ABSTRACT: 2013 ELAM Institutional Action Project Poster Symposium

Project Title: Establishment of the Einstein Center for Prematurity Research (CPR)

Name and Institution: Judy Aschner MD; University Chair of Pediatrics, Albert Einstein College of Medicine (AECOM) of Yeshiva University; Physician-in-Chief, Children's Hospital at Montefiore

Collaborators: Betsy Harold MD, Professor of Pediatrics (Infectious Diseases), Microbiology and Immunology, Obstetrics & Gynecology and Women's Health; Director of the Center on "Translational Prevention Research" at Albert Einstein College of Medicine

Background, Challenge or Opportunity:
Each year, 15 million infants are born preterm and more than 1 million infants die worldwide from complications of prematurity. In the US, the rate of preterm birth (PTB) has increased by 35% in the past 25 years. Surviving preterm infants face the risk of lifelong health challenges. PTB costs the US more than $26 billion annually. There is a high rate of PTB and infant mortality among the population served by the faculty of the AECOM. The AECOM wishes to capitalize on an opportunity to partner with the March of Dimes to establish a transdisciplinary research center focused on the prevention of PTB.

Purpose/Objectives:
(1) To establish an administrative and fiscal infrastructure to foster innovative, transdisciplinary research among accomplished basic science, clinical and translational investigators to address the intractable problem of PTB. (2) To partner with the March of Dimes (MOD) to create a MOD/Einstein-supported Center for Prematurity Research.

Methods/Approach:
(1) Hold a series of ½ day retreats to inform faculty from diverse fields about the epidemic of PTB, the risk factors and gaps in knowledge about the etiology of PTB and to brainstorm about novel approaches to prevent PTB and improve the outcomes of pregnancy; (2) Identify funds for innovative, transdisciplinary pilot projects; (3) Encourage participation of junior faculty and post-doctorial fellows in novel research initiatives to reduce the burden of PTB locally and globally.

Outcomes and Evaluation:
The first Einstein Prematurity Research Center retreat will be held on Wednesday, April 10th. An invitation to participate was extended to 35 investigators with an overwhelmingly enthusiastic response. The participating faculty represent multiple and diverse disciplines. Among them are some of the most accomplished clinical and basic science investigators at the AECOM, the majority of whom have not previously applied their expertise or tools to the problem of PTB. Success will be defined by the launch of new collaborative and transdisciplinary research projects, receipt of new extramural funding, recruitment of promising young investigators to the field of PTB prevention research and, ultimately, the establishment of a MOD Transdisciplinary Center for Prematurity Research at the AECOM.

I wish to acknowledge Dean Allen Spiegel for his support of this IAP and new AECOM research initiative.

Einstein-Montefiore Center for Leadership In Prematurity Studies (ECLIPS)

Judy L. Aschner, MD, Professor & University Chair of Pediatrics, Albert Einstein College of Medicine
Collaborator: Betsy Herold, MD, Professor & Vice Chair for Research, Department of Pediatrics, Director, Translational Prevention Research Center

BACKGROUND

Preterm birth (PTB) is a global human health problem. Worldwide, 15 million premature babies (1 in 10) are born each year. Africa (11·9%), North America (10·6%), and Asia (9·1%) have the highest rates of PTB (Fig 1).

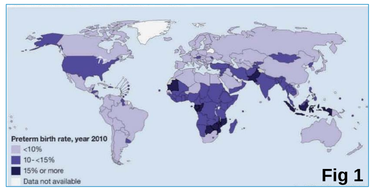

Fig 1


Fig 2

The rate of PTB in the US has increased by 35% in the past 25 years, exceeding that of other developed nations. PTB imposes high human and societal costs. More than 1 million infants die each year from complications of prematurity. Many surviving preterm infants face lifelong health challenges; infants born <32 weeks gestation account for 1-2% of live births, but 60% of infant mortality and 50% of all long-term neurological morbidity (Fig 2). PTB costs the US more than $26 billion annually (IOM, 2005).

The biological and sociological underpinnings of PTB are poorly understood; prevention has proved elusive. Risk factors include prior PTB, and African American race, suggesting a genetic component. Other risk factors are shown in Fig 3.

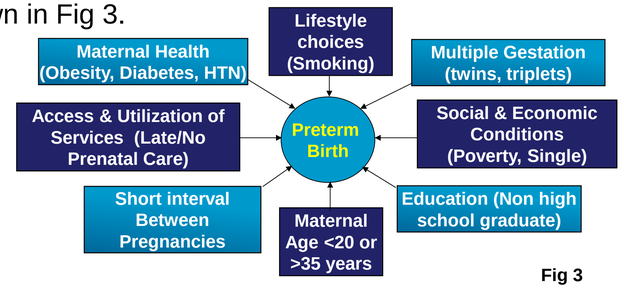

Fig 3

OPPORTUNITY

The Bronx has the highest rate of PTB of any borough in NY (Fig 4 & 5).

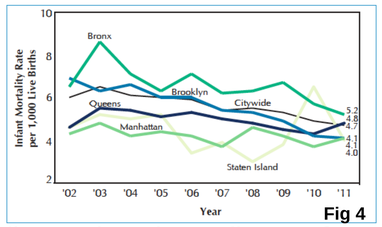

Fig 4

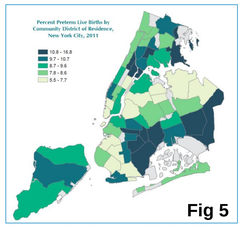

Fig 5

Albert Einstein College of Medicine (Einstein) is a premier research institution with strengths in basic biomedical, translational, epidemiological and behavioral sciences. The outstanding faculty investigators at Einstein have access to existing biorepositories, patient cohorts and state-of-the art technology. Einstein/Montefiore faculty serve a unique, high risk patient population with high rates of PTB.

OBJECTIVES OF THE PROJECT

Bring to bear the basic and translational research and clinical strengths of Einstein/Montefiore to prevent PTB and the sequelae of prematurity locally and globally. Facilitate interactions among world class investigators from diverse scientific disciplines along the continuum from fundamental mechanisms in human reproduction through novel interventions to prevent preterm birth and other adverse pregnancy outcomes. Optimally align institutional strengths to pursue research funding opportunities, with an emphasis on launching new transdisciplinary endeavors to make fundamental advances in improving pregnancy outcomes.

APPROACH & TIMELINE

January 8-14, 2013: Discussions and approval of the Dean to pursue establishment of a prematurity research center at Einstein in collaboration with Dr. Betsy Herold and the "Translational Prevention Research Center".
January 23, 2013: Initial meeting in NY with Dr. Herold to discuss holding a half-day retreat to introduce the concept to the Einstein scientific community.
February 14, 2013: Follow up meeting in NY about retreat logistics and invitees list.
March 2014: Extensive email communications, logistical planning, invitations and date/time established for the retreat.
March 30, 2013: I move to NY from Nashville, TN
April 1, 2013: My first day as faculty member and Chair of the Department of Pediatrics at Einstein /Montefiore.
April 10, 2013: Highly successful Prematurity Research Center retreat attended by 28 faculty from 15 different department/centers/institutes.

OUTCOMES & IMPACT

Retreat Outcomes: Excellent engagement of faculty, enthusiasm for establishment of the center, exchange of ideas and concepts for transdisciplinary innovative research. Opportunity for faculty from disparate disciplines to meet and learn about each other's research interests/expertise. Identification of need for pilot funding. Potential to impact an intractable human health problem.
Personal/Professional Impact: Excellent mechanism to introduce myself, my research interests and my commitment to transdisciplinary research collaborations to the scientific community at Einstein.

SUMMARY & NEXT STEPS

Despite a challenging timeline, in collaboration with my Vice Chair for Research, a highly successful retreat focused on prematurity was held 10 days after my arrival at Einstein. Although this IAP is still in its infancy, there is forward momentum. Next steps and challenges include sustaining enthusiasm, facilitating transdisciplinary collaborations, securing pilot funding for novel projects, and planning a symposium with invited speakers and research presentations by Einstein faculty.