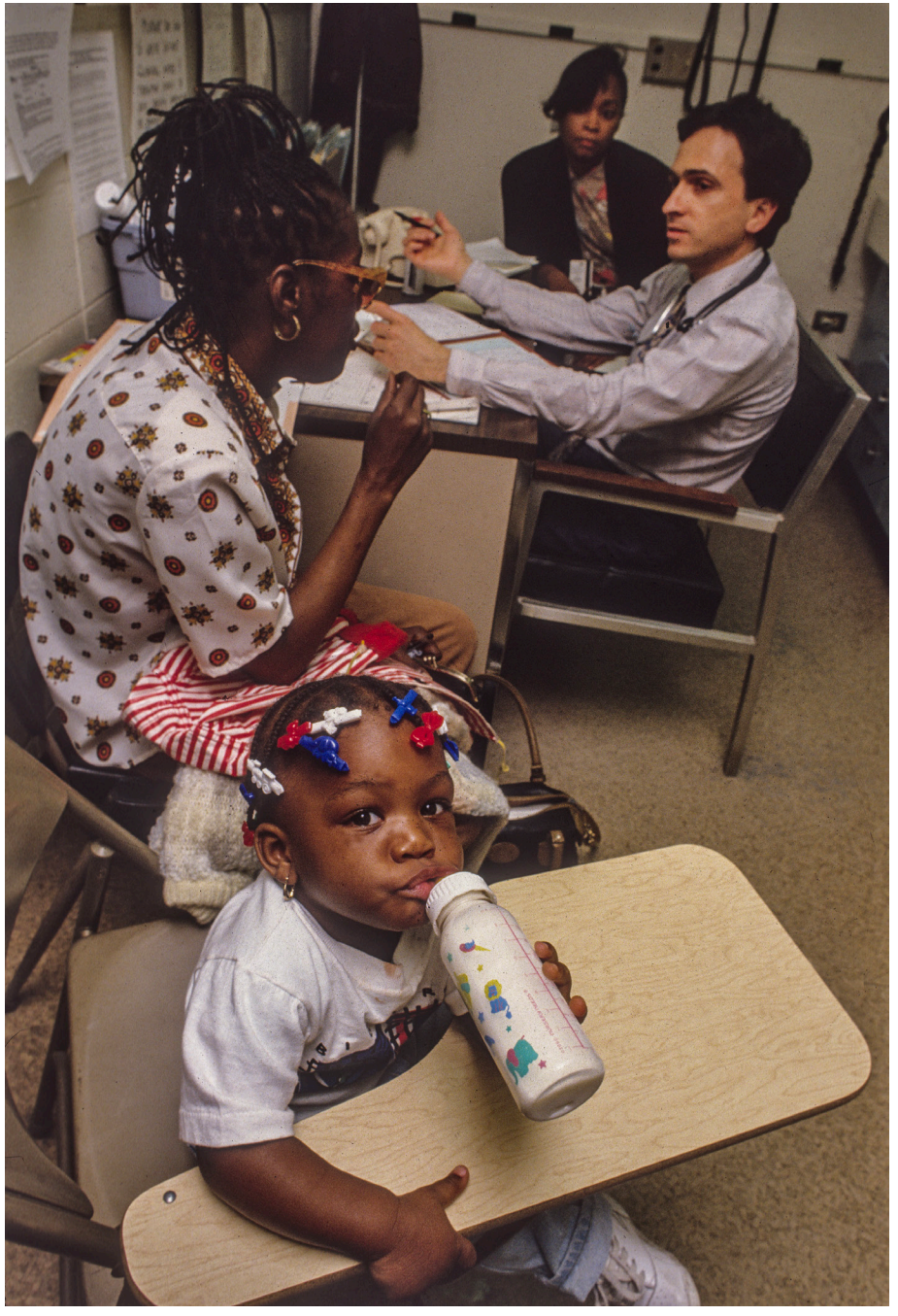
Prevention is far less costly than TB treatment. Targeted testing and treatment are cost-effective.[8] The cost to prevent TB for one person is low ($857) compared with the costs of diagnosing and treating one person with active TB disease. Because TB is contagious, preventing TB also means preventing potential transmission of TB to the patient's family and others.[9]



A doctor examines a patient for TB.

A child is examined at the Lattimore TB clinic.





A doctor confers with a father after examing his son.

Mobile TB Units

To address the prevention problem, many states are now deploring Mobile TB Detection and X-ray units.

The vehicles are parked in designated areas and the community is made aware that these units are available and free to the public.

Research & Development

Lab research at University Hospital.
Newark, NJ

Research & Development

Global funding for TB R&D was $1 billion in 2021 and $1.03 billion in 2022– barely half of the $2 billion annual target agreed at the 2018 HLM. Current R&D funding levels are insufficient to produce and roll out the new tools needed to find, treat, and prevent the 10 million new cases of TB each year.

Research is essential. The CDC uses this funding to conduct clinical trials, epidemiologic studies, behavioral studies, and other research that contributes to new diagnostics, treatments, and approaches for eliminating tuberculosis.

The report released by the Treatment Action Group (TAG) and the Stop TB Partnership has found that cumulative funding for tuberculosis (TB) research and development (R&D) over the past five years has fallen shockingly short of commitments. The $4.7 billion funding total reached for the period 2018-2022 is less than half of the $10 billion pledged by world leaders at the United Nations High-Level Meeting on TB (HLM) in 2018.

Tuberculosis remains the leading cause of death globally by an infectious disease, with 1.3 million people dying and 10.6 million falling sick from the disease in 2022. TB science stands on the precipice of delivering game-changing new tools to eliminate TB, including new vaccines, but development to date has been severely delayed by ongoing under-investment.

Tuberculosis Research Funding Trends 2005 – 2022

based on a survey of biomedical research funders conducted by TAG with support from Stop TB Partnership. Key findings from the report include:

- Global funding for TB R&D was $1 billion in 2021 and $1.03 billion in 2022 – barely half of the $2 billion annual target agreed at the 2018.
- Current R&D funding levels are insufficient to produce and roll out the new tools needed to find, treat, and prevent the 10 million new cases of TB each year.
- Spending on TB vaccine R&D was a whopping 80% short of targets

set by Stop TB Partnership's 2018–2022 *Global Plan to End TB*.

- Funding for drugs and diagnostics lagged behind targets by 75% and 35%, respectively.
- Funding from just two organizations – the United States National Institutes of Health and the Bill & Melinda Gates Foundation – accounted for over half of all expenditures on TB research in 2022. [10]

TB Outreach Program

Nurse Washington confers with her supervisor before seeing her patients.

In certain urban areas within the United States, TB moved into a crisis phase. The advent of the Covid-19 pandemic complicated all treatment programs. Immediate action became paramount.

The communities most affected were those with high poverty rates, crime, and drug-infested neighborhoods, homelessness, lower educational levels, individuals with mental disorders, and poor access to medical care facilities. This became more problematic when dealing with non-compliant TB patients who did not follow their treatment regimen.

Different healthcare organizations have used several methods to address this issue. One approach, used in Newark, NJ, has shown positive results. The TB Outreach Program, under the umbrella of the New Jersey Medical School National Tuberculosis Center, designates a healthcare worker to track, visit, and administer a patient's daily medications.

Each morning, Diane Washington, RN, would put together a package of the medications needed for her assigned 10-12 patients. She would then drive to the locations where these individuals resided, bringing them their dosages of drugs, but more importantly, watching to make sure the medications were taken. This is particularly important with multidrug-resistant TB (MDR TB) patients.

These locations can be residential houses, apartments, homeless shelters, and even homeless camps. At times, Washington had to venture into crime and drug areas that were dangerous to her safety. After she completes her assignment, she returns to the TB clinic and continues to work with other doctors and nurses treating the patients who come to the hospital to get their meds.

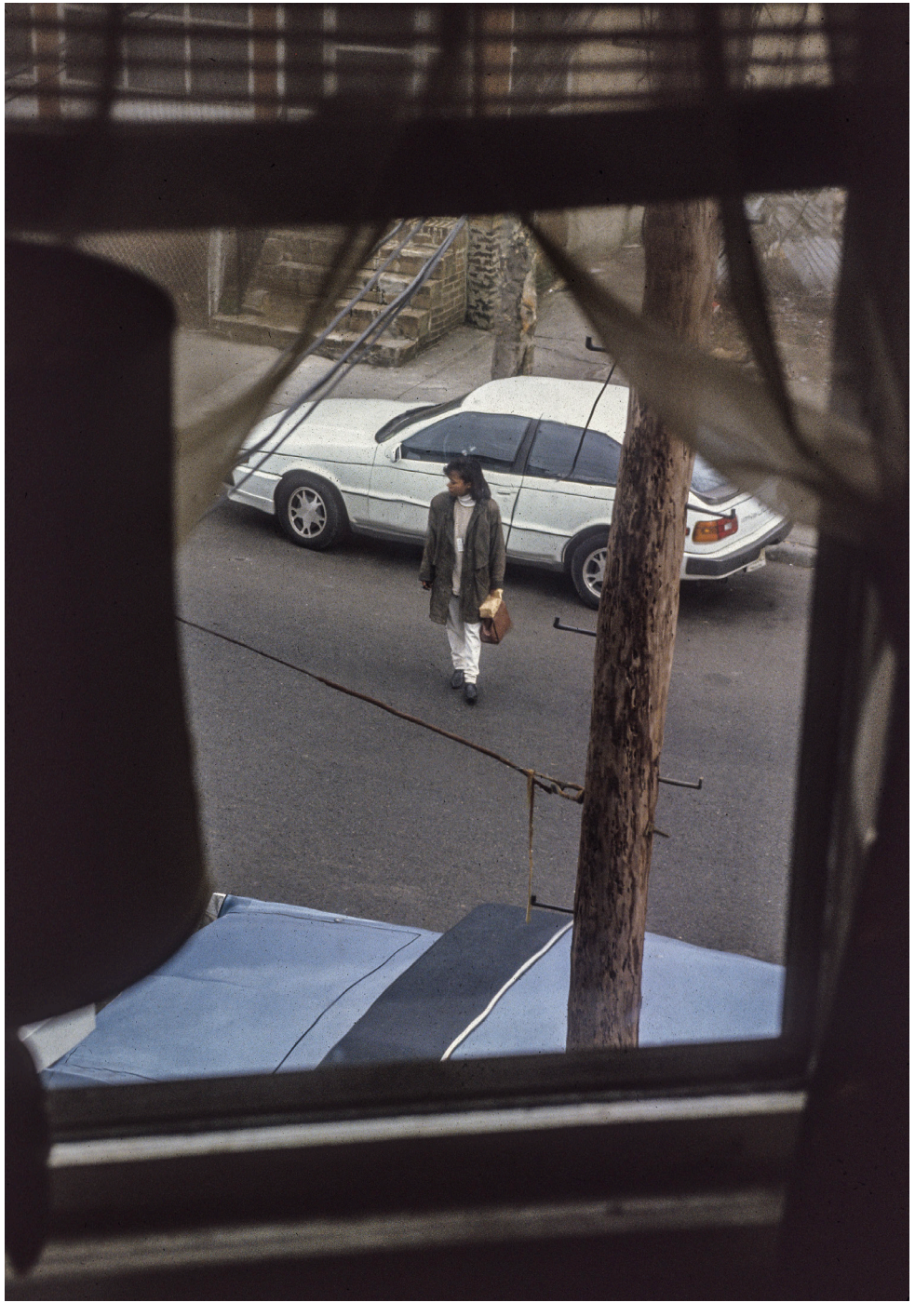
Men's Homeless Shelter

TB has been found to be rampant in homeless shelters.

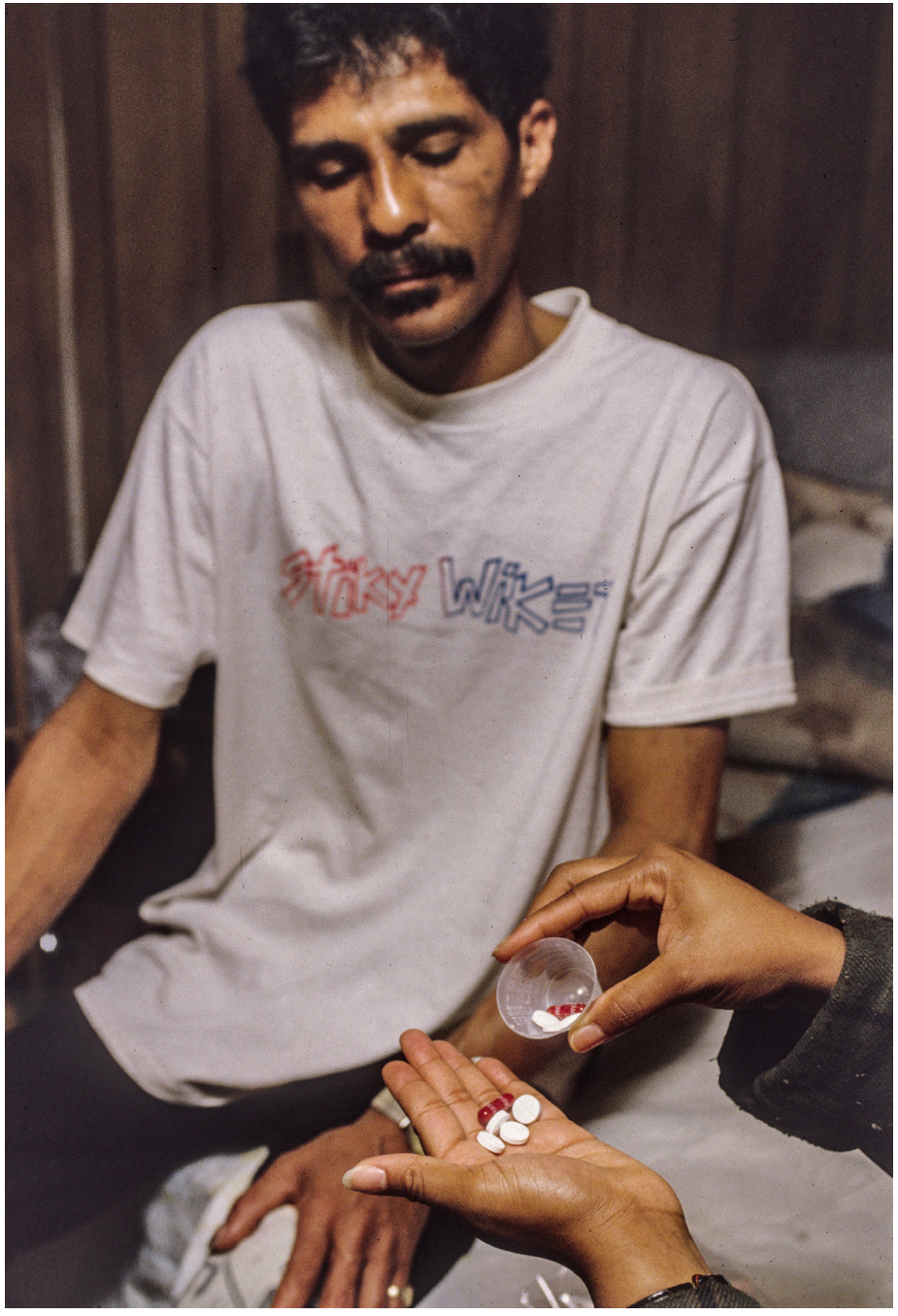

I WANNA
SEX YOU
UP


ATTENTION
NEWARK POLICE
ARREST ANYONE LOITERING
ON THESE PREMISES
OWNER WILL PROSECUTE
MARY JONES


But Don't Worry.
He Cooks. He Cleans.
He Kicks Some Butt.
HOME ALONe
A Family Comedy Without The Family.



Washington's work is helping to stem the spread of TB.



The success of the program has a lot to do with Washington's connection with the community and her relationship with her patients.

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Richard Falco

For the past thirty-five years, Richard Falco has worked as a photographer, documentary filmmaker, journalist, and educator. He has traveled extensively throughout the world, working on assignments in Asia, Africa, Europe, and the United States. His photographs have appeared in major publications. Clients include *Time Magazine, Newsweek, Business Week, New York Times, Life, National Geographic Society, People, Geo, New York Magazine, Stern, and U.S. News & World Report*, to name a few.

There are six published books of his work: *To Bear Witness/September 11, Medics: A Documentation of Paramedics in the Harlem Community; Hunger and Rice in Asia; Witchcraft: Ancient Traditions Alive in Salem; Water, Wild & Light: The Dingle Peninsula, and Autumn Madrigals.*

Mr. Falco is the director of the films, *Crossroads: Rural Health Care in America; Project Music: Not A Single Dissonant Note; and Holding Back the Surge, and the executive producer of the films Josie: A Story About Williams Syndrome and Dorothea's Tears: The State of Mental Health Care in America.* He is also the editor & chief of Witness Magazine.

He has exhibited in the United States and abroad. Exhibitions include International Center of Photography, NY; Corcoran Gallery, Washington, DC; Nikon Galleries, Tokyo; New York Historical Society, NY and others.

He is a winner of the *International Media Award*, a 15-time award winner for *Excellence in Journalism* from the Society of Professional Journalists, and an *Award for Excellence* from the Society of Publication Designers.

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