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Children's Postinfectious Autoimmune Encephalopathy (CPAE) Center of Excellence Welcome

The **Children's Postinfectious Autoimmune Encephalopathy (CPAE) Center of Excellence at the UA Steele Center**, developed in cooperation with the NIH/NIMH, is the only clinic and research program of its kind in the entire Southwest.

Postinfectious Autoimmune Encephalopathy (PAE) is a condition where an infection triggers an autoimmune reaction that targets the brain, leading to changes in neurologic function, mood and behavior. PAE is sometimes referred to as **PANS** (Pediatric Acute-onset Neuropsychiatric Syndrome) and **PANDAS** (Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal infection).

The CPAE Center of Excellence has three goals:

1. To deliver multidisciplinary, state-of-the-art care to children who experience behavioral and neurological changes after an infection.
2. To investigate the causes of Postinfectious Autoimmune Encephalopathy (PAE).
3. To find new treatments to improve outcomes and eventually cure children with Postinfectious Autoimmune Encephalopathy (PAE).

Basic science and translational research of Postinfectious Autoimmune Encephalopathy (PAE) is conducted at the **UA Steele Center**, a world-renowned research center with cutting-edge researchers studying inflammation, microbiome, and the genetics of complex diseases. Clinical services are provided at Banner's [Diamond Children's Multispecialty Clinic](#) (link is external), and children treated at the center will be offered enrollment in clinical research trials led by UA Steele Center physician-researchers.

Autoimmune encephalopathy (AE) is a clinical diagnosis given to children who have a dramatic--sometimes overnight--onset of neuropsychiatric symptoms. AE is thought to be triggered by infections, metabolic disturbances, and other inflammatory reactions.

Symptoms:

- OCD (obsessive/compulsive disorder)
- Tics

- Restrictive eating; anorexia
- Anxiety
- Depression
- Irritability and aggression
- Difficulty with schoolwork
- Behavioral regression
- Changes in handwriting
- Severe separation anxiety
- Sensory sensitivities
- Hallucinations
- Urinary problems

Autoimmune Encephalopathy Research

Research in the area of **autoimmune encephalopathy** such as **PANS** (Pediatric Acute-onset Neuropsychiatric Syndrome)/**PANDAS** (Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal infection) is growing, but is still preliminary. Multi-center studies are needed to move research forward. PANS/PANDAS research at the UA Steele Center will focus on genetics, biomarkers and response to varied medical interventions.

Sydney Rice, MD, MPH, and **Michael Daines, MD** are the principal investigators for the Arizona partner site in the NIMH PANS/PANDAS national collaboration.

Dr. Rice will focus on developing centralized and systematic data collection tools and protocols that will generate a national data and biological repository to accelerate PANS/PANDAS research. The research conducted under Dr. Rice will include clinical approaches and will generate extensive, systematic data and sample collection that will allow basic scientists to approach the question of diagnosis and treatment from a different perspective.

Dr. Daines will focus on medical interventions and response to treatments related to immune deficiency and dysregulation associated with PANS/PANDAS. As a clinical immunologist, Dr. Daines has extensive clinical experience in diagnosing and managing immune deficiency and dysregulation including the prophylactic use of antibiotics, immune suppressive drugs, replacement and immunomodulatory IVIG, and stem cell transplant. His clinical and research role will be to assess the need for immune modulation, determine the appropriate treatment, and enroll patients in rigorous research studies to assess the response to immune modulation from an immune standpoint and from a behavioral standpoint in collaboration with Dr. Rice.