

Blood Stem Cell Transplantation Trends: An Overview

HRSA Advisory Council on Blood Stem Cell Transplantation
Sept. 25, 2020



The CIBMTR[®] (Center for International Blood and Marrow Transplant Research[®]) is a research collaboration between the National Marrow Donor Program[®] (NMDP)/Be The Match[®] and the Medical College of Wisconsin (MCW).

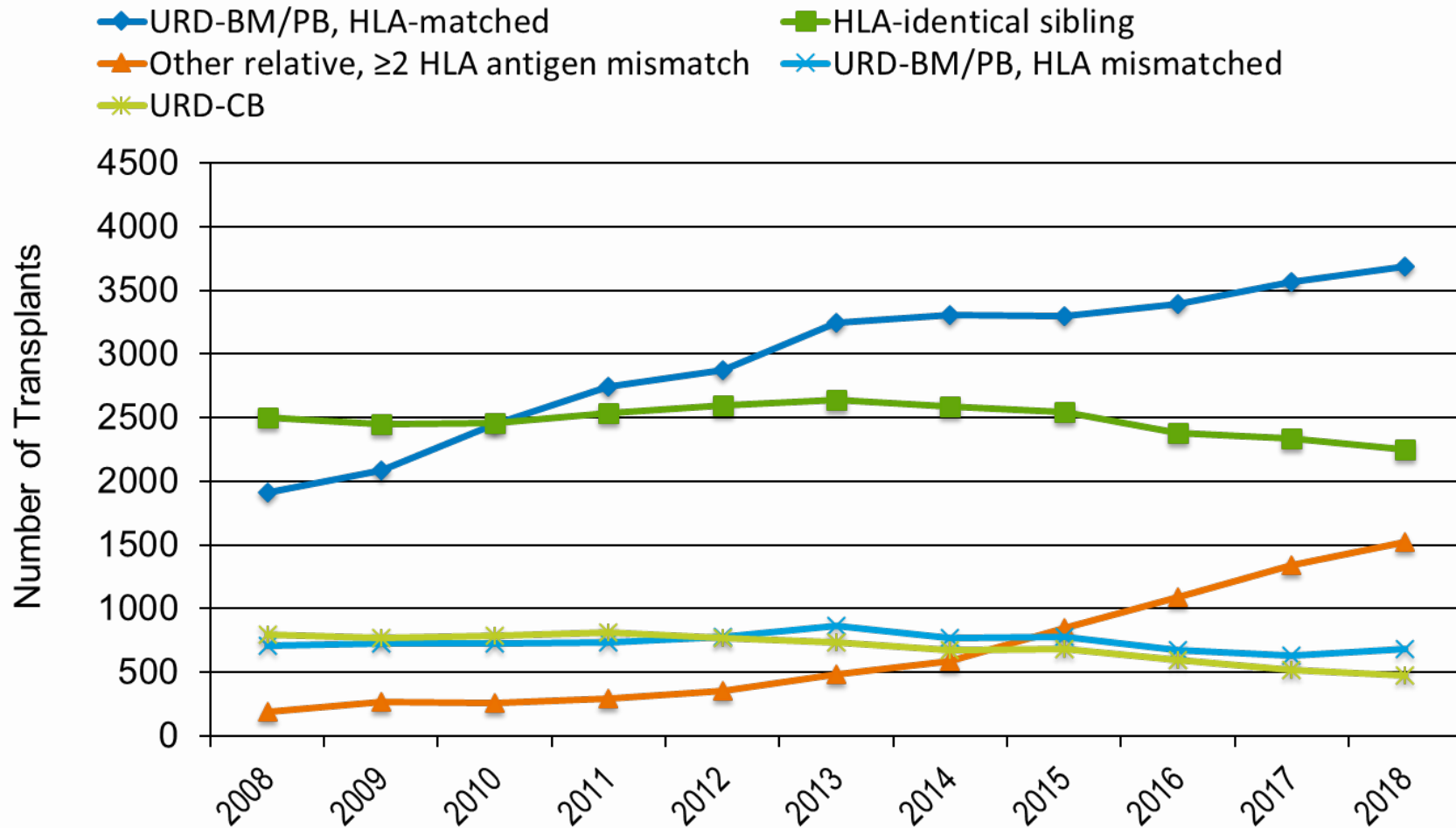
Disclosures

- Stephen Spellman is an employee of the National Marrow Donor Program (NMDP) and serves as a Scientific Director in the Center for International Blood and Marrow Transplant Research (CIBMTR)

Outline

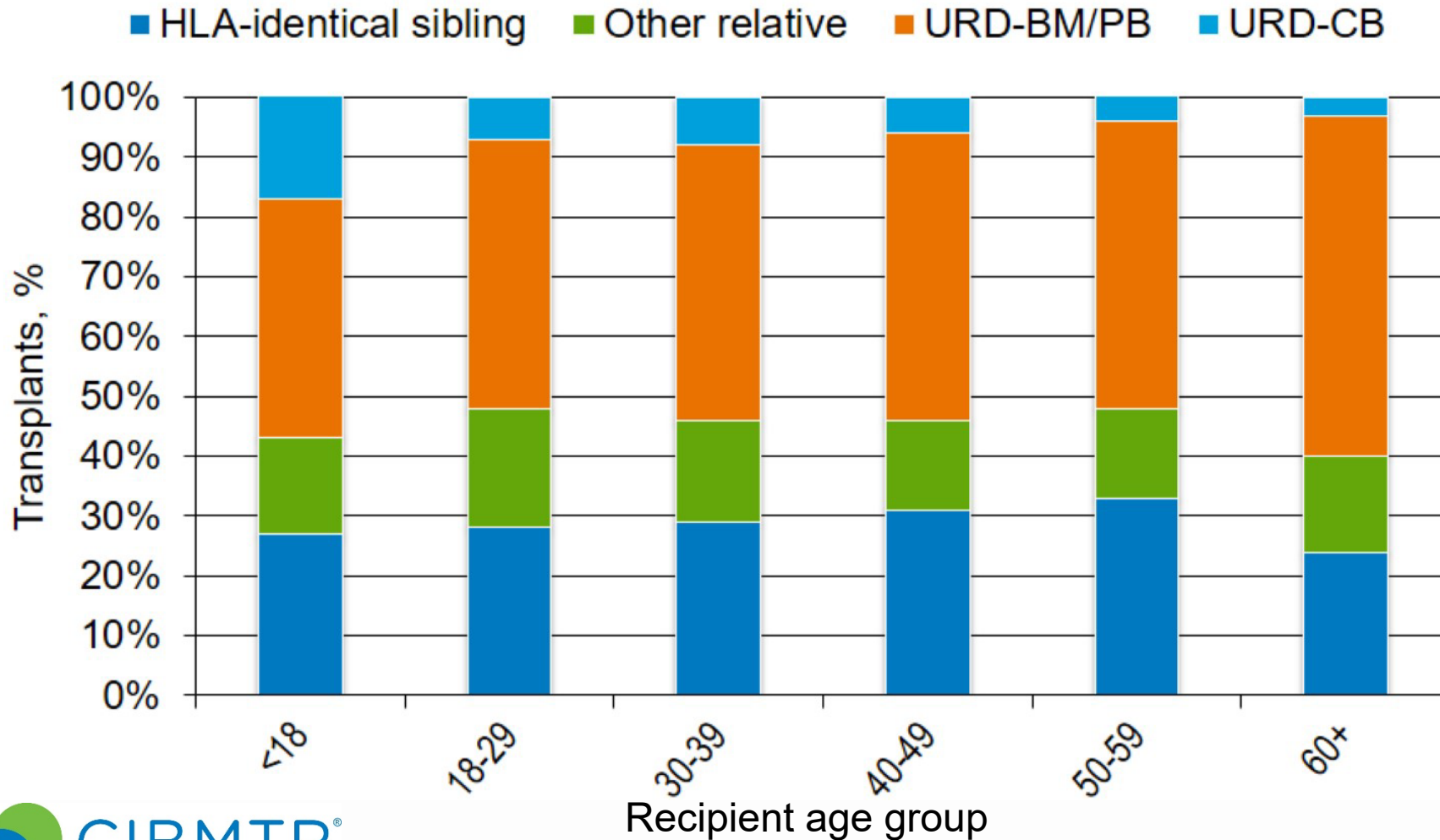
- Present an overview of Blood Stem Cell Transplantation Trends in the U.S. from 2008-present
 - Data sourced from the National Marrow Donor Program (NMDP) and Center for International Blood and Marrow Transplant Research (CIBMTR)
- Show different dimensions:
 - Hematopoietic cell transplantation (HCT) overall by donor source, e.g. related, unrelated (adult donor and cord blood) and by recipient age group
 - By race/ethnic group by donor source proportion excluding matched sibling donors
 - By race/ethnic group match status for cord blood HCT

Allogeneic HCT recipients in the US, by donor type



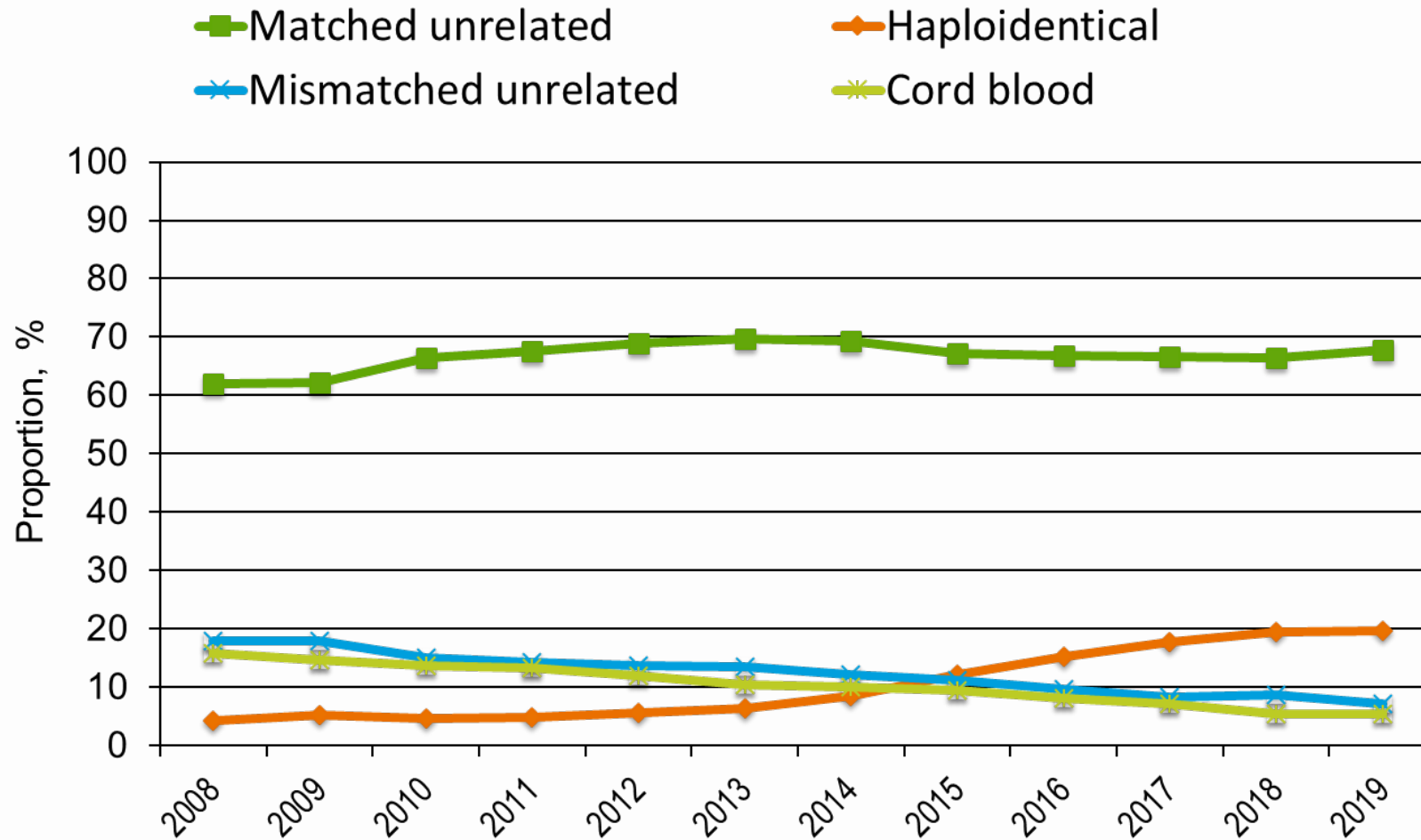
- This figure shows the relative trends in HCT by donor type in the US between 2008 to 2018.
- HLA-matched unrelated donors (URD) HCT has nearly doubled since 2008
- Use of haploidentical related donors has tripled (500/year to 1500/year) from 2013 to 2018

HCT Recipient Donor Type by Age Group in the U.S., 2013-2018



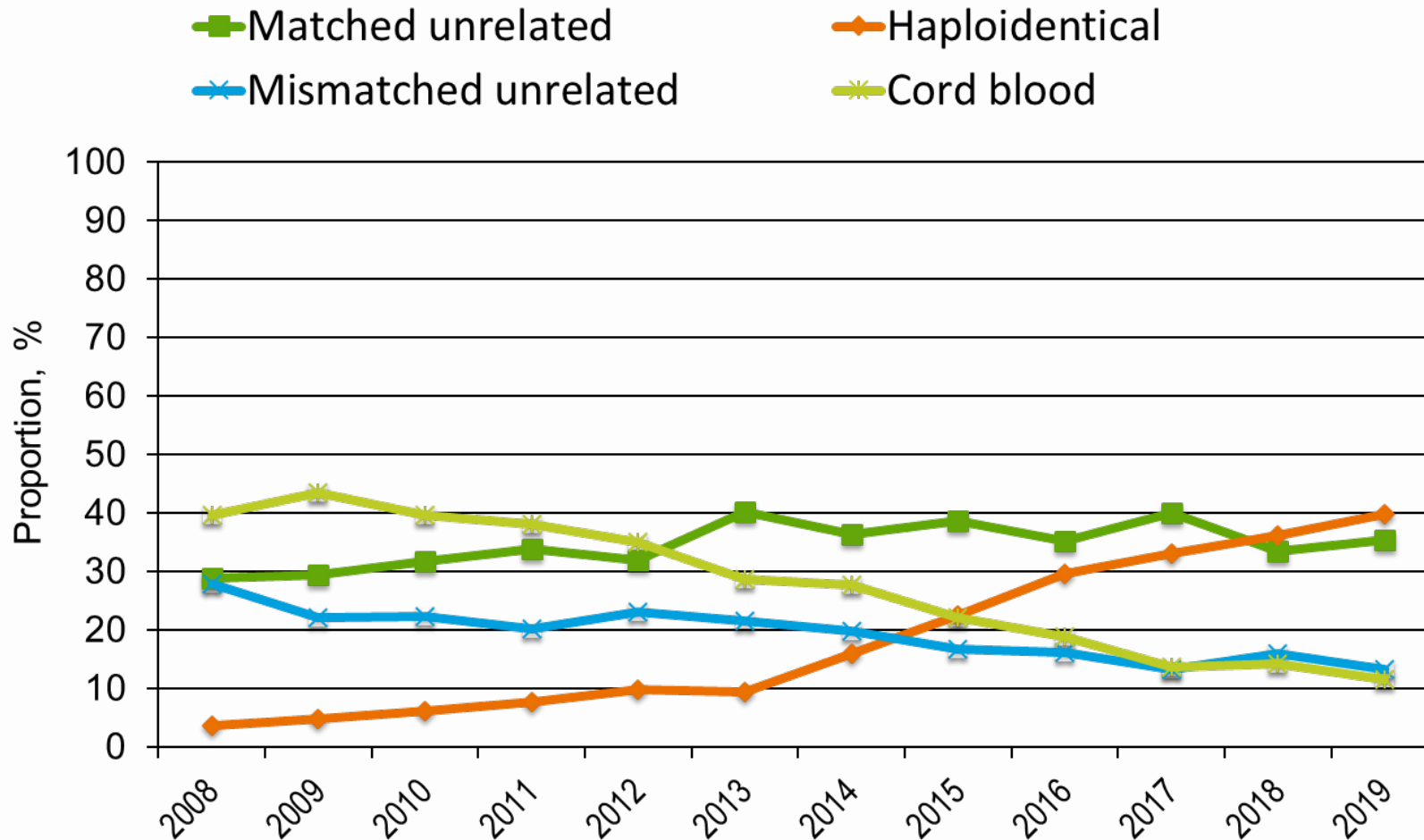
- Among pediatric recipients, URD was the most common donor type followed, in order, by HLA-identical sibling, umbilical cord blood (URD-CB) transplants and haploidentical transplants (other relative)
- Among adults, we see similar donor types, with the exception of haploidentical transplant being the favored alternative donor over umbilical cord blood transplants

Donor type distribution trends in White, Non-Hispanic recipients



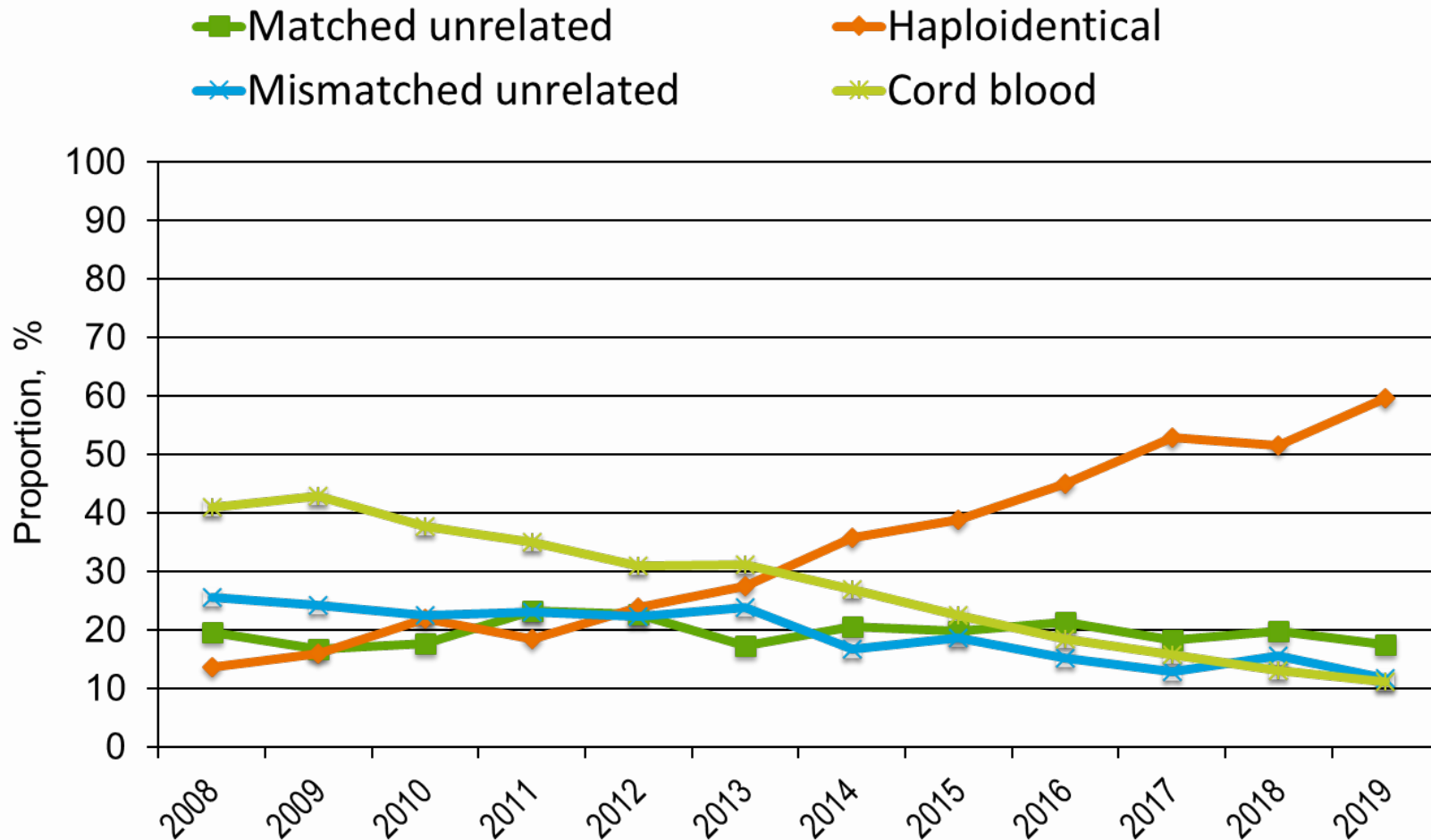
- This figure shows the relative HCT trends in the US for White/non-Hispanic recipients by donor type between 2008 to 2019 by proportion (%) after excluding matched sibling donors
- Matched unrelated donor use has remained steady at >60%
- Cord blood and mismatched unrelated donor use have declined
- Haploidentical related donor use has increased from 4% to 20%

Donor type distribution trends in White, Hispanic recipients



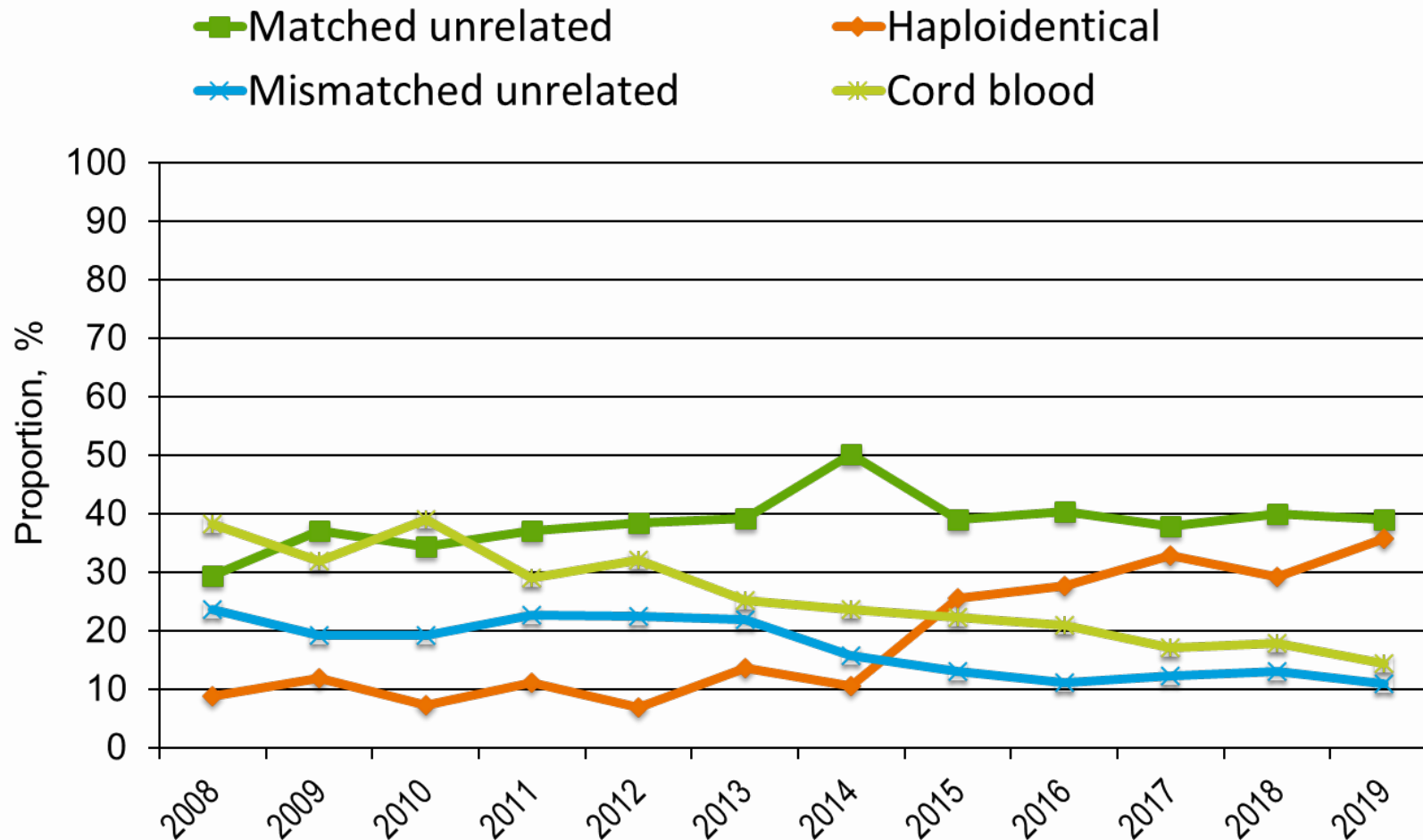
- This figure shows the relative HCT trends in the US for White/Hispanic recipients by donor type between 2008 to 2019 by proportion (%) after excluding matched sibling donors
- Matched unrelated donor use has increased slightly
- Cord blood and mismatched unrelated donor use have declined
- Haploidentical related donor use has increased substantially from 4% to 40%

Donor type distribution trends in Black or African American recipients



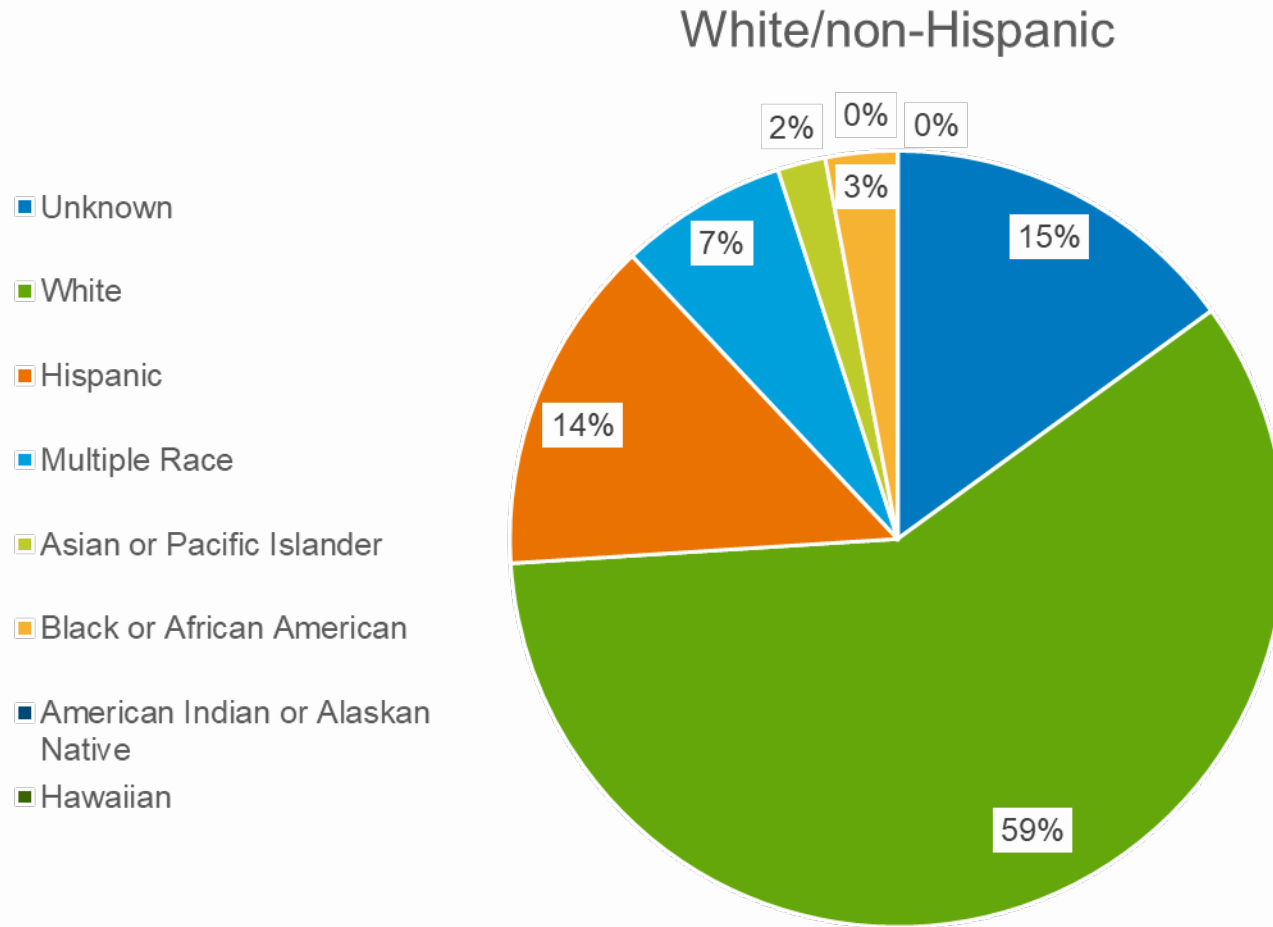
- This figure shows the relative HCT trends in the US for Black or African American recipients by donor type between 2008 to 2019 by proportion (%) after excluding matched sibling donors
- Matched unrelated donor use has remained steady
- Cord blood and mismatched unrelated donor use have declined
- Haploidentical related donor use has increased substantially from 14% to 60%

Donor type distribution trends in Asian or Pacific Islander recipients



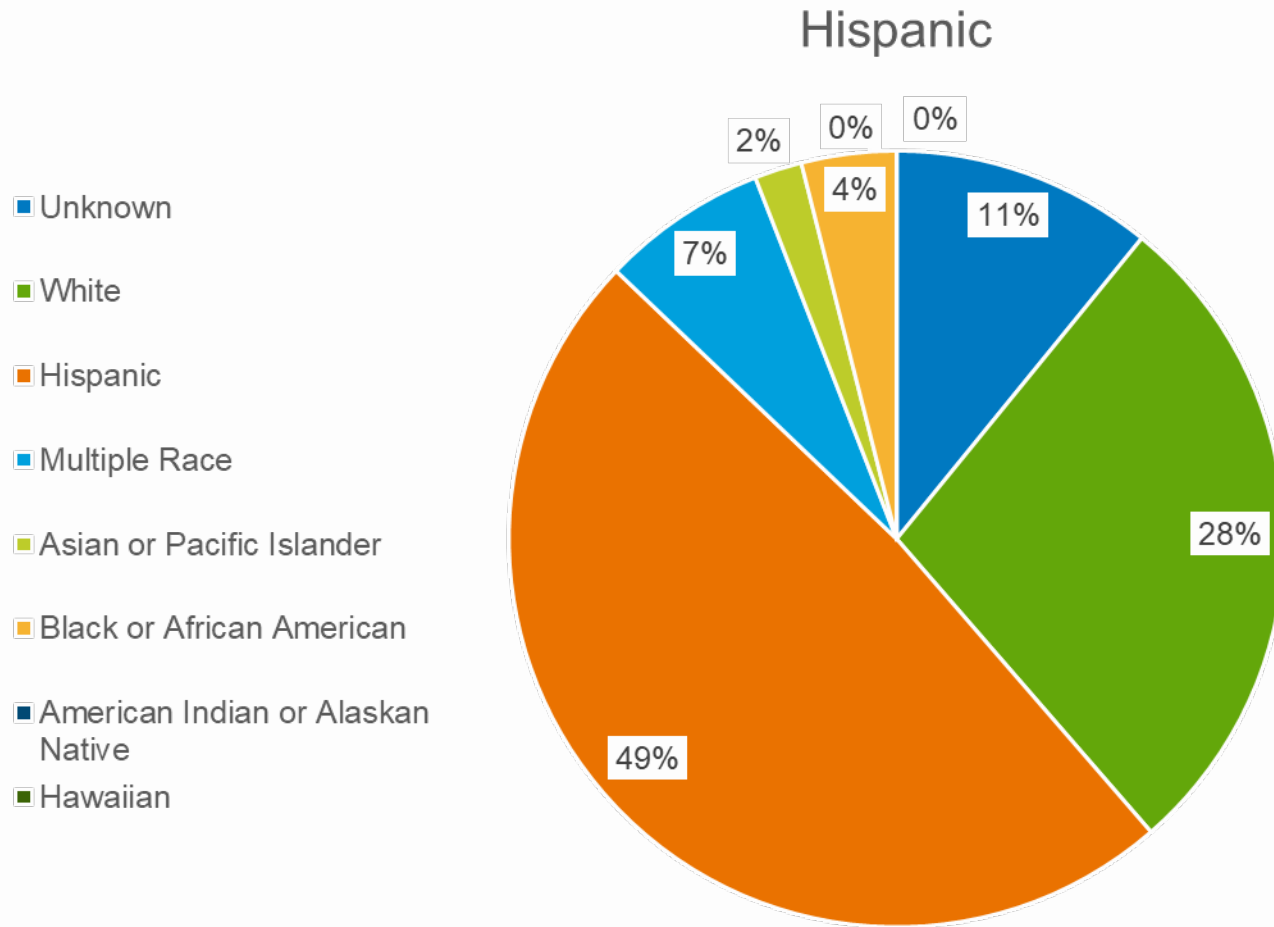
- This figure shows the relative HCT trends in the US for Asian or Pacific Islander recipients by donor types between 2008 to 2019 by proportion (%) after excluding matched sibling donors
- Matched unrelated donor use has increased from 30% to 40%
- Cord blood and mismatched unrelated donor use have declined
- Haploidentical related donor use has increased substantially from 10% to 36%

Distribution of cord blood race/ethnicity for White/non-Hispanic recipients



- This figure shows the distribution of cord blood race/ethnicity for White/non-Hispanic recipients whose transplants were facilitated by NMDP from 2010 to August 2020
- The most common cord race/ethnicity was White/non-Hispanic at 59% followed by Unknown at 15%, Hispanic at 14% and Multiple Race at 7%

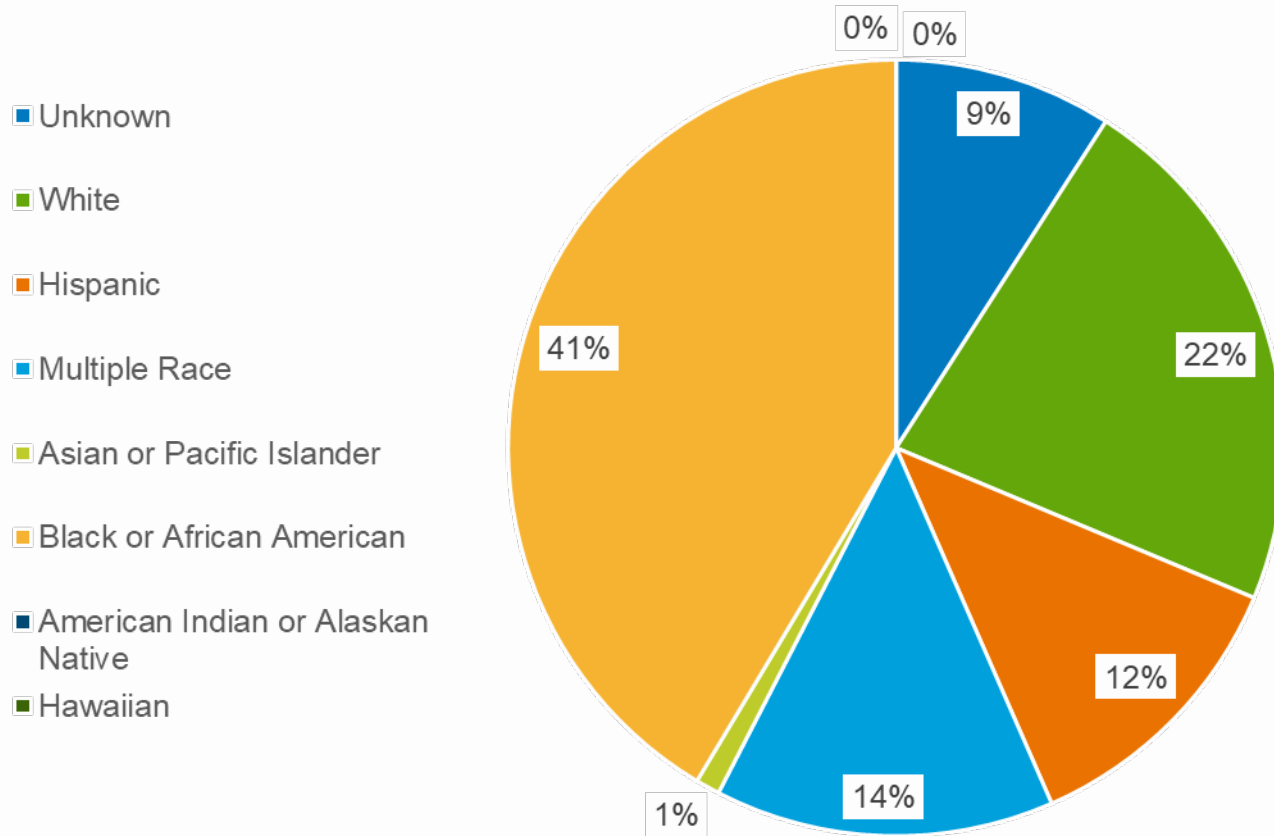
Distribution of cord blood race/ethnicity for Hispanic recipients



- This figure shows the distribution of cord blood race/ethnicity for Hispanic recipients whose transplants were facilitated by NMDP from 2010 to August 2020
- The most common cord race/ethnicity was Hispanic at 49% followed by White/non-Hispanic at 28%, Unknown at 11% and Multiple Race at 7%

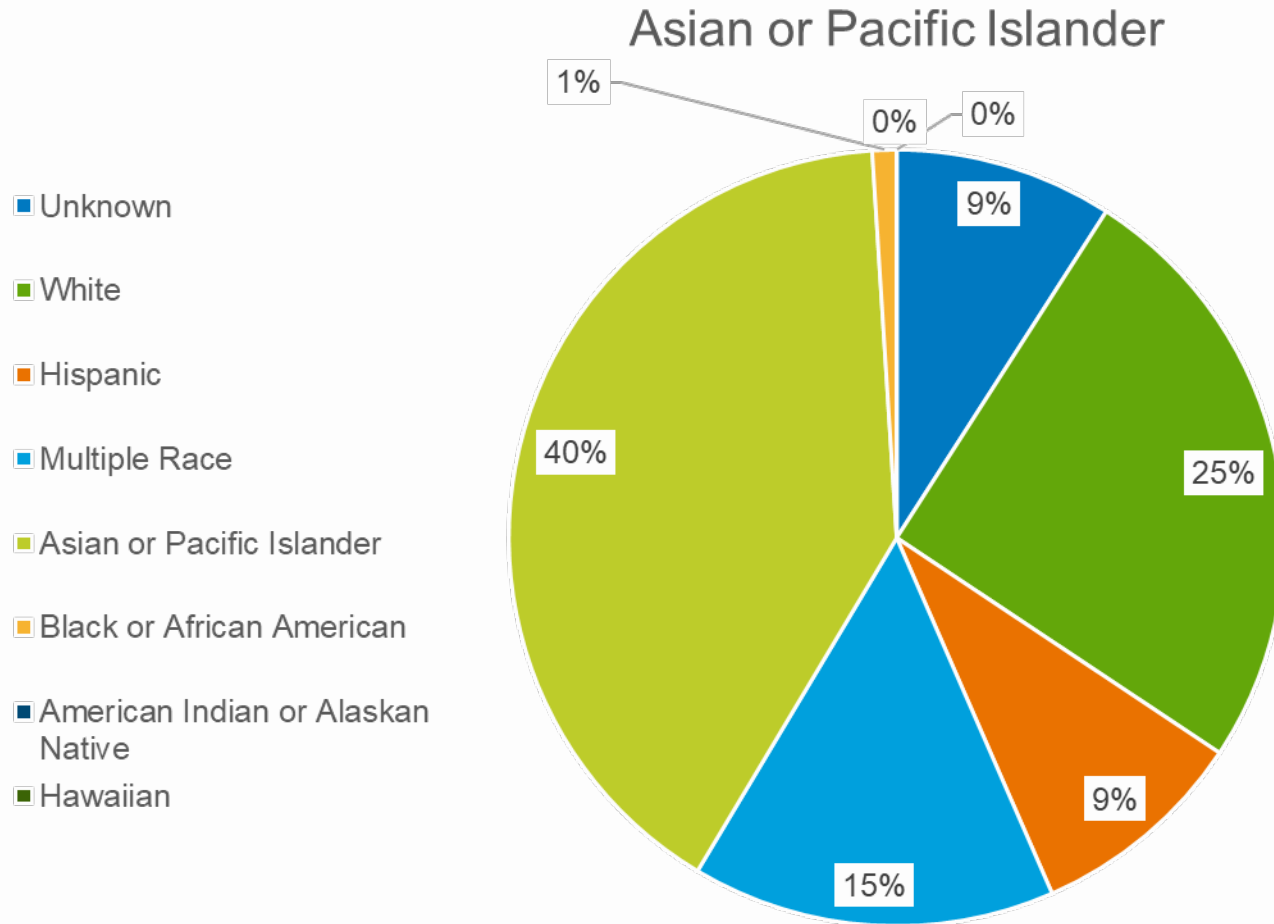
Distribution of cord blood race/ethnicity for Black or African American recipients

Black or African American



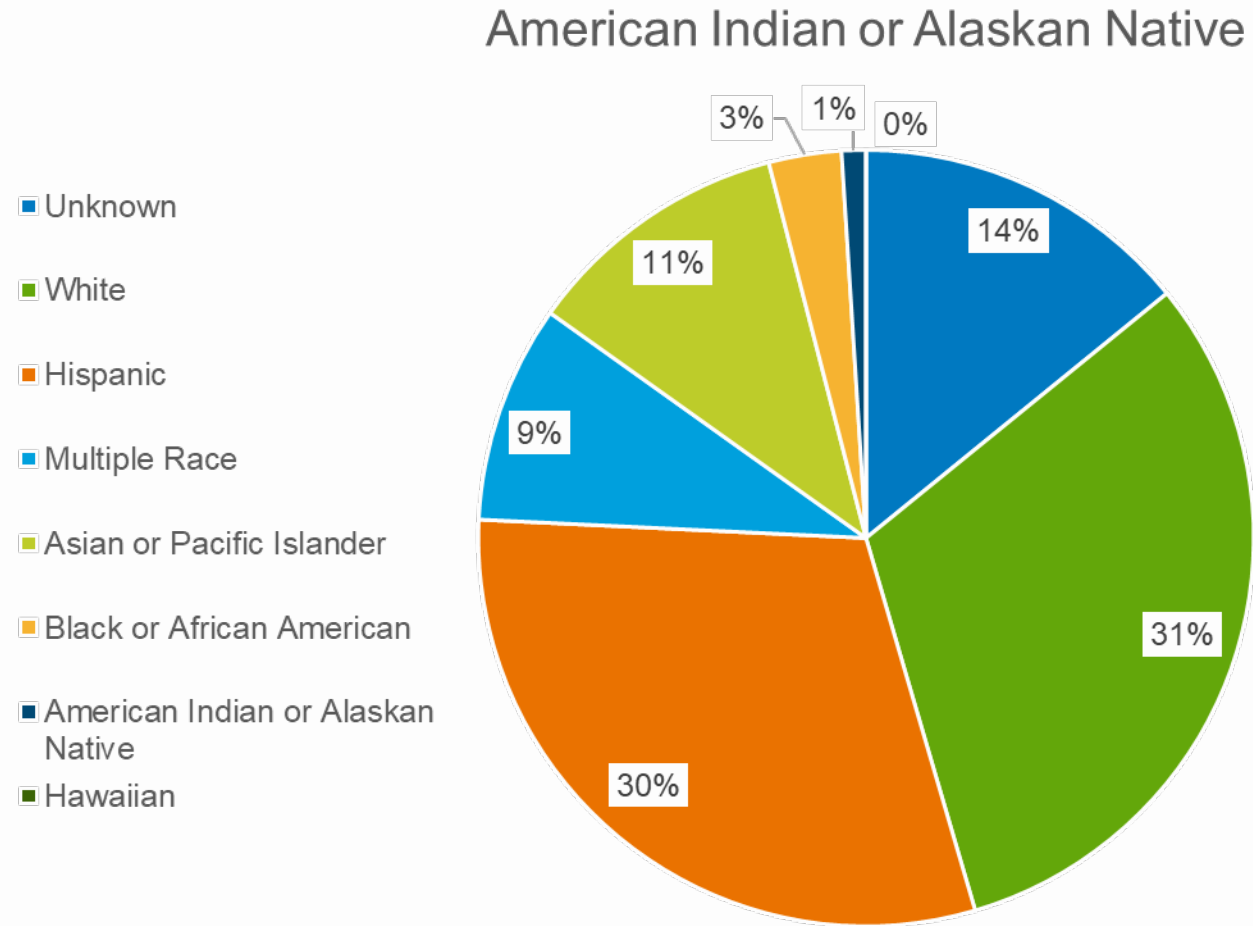
- This figure shows the distribution of cord blood race/ethnicity for Black or African American recipients whose transplants were facilitated by NMDP from 2010 to August 2020
- The most common cord race/ethnicity was Black or African American at 41% followed by White/non-Hispanic at 22%, Multiple Race at 14%, White/Hispanic at 12% and Unknown at 9%

Distribution of cord blood race/ethnicity for Asian or Pacific Islander or Pacific Islander recipients



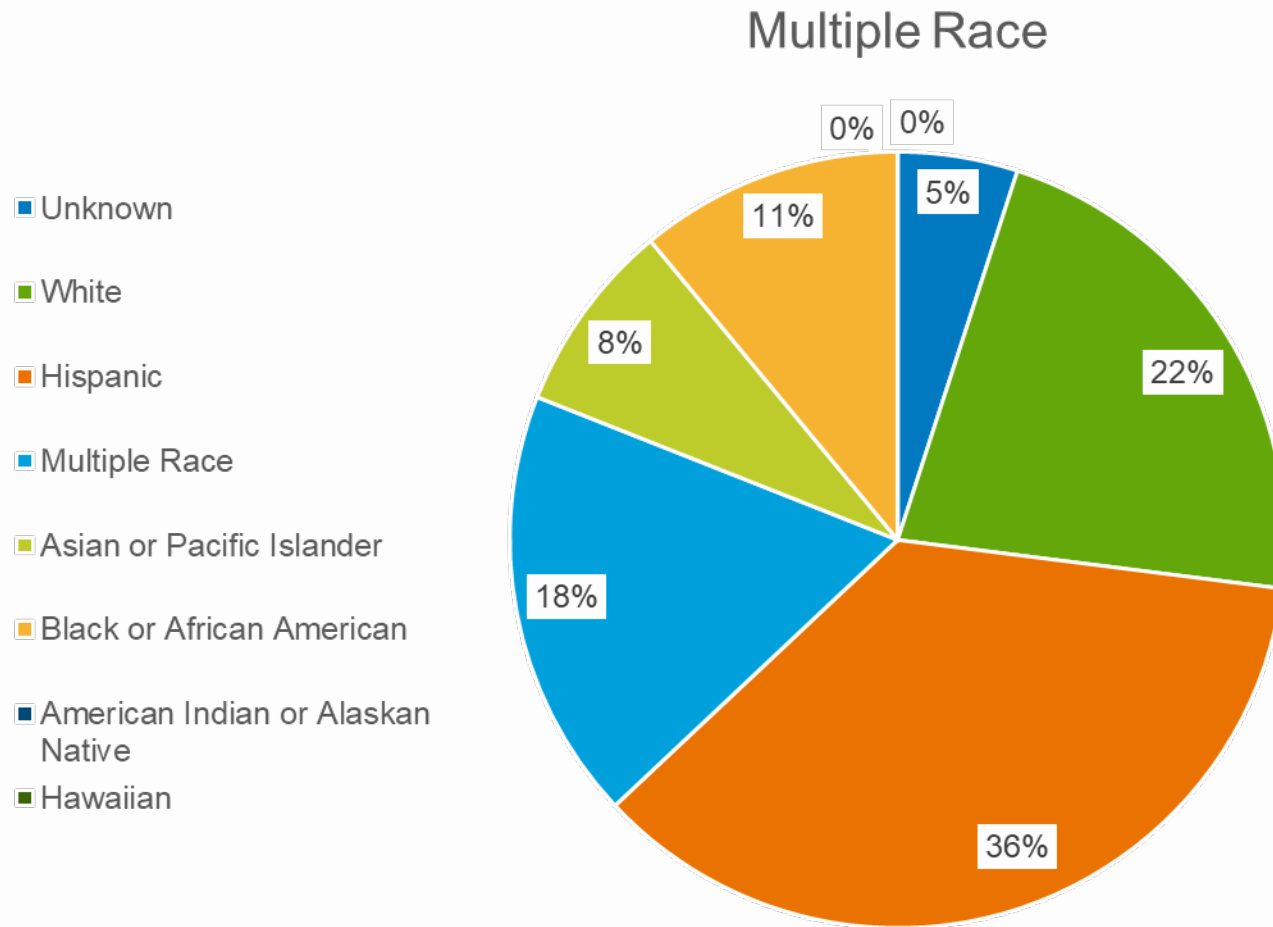
- This figure shows the distribution of cord blood race/ethnicity for Asian or Pacific Islander recipients whose transplants were facilitated by NMDP from 2010 to August 2020
- The most common cord race/ethnicity was Asian or Pacific Islander at 40% followed by White/non-Hispanic at 25%, Multiple Race at 15%, White/Hispanic at 9% and Unknown at 9%

Distribution of cord blood race/ethnicity for American Indian or Alaskan Native recipients



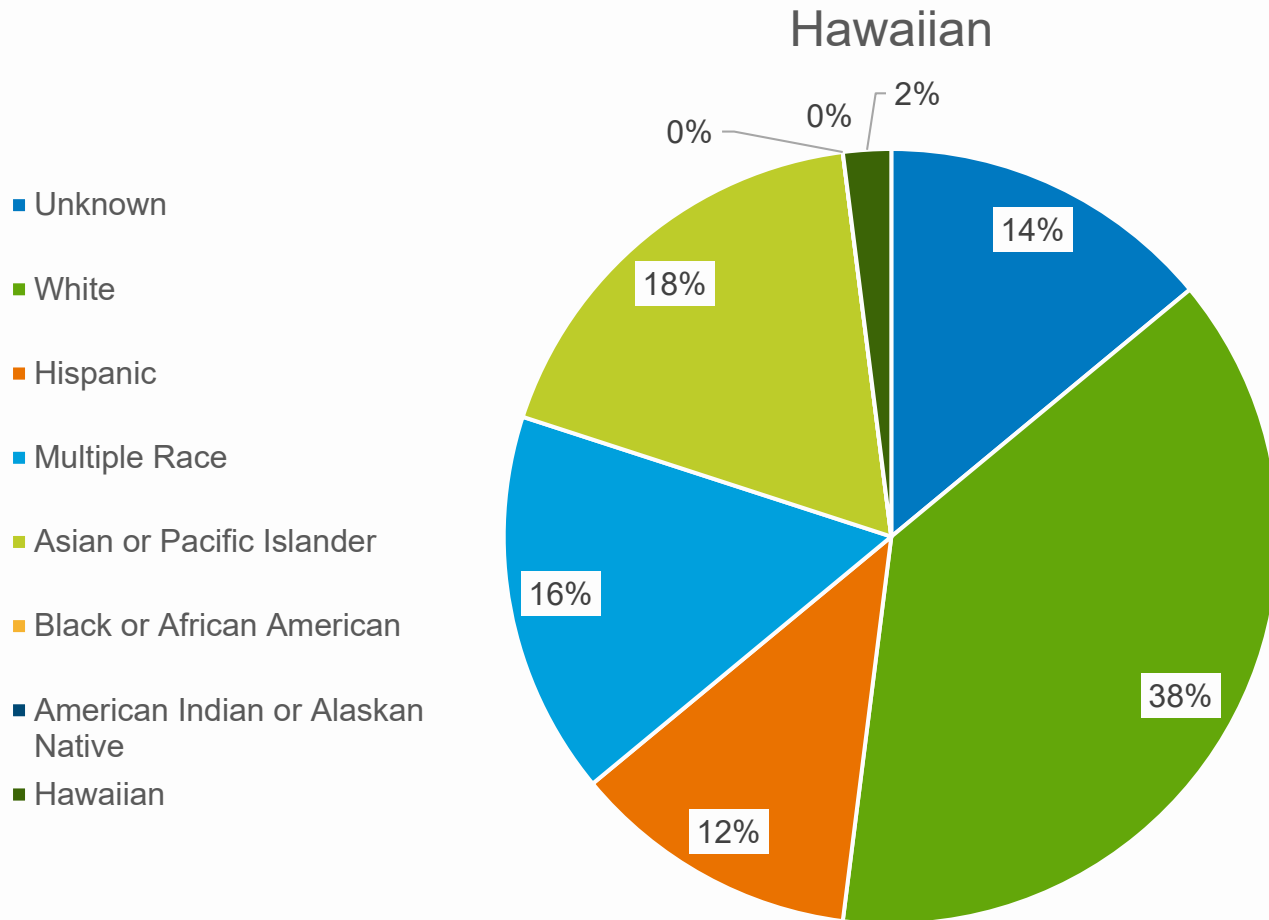
- This figure shows the distribution of cord blood race/ethnicity for American Indian or Alaskan Native recipients whose transplants were facilitated by NMDP from 2010 to August 2020
- The most common cord race/ethnicity was White/non-Hispanic at 31% followed by White/Hispanic at 30%, Unknown at 14%, Asian or Pacific Islander at 11% and Multiple Race at 9%

Distribution of cord blood race/ethnicity for Multiple Race recipients



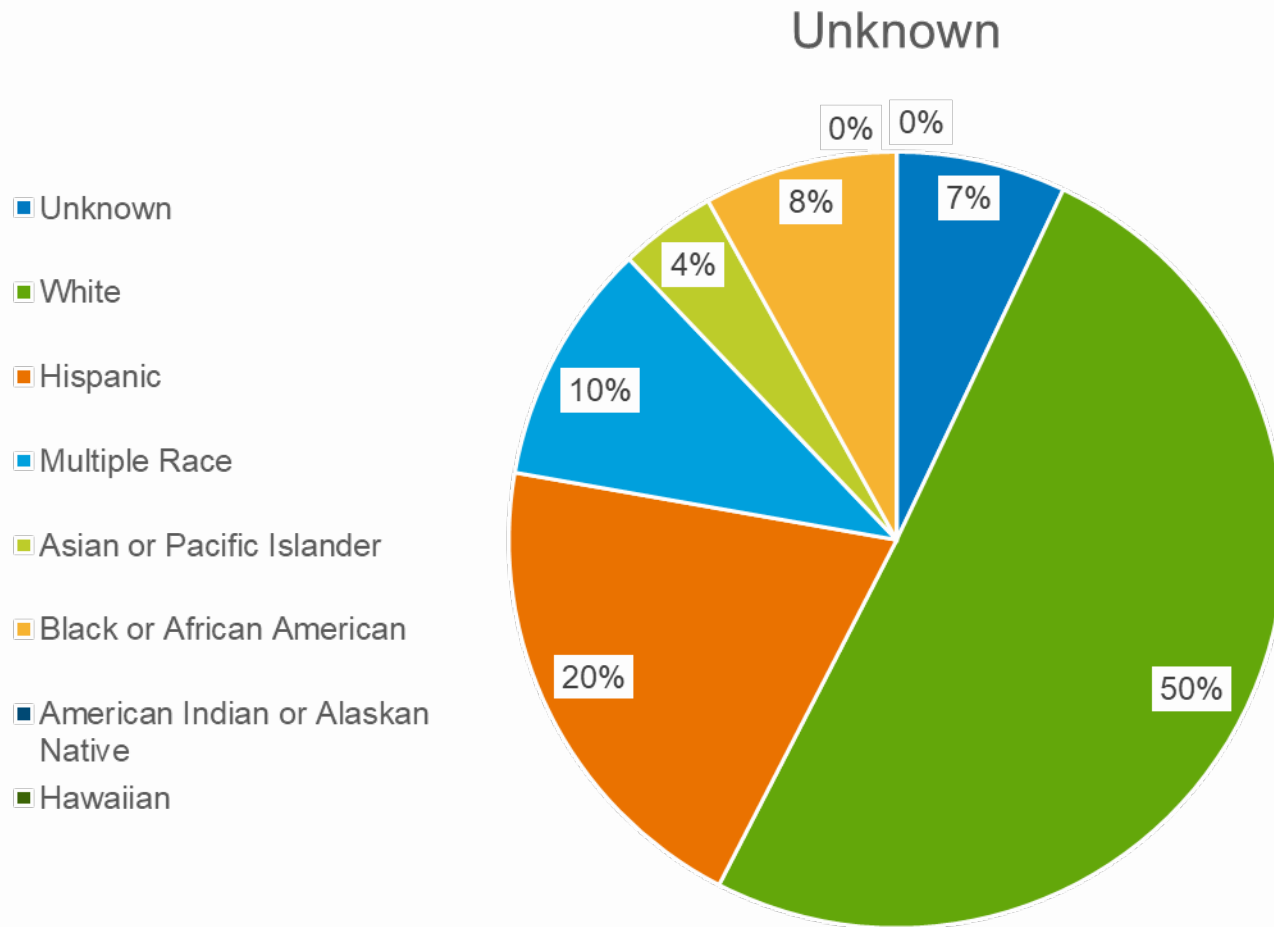
- This figure shows the distribution of cord blood race/ethnicity for Multiple Race recipients whose transplants were facilitated by NMDP from 2010 to August 2020
- The most common cord race/ethnicity was Hispanic at 36% followed by White/non-Hispanic at 22%, Multiple Race at 18%, Black or African American at 11%, Asian or Pacific Islander at 8% and Unknown at 5%

Distribution of cord blood race/ethnicity for Hawaiian recipients



- This figure shows the distribution of cord blood race/ethnicity for Hawaiian recipients whose transplants were facilitated by NMDP from 2010 to August 2020
- The most common cord race/ethnicity was White/non-Hispanic at 38% followed by Asian or Pacific Islander at 18%, Multiple Race at 16%, Unknown at 14% and Hispanic at 12%

Distribution of cord blood race/ethnicity for Unknown race/ethnicity recipients



- This figure shows the distribution of cord blood race/ethnicity for Unknown race/ethnicity recipients whose transplants were facilitated by NMDP from 2010 to August 2020
- The most common cord race/ethnicity was White/non-Hispanic at 50% followed by Hispanic at 20%, Multiple Race at 10%, Black or African American at 8% and Unknown at 7%