data appear to be "all of a piece"—i.e., internally consistent, and consistent with what we know about other drugs. Finally, the accumulating data attesting to the efficacy of the World Health Organization multidrug therapy (WHO MDT) are entirely reassuring.

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Dr. Almeida Replies

TO THE EDITOR:

I thank Dr. Levy for his interesting comments on an earlier submission ([1]). I believe he is wise to choose daily (not monthly) rifampin for himself. He is right in stating that "persister" *Mycobacterium leprae* occur regardless of the regimen used. However, this will be poor comfort to patients who are on monthly rifampin. It is nonpersister *M. leprae,* rather than "persisters," that are worrisome ([3]). Monthly rifampin is far less effective than daily rifampin against nonpersister *M. leprae.*

In passing, I am sure that Dr. Levy has persuaded himself adequately of the relevance of mouse foot pad findings to human therapy ([6]). Particular mouse foot pad findings may be inconvenient, but that is surely no reason to selectively discard them.

Dr. Levy seems to draw comfort from the record of WHO-MDT, based largely on self-healing patients and those already smear-negative after previous treatment. Even placebos might have a fair measure of success under those circumstances. It is more meaningful to analyze results among previously untreated, smear-positive lepromatous patients, when a less comforting picture might emerge ([7, 8]).

Let us consider rifampin and cost-effectiveness. Daily rifampin is effective and the single initial dose of rifampin gives a surprisingly high initial kill ([2, 4, 5]). However, monthly rifampin appears no more effective than daily dapsone or clofazimine ([2, 4, 5]). If rifampin is continued beyond a single initial dose, it should be given daily or not at all. Monthly rifampin appears superfluous.

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Leprosy—Economy—Environment; Might We Predict Leprosy Incidence from this Point of View?

TO THE EDITOR:

It is known that direct contact is not an important element in leprosy infection since many who frequently have contact with leprosy patients (such as leprosy doctors) do not have a high leprosy incidence under conditions which offer no specific protection against the disease. On the other hand, there is a higher leprosy incidence in the family of leprosy patients compared to families without a history of leprosy. Even though multidrug therapy (MDT) is a powerful tool to cure active patients, MDT also might not be an important element for reducing leprosy incidence because leprosy in Norway was eradicated before any antileprosy drug was found. No one knows with certainty the source of leprosy in nature or how it reaches the human body. It is very difficult to predict leprosy incidence without knowing the micro-mechanism of the disease.

There is a problem which has puzzled us for a long time. Why do we not know more about the source of leprosy in nature for such an old disease with over a thousand-year history in such a high civilized society with good communication, numerous precise instruments and superb techniques (some of those can even be used to do experiments at the molecular biology level), and a multitude of skilled doctors? This situation might suggest that leprosy is a disease greatly different from other diseases so that we cannot use the methods applied to other diseases for research into leprosy. In other words, we are used to researching diseases on the micro-mechanism level. Perhaps we need to try to do leprosy research on a macro-mechanism level.

It is well known that a higher leprosy incidence usually occurs in poor economic countries and a lower leprosy incidence occurs in developed countries. Leprosy in China has a history of over 2000 years, but its incidence has decreased greatly since 1949 when the People's Republic of China was founded. Meanwhile, economic conditions of China have improved. In the past 10 or more years, Guangzhou District, with an economic growth rate of over 10% per year, has become one of the economically fastest growth areas in the world. This makes it possible to make a correlation analysis between the economy and leprosy incidence. The Figure shows that leprosy incidence decreases along with increases in the economy.

We tried to make a correlation analysis between leprosy incidence and the economy, and the results show $p\{|r = -0.7311| > r = 0.456\} = 0.01$ for Guangzhou City. If a logarithmic transformation was used for the leprosy incidence, the result is $p\{|r = -0.957| > r = 0.456\} = 0.01$ for Guangzhou City. Thus, there is a high inverse cor-