Public Comment to FDA

Collection, Analysis, and Availability of Demographic Subgroup Data for FDA-Approved Medical Products Part 15 Public Hearing

April 1, 2014

FDA White Oak Campus
10903 New Hampshire Avenue, Building 31, Room 1503A
Silver Spring, Maryland 20993

COMMENTS FROM HO LUONG TRAN, MD, MPH

To protect and advance the public health by ensuring safe and effective medical products, FDA needs to ask the question: Are Racial/Ethnic Differences Important in Drug Development?

And the answer is yes.

The potential causes of differential responses to drug therapy include the physiological and genetic differences that interfere with the pathogenesis of the disease, the pharmacokinetics, the metabolism and the occurrence of side effects. Cultural and environmental differences, food, stress and socio-political factors are as important to consider when developing new drugs.

By 2020, ethnic and racial populations will represent more than 40 percent of the country's population. In some cities and metropolitan areas their proportion of the population has already increased to over 50%. The 1997 OMB race and ethnicity standards define Asian Americans as individuals having origins in the Far East and Southeast Asia, or the Indian subcontinent, including Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. 2010 Census showed that there were 17.3 million Asian Americans and

1.2 million Native Hawaiians and Pacific Islanders with Asian Americans being one of the fastest growing racial or ethnic groups.

A first example to the yes answer is hepatitis C infection. Evidence based has shown that the disease affects 170 million cases worldwide and being one of the leading causes of cirrhosis in North America and Asia. The recommended treatment with peg-interferon α and ribavirin is well known about many patients with European-ancestry having higher cure rates than those with African-ancestry, sometimes with a twofold improvement.

A second example is the definition of obesity with a BMI equal or higher than 30 kg/m2, a key risk factor of diabetes. However, study has shown that South Asian, Chinese, and African Americans developed diabetes at a higher rate, at an earlier age, and at lower ranges of BMI than non Hispanic Whites, and that the association between excess body fat and diabetes risk varies across ethnic groups. These findings highlight that public health and quality improvement efforts may be more effective by targeting ethnic subgroups separately.

A third example is diabetes type 2 that has become a worldwide epidemic with 95 millions individuals with diabetes in China and 83 millions in India. The most common form around the world, especially in Asians and Pacific Islanders, is Type 2. Although Asians generally have a lower rate of overweight and obesity compared to other ethnic groups, they still show high prevalence of diabetes that could be explained by fat deposit with weight gain in the intra-abdominal area.

Diabetes type 1 in Asian and Pacific Islander populations is 5 to 10 times lower than non Hispanic Whites. The latter group has a 90% rate of positive auto antibodies to beta cells, GAD or insulin in contrast to 30% in Asians with diabetes type 1. It makes it more difficult to differentiate Type 1 and Type 2 diabetes in the diagnosis for Asians and Pacific Islanders, especially 30 years or less, as the differentiating factors such as body mass index and autoantibody positivity are not so evident.

One last example is that less than 5% of trials participants are non-white and less than 2% of clinical cancer research studies focus on non-white ethnic or racial groups, even twenty years after Congress mandated the inclusion of minorities in researches funded by NIH. Clinical trials in diverse populations can help understand the biology of disease, and why a drug may produce a higher response rate and higher toxicity in one group than in another. This under representation compromises the quality of care, healthcare outcomes, and the economic viability of families and communities.

To inform and educate with accurate, science-based information on medical products, FDA needs to consider the challenges presented by various elements of diversity that the underrepresented subpopulation, including racial subgroups encounter.

- Diversity in Culture
- Diversity in Socio Economic Status

- Disparity in Level of Education
- Disparity in level of health insurance
- Disparity in low English proficiency

In conclusion, multiple factors including genes, environment, cultural differences and socio-political disparities can affect efficacy, doses and side effects of a drug. Thus, treatment trials in US need to include adequate number of minorities which can provide guidelines for the safe and effective use of a drug or treatment in each significant minority populations.