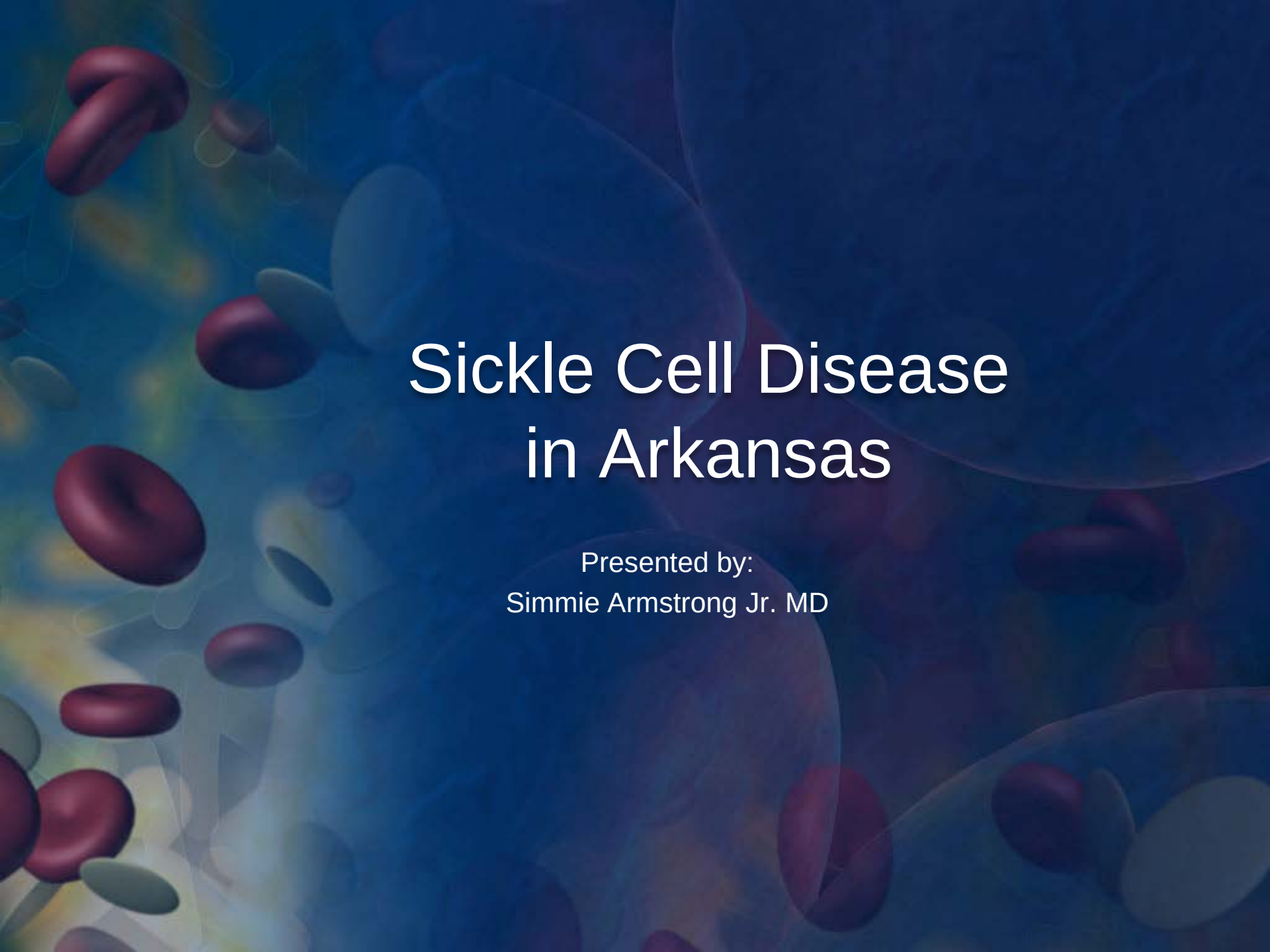


A microscopic view of blood cells, showing several red blood cells (erythrocytes) and some white blood cells (leukocytes) against a dark blue background. The red blood cells are biconcave discs, some appearing normal and others slightly distorted. The white blood cells are larger and more irregular in shape. The overall image has a soft, ethereal quality with a blue and purple color palette.

Sickle Cell Disease in Arkansas

Presented by:
Simmie Armstrong Jr. MD



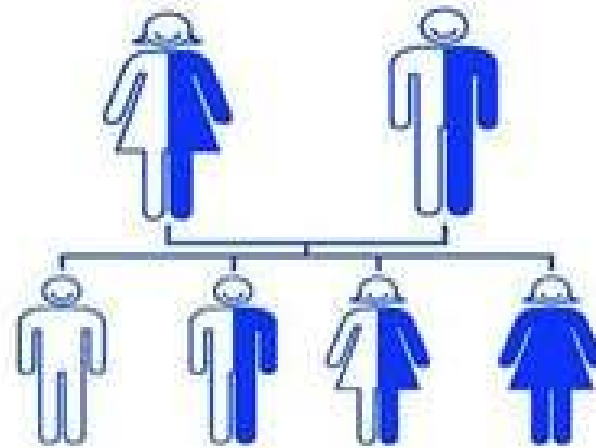
Introduction

Overview

- Purpose of meeting
- Origin of disease

Epidemiology (World)





اطفال أصحاء

Typical
(No Blood Disorder)

اطفال حاملين للمرض

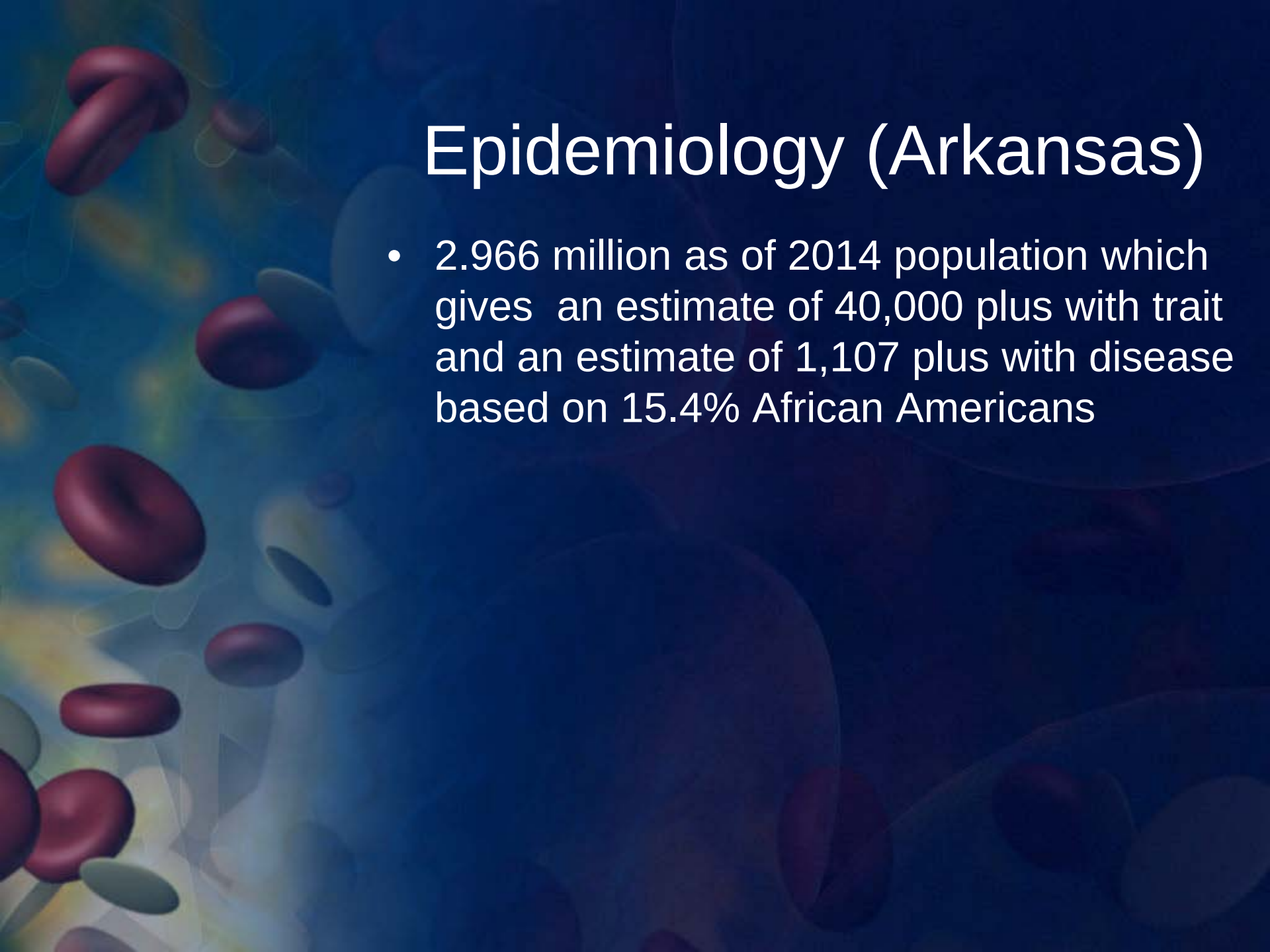
Sickle Cell Trait

اطفال مصابين

Sickle Cell Disease

Epidemiology (U.S.)

- Population as of 3-22-16 –323,214,999
- Estimate of 40,078,287.88 African Americans which shows 66,797 with disease based on 1 in 600 with disease and 4,007,828 with disease trait based on 1 in 10



Epidemiology (Arkansas)

- 2.966 million as of 2014 population which gives an estimate of 40,000 plus with trait and an estimate of 1,107 plus with disease based on 15.4% African Americans

Pathophysiology

- Inherited Disease (genetic)
- Results from abnormal hemoglobin which differs from normal hemoglobin by the 6th amino acid position of the globulin component by having valine in that position rather than glutamic acid which is from a substitution
- When the red blood cell is deprived of oxygen it becomes irregularly shaped or sickled and can lead to occlusion of the capillary blood vessel
- Normal life span of red blood cell can be up to 120 days but the sickle cell may last only 30-60 days.
- Sickle cell trait results when only half of the gene pool for hemoglobin is abnormal
- Sickle cell disease results when more than half of gene pool for hemoglobin is abnormal

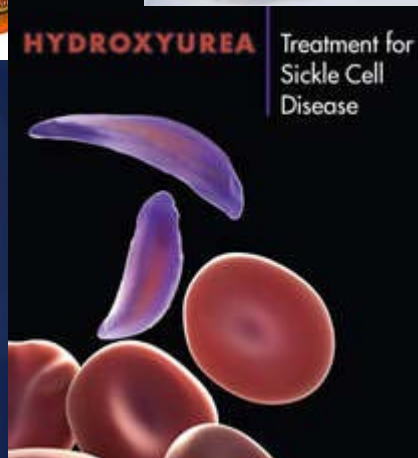
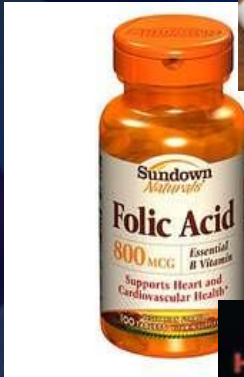
Disease Management



- Medical
- Social
- Political
- Economic

Treatment

- Preventive
- Acute care
- Chronic care



Prevention



- Education
- Genetic counseling



Future Management

Bone marrow transplant

Stem Cell transplant

Gene therapy

Future Recommendations in Arkansas

- Screening Programs
- Medication Reform
- Registry
- Provider Education



Thank You!