Allergy & Asthma NETWORK

American College of Allergy, Asthma & Immunology

USAsthma SUMMIT 2023

Barriers to Medication Adherence in Asthma: The Importance of Culture and Contex

Elizabeth McQuaid, PhD

Vice Chair of Academic Affairs. Director of Child Psychology at Rhode Island Hospital/Hasbro Children's Hospital. Director of the Division of Clinical Psychology, Vice Chair of the Department of Psychiatry and Human Behavior at Brown University

Barriers to Medication Adherence in Asthma

The Importance of Culture and Context

Elizabeth L. McQuaid, PhD ABPP
Professor and Vice Chair of Academic Affairs
Director, Division of Clinical Psychology
Alpert Medical School, Brown University

2023 USAsthma Summit

Funding Sources

Hassenfeld Child Health Innovation Institute, Childhood Asthma Research Innovation Program (McQuaid & Koinis-Mitchell, PIs)

U01 HL 072438, Rhode Island – Puerto Rico Asthma Center (Fritz & Canino, PIs)

K24 HD058794, Ethnic Disparities in Medication Adherence Across the High School Transition (McQuaid, PI)

1RO1 NR008524, Community Partnership to Reduce Asthma Disparities (McQuaid, PI)

U01 HL138677, Rhode Island Asthma Integrated Response Program (RI-AIR; McQuaid & Koinis Mitchell, PIs)

Overview

- Health disparities and medication use in asthma
- Individual, interpersonal, institutional barriers that affect medication use and contribute to disparities
- What can you do in clinical practice to promote medication use?

Reminder: Race & Ethnicity are social constructs

"Race is not biological. It is a social construct. There is no gene or cluster of genes common to all blacks or all whites."

Angela Onwuachi-Willig, Professor of law at the University of Iowa College of Law

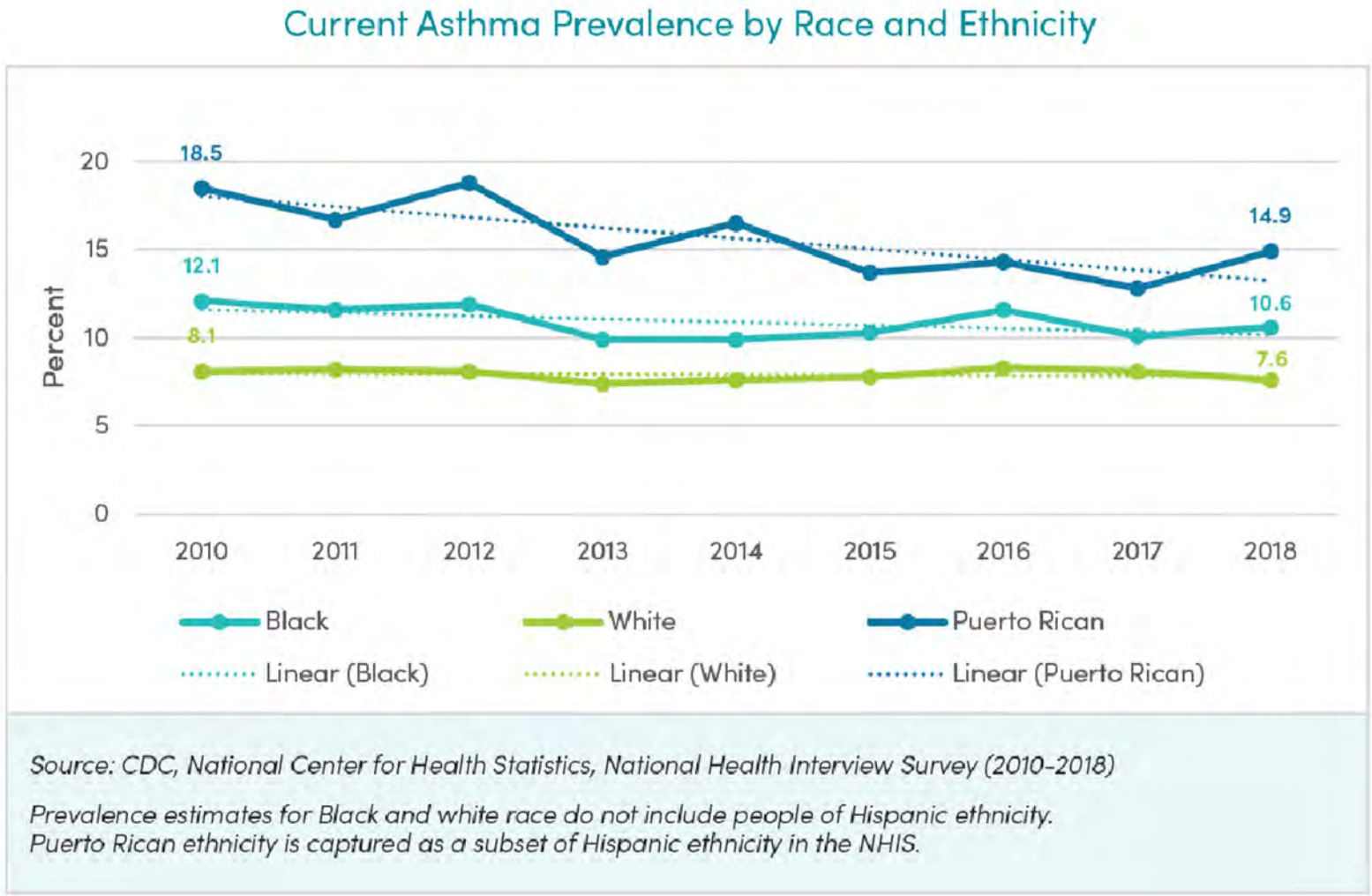
"Ethnicity is a complex social construct that influences personal identity and group social relations. Ethnic identity, ethnic classification systems, the groupings that compose each system and the implications of assignment to one or another ethnic category are place-, time- and context-specific."

Chandra Ford, Associate Professor at UCLA, and Nina T Harawa, Professor at UCLA

Reminder: Self-Identification is Critical

- Documentation of disparities relies on self-identification
- A lot of our "race" data are missing on NIH inclusion reports; our Latino participants skip the question about race as many identify only as "Latino".

Asthma is *more prevalent* and *more severe* among Black and Latino groups



CONSISTENT MEDICATION USE IS NECESSARY TO CONTROL ASTHMA BUT…

MOST PEOPLE DON'T TAKE MEDICATION DAILY

Across chronic conditions, people typically take ~50% of prescribed medication doses.

Medication Adherence in Asthma

In our work, children's medication adherence has been ~ 48-50% of prescribed doses.

A recent meta-analysis showed that across studies, young adults have even lower medication adherence, ~ 28%

McQuaid et al., 2003, J Ped Psych, 28, 323-333
McQuaid et al., 2021, J Ped Psych, 46, 578-587
Murphy et al., 2021, J Asthma 58:683-705

Key findings from our work:

Adolescents take less medication than younger children

We found adolescents with asthma knew more about asthma, took more responsibility for their care, had more self-efficacy about asthma management…yet took less medication.

Adherence declined during the high school transition, from 48.0% in eighth grade to 34.1% in tenth grade ($p < .01$).

Medication beliefs and medication use differ by family race and ethnicity

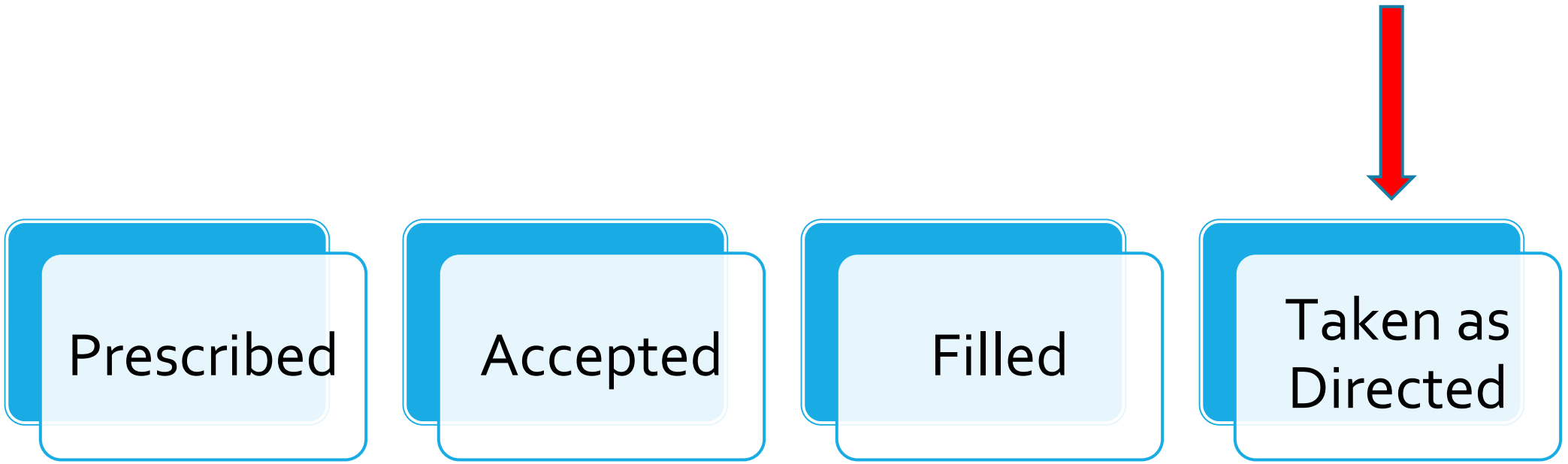
Parents of Black and Latino youth are *more concerned* about controller medications, and their children take less medication.

McQuaid et al., 2003, J Ped Psych, 28, 323-333
McQuaid et al., 2021, J Ped Psych, 46, 578-587

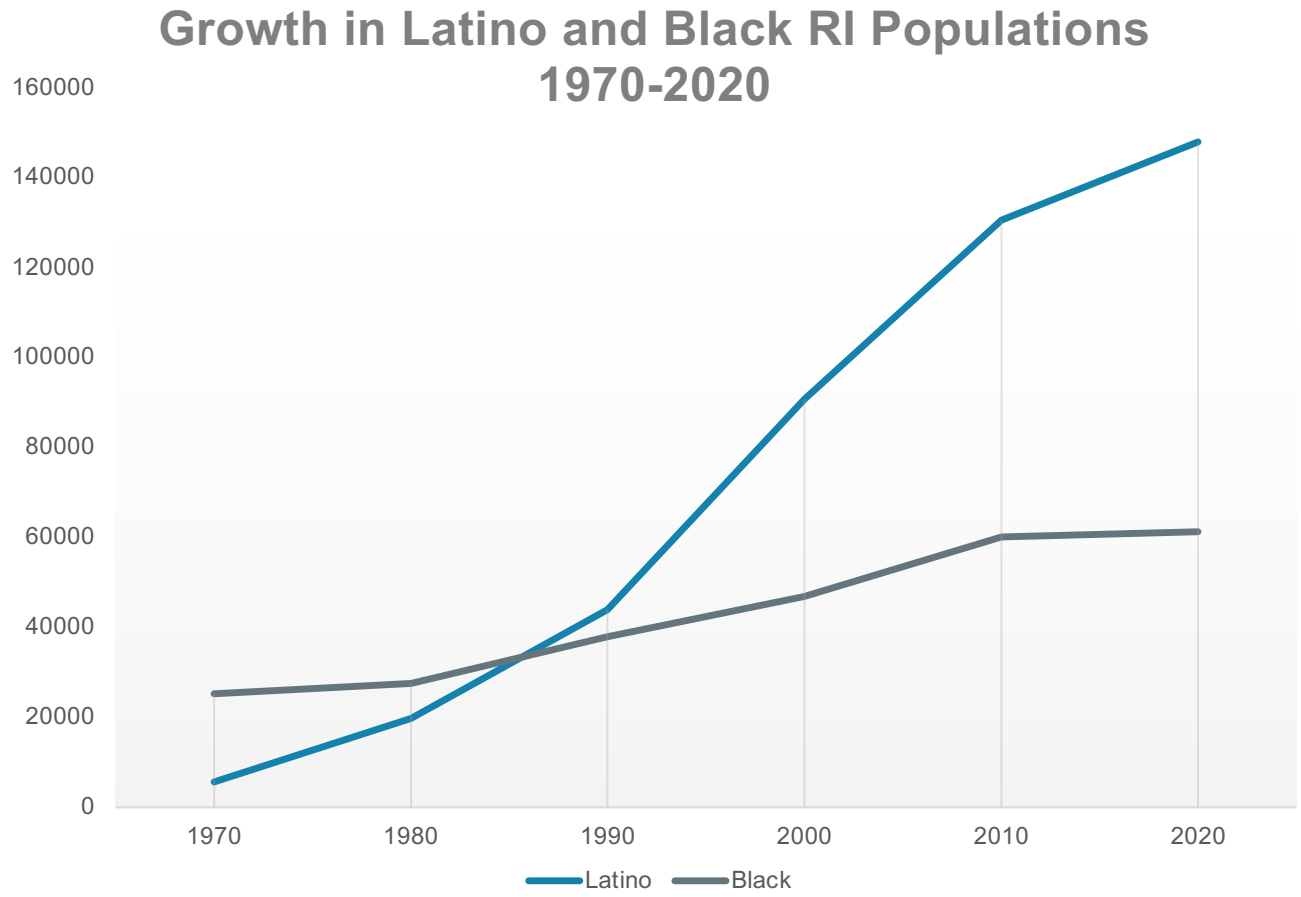
.

FOCUSING ON THE CLINICAL PROBLEM MAKES YOU FOCUS ON THE *PATIENT* AS THE PROBLEM

Medication use involves a complex set of behaviors



Rhode Island is becoming increasingly diverse



If we provide culturally tailored asthma education and adherence feedback, can we address medication concerns and improve adherence?

Community Partnership to Reduce Asthma Disparities

- RCT, enrolled 231 families of children with asthma (89% Latino, 11% Black)
- Randomized to Education or Education + Behavioral feedback and problem solving
  - Asthma Knowledge increased
  - Medication beliefs changed for Latinos with higher educational status
  - Everyone's asthma pretty much improved
- But NOT because we improved adherence

1RO1 NR008524 (McQuaid, PI)

Reasons why brief behavioral interventions don't increase medication adherence

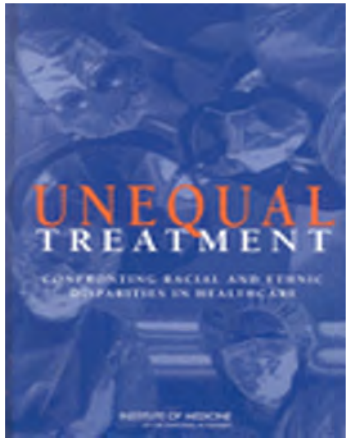
- Not everyone believes asthma controller medications work or are safe, and many people don't want to take them daily
- Economic and language barriers that affect communities of color may disproportionately affect medication access
- Even if you *have* the medication and *believe* it is important to take, behavior change requires sustained effort

Health Care System Factors

- IOM report (2002) documented significant variation in the rates of medical procedures (even the most routine) by race, and that racial and ethnic minorities experience a lower quality of health service

- "Although myriad sources contribute to these disparities, some evidence suggests that bias, prejudice, and stereotyping on the part of healthcare providers may contribute to differences in care."

- This disproportionate impact of COVID-19 on communities of color illustrated the harsh reality of these inequities

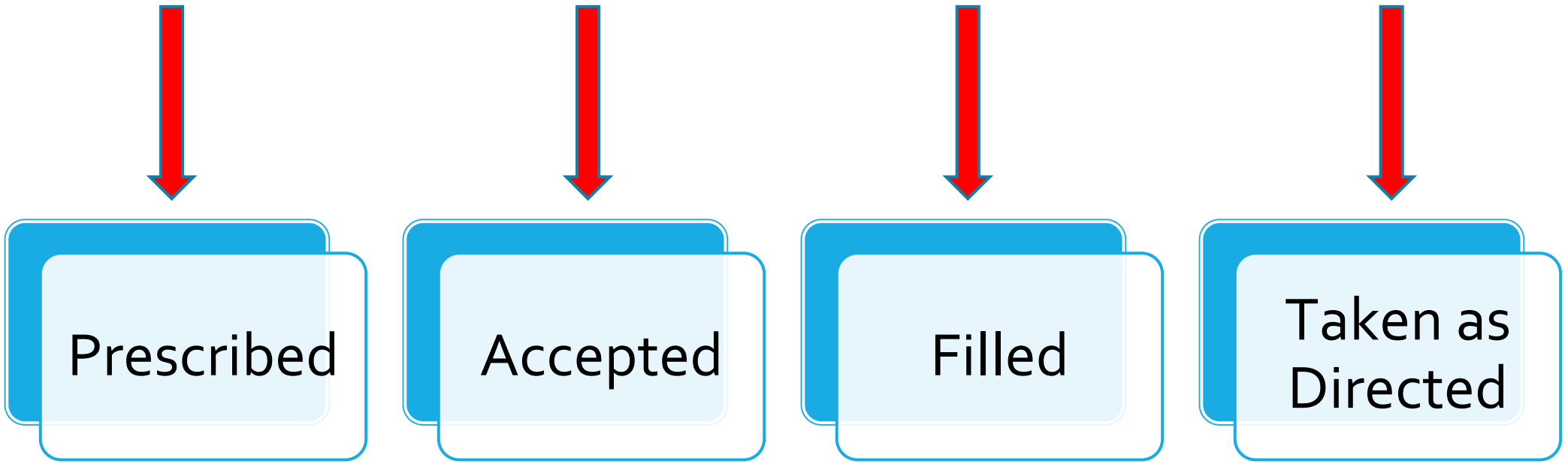


Provider-Patient Interactions

- Health care providers hold negative explicit and implicit biases against marginalized groups of people, including racial and ethnic minoritized populations
- Some evidence that primary care visits for Black patients contain more verbal dominance, and less patient-centered communication
- In one large pediatric survey
  - Parents of color were more often asked about violence, smoking, drinking, and drug use
  - Providers less often referred Hispanic and Black children to specialists (11% and 17%, respectively, compared with 22% for whites).

Flores et al., 2005, Pediatrics. 115, e183–e193.
Vela et al., 2022, Annu Rev Public Health . Apr 5:43:477-501.
Johnson RL, 2004, Am J Pub Health, Dec; 94(12):2084-90.

Institutional and Interpersonal Barriers



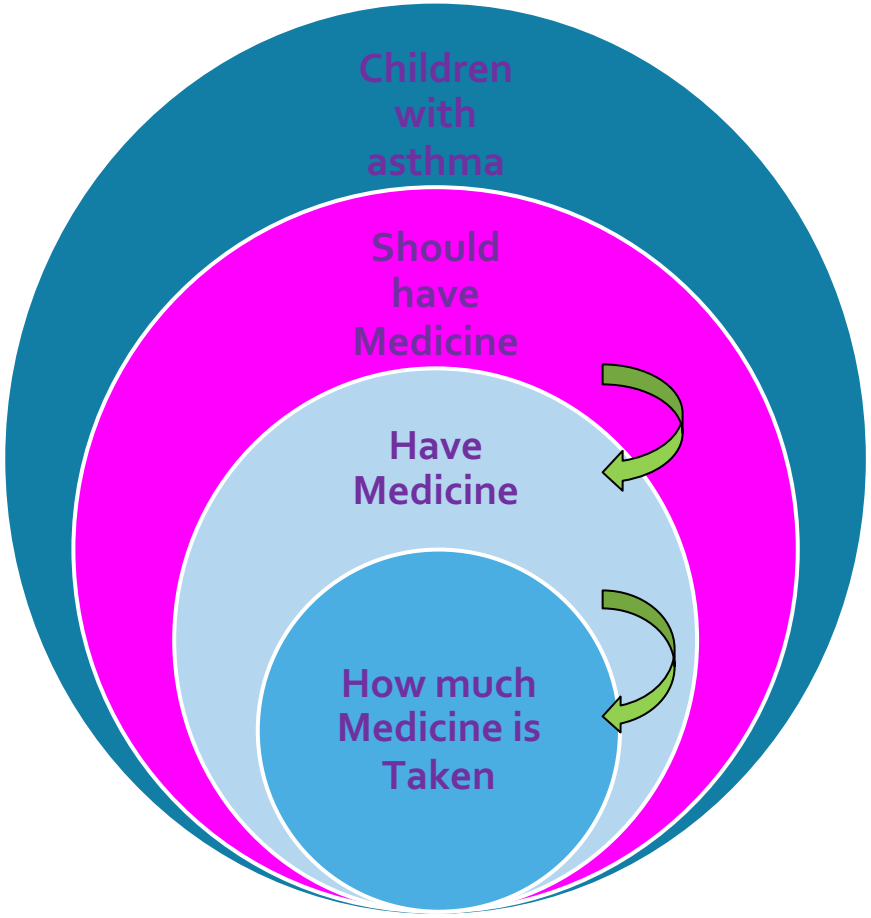
Rhode Island – Puerto Rico Asthma Center (RIPRAC)

- Participants: 805 children with asthma (age 7-17)
  - Non-Latino White (NLW) RI Children
  - Latino RI Children (Puerto Rican & Dominican)
  - Island PR Children

•Disparities in the diagnosis and management of pediatric asthma, and barriers to health care access for Latino families

PIs: Glorisa Canino, PhD & Gregory Fritz, MD

RI-PR Asthma Center: Medication Use and Adherence

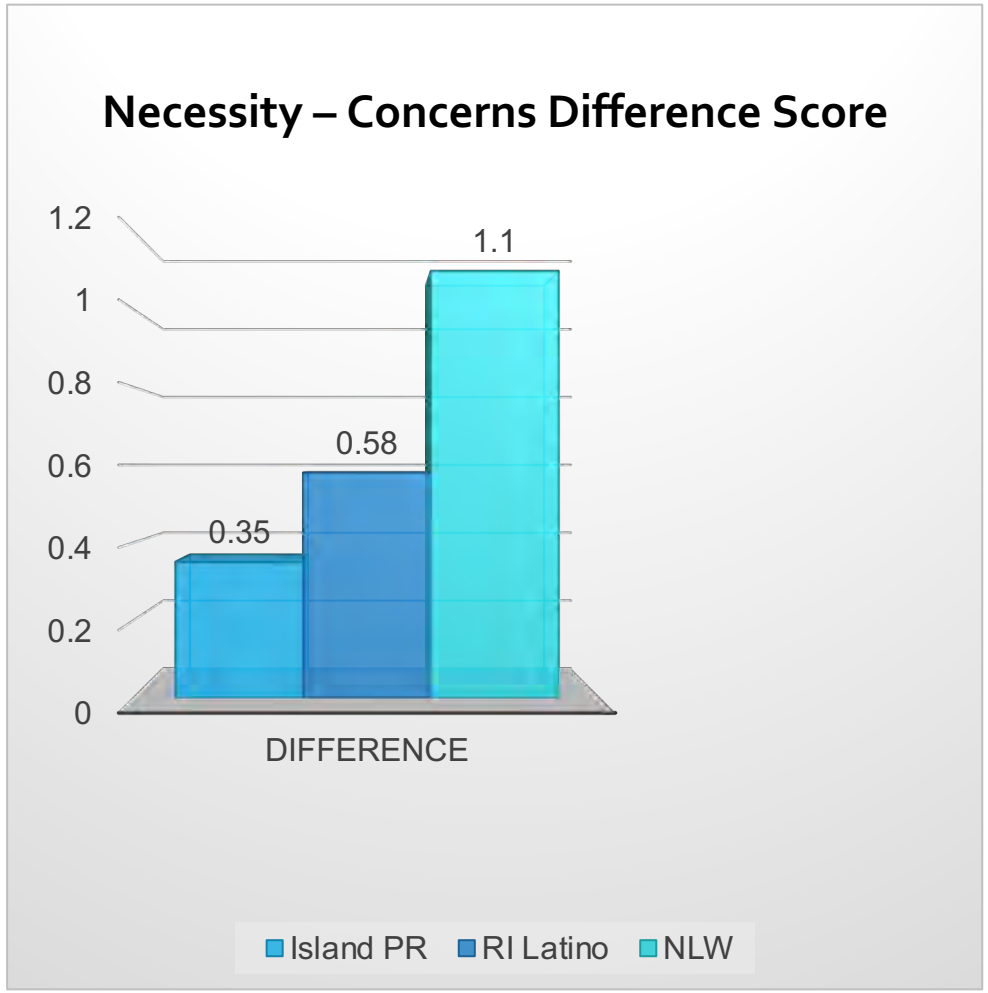


Our questions:

- What predicts the rates of controller medication use (reporting their child is "taking" the medicine) among Latino and non-Latino White families of children with asthma?

- What are the health care system, family, and individual factors relating to medication adherence behavior?

For Families whose Children Should be on Controllers, who has them?



530 children had persistent asthma

Latino parents were *more concerned* about asthma medications, and *less likely to think they were necessary*.

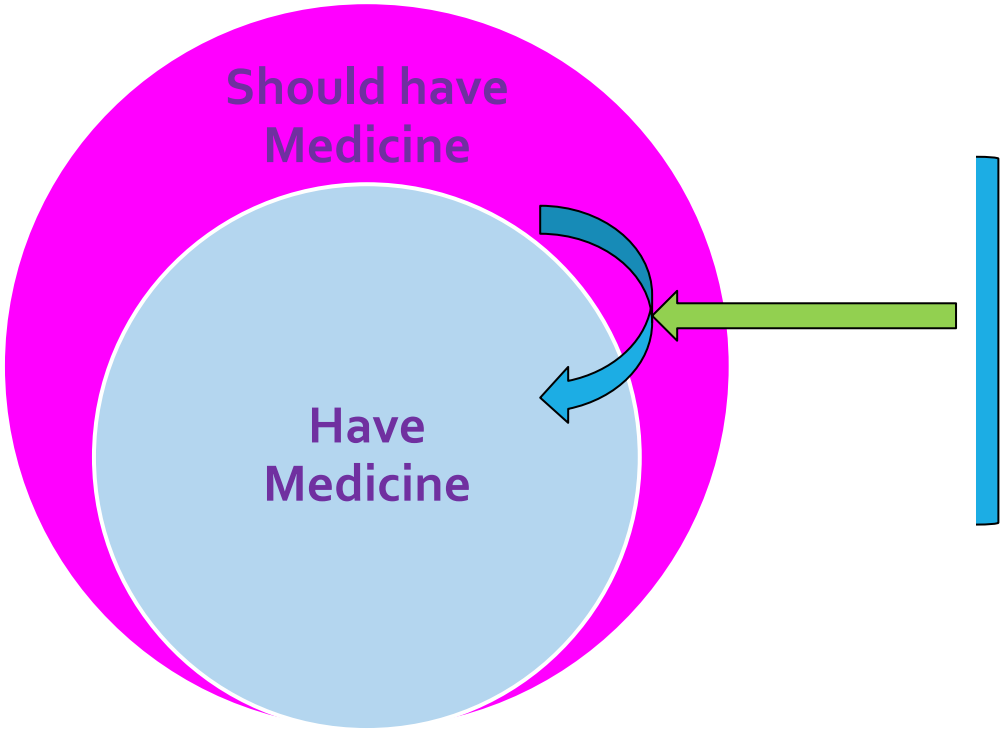
Island PR families reported more barriers (e.g., cost, transportation)

These attitudes predicted whether families had controller medicine for asthma

F = 29.43***, Post hoc tests: Island PR < RI Latino < NLW

McQuaid EL, Ped Pulm, 2009 Sep;44(9), 892-8.

Beliefs and Barriers predict if Families have Controller Medicine



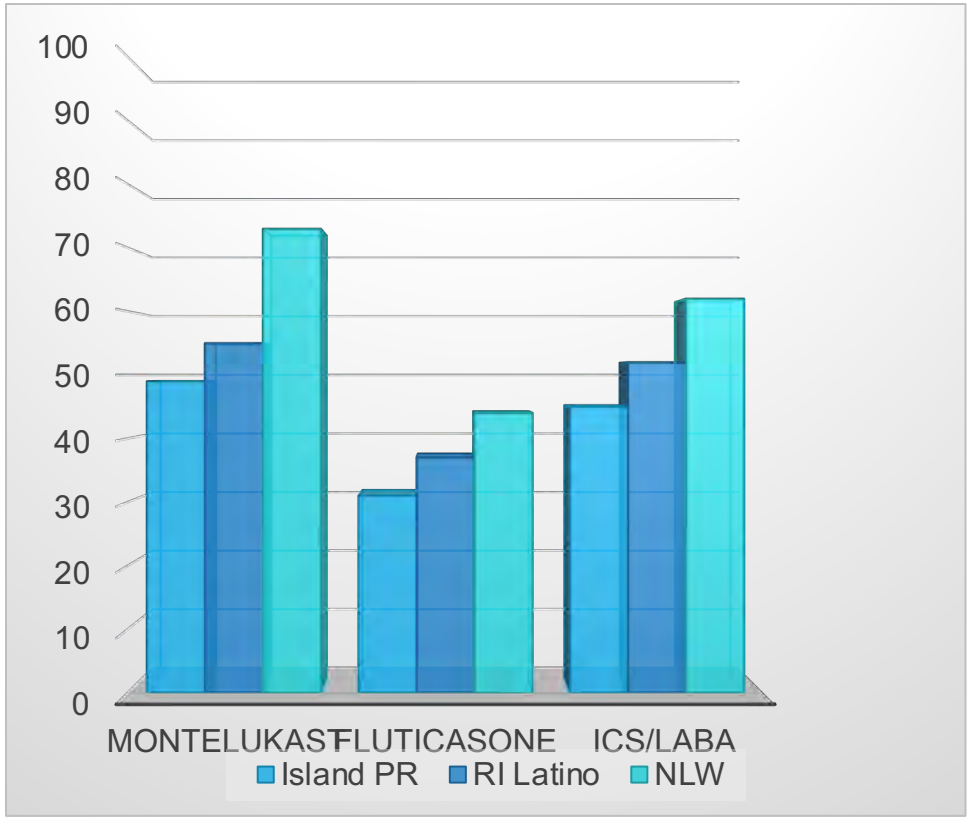
Parental beliefs about controller medicine

In PR, *barriers to obtaining medicine*

McQuaid EL, Ped Pulm, 2009 Sep;44(9), 892-8.

Among Children who *have* Controllers, what predicts use?

For each medication, Latino families (Island PR and RI) had lower rates of medication use than non-Latino Whites.



McQuaid, EL. Pediatrics 2012, Jun; 129(6) 1404-10

F = 10.12***
+

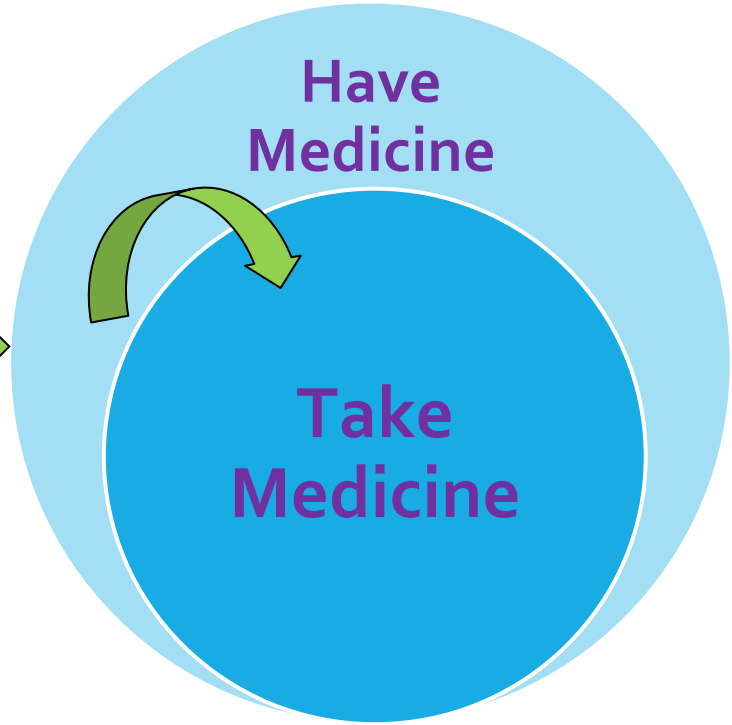
F = .71, NS

F = 2.19

Family Routines and Parental beliefs predict Medication use

Family Routines regarding medications

Parental beliefs about medication necessity



McQuaid, EL. Pediatrics 2012, Jun; 129(6) 1404-10.

Is a preference for natural remedies associated with lower adherence to traditional asthma medications?

Our qualitative data show Latino families use more natural remedies (aloe vera juice, praying) than non-Latino Whites.

Use of Natural Remedies Depends on Medication Access

In Puerto Rico use of natural remedies was related to *barriers to obtaining* medicine, and *not* related to medication adherence.

In RI, using natural remedies was p*ositively* related to medication adherence in Non-Latino Whites.

McQuaid, E.L 2014, Acad Peds, 14, 192-199

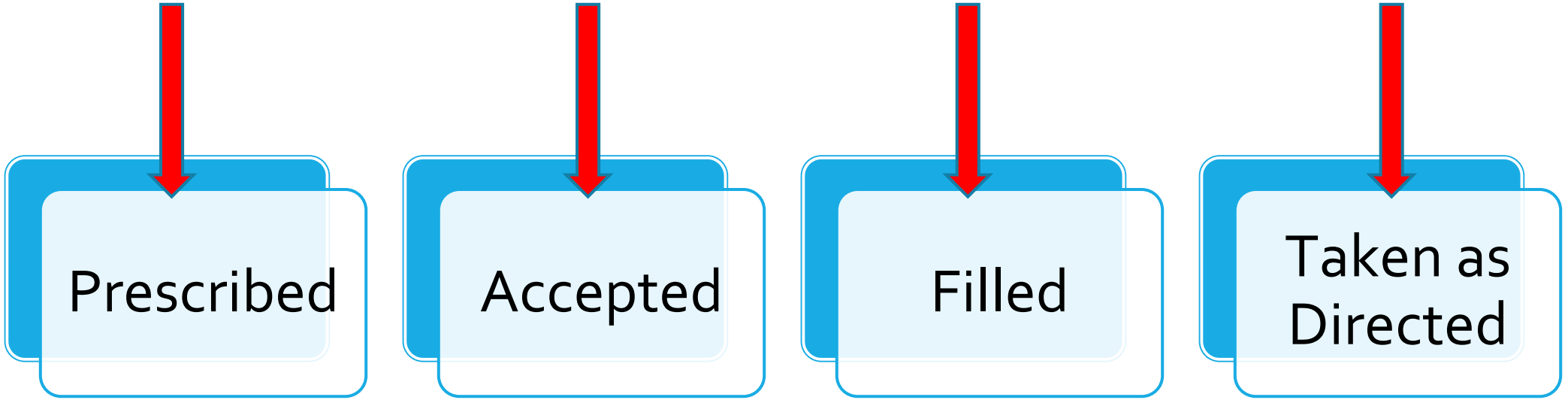
Institutional Barriers interfere with access among Medicaid Recipients in PR

In PR, Medicaid contracts were structured so that physicians received capitated payment that included costs of medication and specialty referrals.

This likely reduced the incentive to prescribe controller medications or refer to specialists.

A common practice was to send patients to the Emergency Department for medicine.

Institutional, Interpersonal, Individual Barriers Create Disparities



Medicaid Contracts discouraged prescriptions

Concerns about medicines

Barriers such as cost, language, transportation

Belief medicine is necessary, family management routines

Key points to remember:

- Cultural beliefs, some of which have historical roots in mistreatment, affect medication use.
- Focusing on the individual behavior may fail to capture *interpersonal* and *systems* barriers
- Patients may use herbal remedies when they cannot access medicine, or in conjunction with medicine.
- Developmental transitions (e.g., high school entry, early adulthood) pose more challenges for adherence

Having the Data

- There continue to be barriers to collecting data regarding race and ethnicity at local and organizational levels (e.g., provider practices, hospitals, health insurance organizations)

- Organizations need to collect data to detect potential disparities *within their communities* and be accountable for addressing this problem

Cultural Competence Training May Help

- In one study of Medicaid MCOs, pediatric asthma patients of practice sites with cultural competence initiatives were less likely to be underusing preventive medications
- In a study of four urban HIV clinics in the US, provider cultural competence ratings were associated with patients' receipt of antiretroviral treatment, adherence, and outcomes
- **CAUTION**…cultural competence training needs to address 1) the risk of reinforcing stereotypes, and 2) the contributions of institutional racism, white privilege, and class differences

Lieu TA, et al 2004, Pediatrics. 114;e102-10
Saha S, et al, 2013, J Gen Intern Med. 28 :622-9

Provider Communication Training can Improve Adherence

- There is strong evidence that enhancing patient-centered communication improves adherence to treatment recommendations
  - A meta-analysis of 21 studies of training to improve physician communication demonstrate improved patient adherence
    - The odds of a patient adhering were 1.62 times better if his or her physician has been trained in communication skills.

Zolnierik KB, 2009, Med Care, 47, 26-34.

Addressing Medication Beliefs

- There is strong evidence that medication beliefs, that vary by individual, family, and culture, are associated with adherence to asthma medications
- Interventions to address medication beliefs should
  - Occur in the context of open patient-provider communication
  - Include a discussion of complementary/alternative approaches

Horne R, 2013, Plos One; 8: e80633.

Digital interventions do help some patients

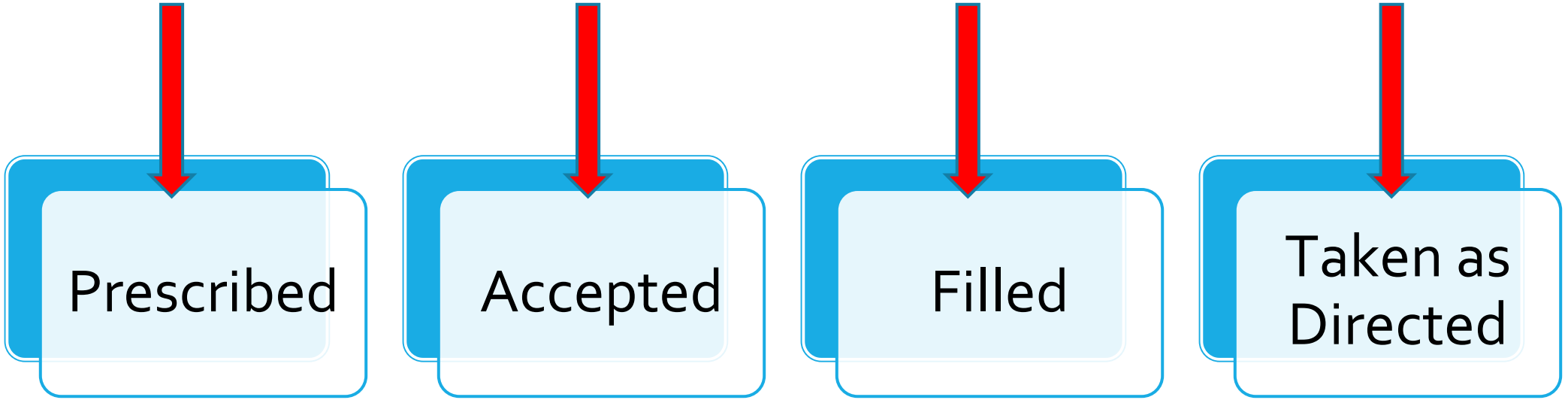
A recent Cochrane review indicated that digital interventions (SMS text, mobile apps, adherence monitors) increased adherence by ~ 15% on average.

Race/ethnicity data were not analyzed due to limited data collected across studies.

These interventions likely help patients motivated to "take medication as directed"

Chan, A et al., 2022, Cochrane Database of Sys Reviews, 6.

What steps can you take to address barriers to adherence?



Prescription rates differ by race/ethnicity: Track data; Cultural competence and communication training

Shared decision making: "What option might work best for you?" "What strategies do you use besides medicine to help symptoms? "

Assess barriers: "What might get in the way of filling this prescription?"

Assume challenges: "What is the most difficult time to remember to take your medicine?"

Collaborators

- Greg Fritz
- Daphne Koinis Mitchell
- Glorisa Canino
- Ron Seifer
- Sheryl Kopel
- Robert Klein
- Cindy Esteban
- Aris Garro
- Maria Teresa Coutinho
- Barbara Jandasek
- David Barker
- Liz Chen
- Patrick Vivier
- Deborah Pearlman
- Julian Rodriguez-Drix
- Ashley Fogarty
- Nicole Belanger
- Linnea Drew
- Rebecca Noga
- Arelis Valerio
- Miosotis Alsina
- Michael Farrow

Shira Dunsiger

THANK YOU!