cfDNA Practice Experiences & ACOG Guidelines

JASMINE LAI, MD

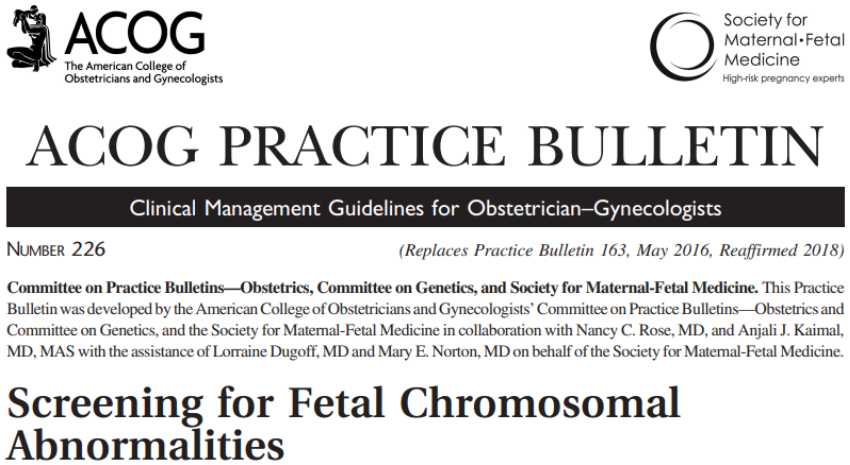
SCRIPPS PERINATOLOGY

ACOG DISTRICT IX COMMITTEE ON PUBLIC HEALTH

ACOG
The American College of Obstetricians and Gynecologists

Objectives

- Discuss guidelines for use of cfDNA for prenatal screening in pregnant individuals (ACOG Practice Bulletin No 226 & ACMG NIPS 2016 update).
- Identify opportunities to expand equity in clinical obstetrical practice for cfDNA prenatal screening.



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ACOG PRACTICE BULLETIN

Clinical Management Guidelines for Obstetrician–Gynecologists

NUMBER 226 *(Replaces Practice Bulletin 163, May 2016, Reaffirmed 2018)*

Committee on Practice Bulletins—Obstetrics, Committee on Genetics, and Society for Maternal-Fetal Medicine. This Practice Bulletin was developed by the American College of Obstetricians and Gynecologists' Committee on Practice Bulletins—Obstetrics and Committee on Genetics, and the Society for Maternal-Fetal Medicine in collaboration with Nancy C. Rose, MD, and Anjali J. Kaimal, MD, MAS with the assistance of Lorraine Dugoff, MD and Mary E. Norton, MD on behalf of the Society for Maternal-Fetal Medicine.

Screening for Fetal Chromosomal Abnormalities

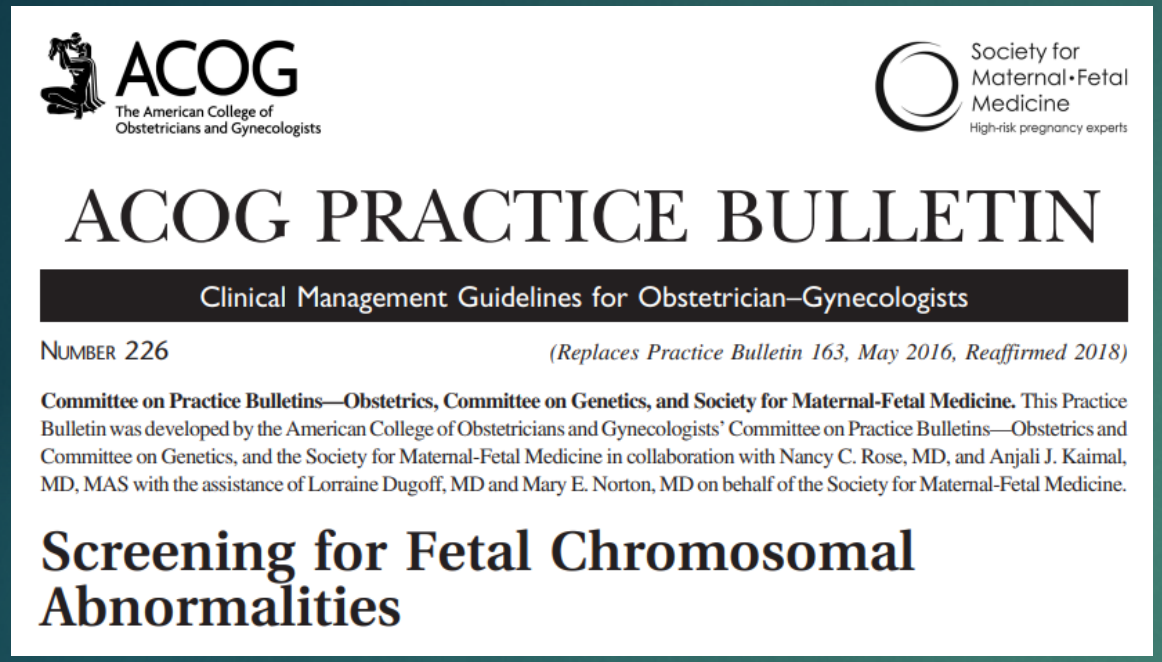
Disclosures

- None

- **ACOG**: dedicated to the advancement of women's health care … through medical education, practice, research, and advocacy.
- **ACOG Public Health Committee**: leads and supports programs that protect and promote optimal obstetric and gynecologic health…to advise and disseminate best practices.

Questions

- Who are appropriate candidates for offering prenatal genetic *screening* (including cfDNA) and genetic *testing* options?
- What is the most sensitive and specific *screening* test for common fetal aneuploidies?
- What results will be reported with the new California Prenatal Screening Program?
- What happens to patients with a positive screening test result for fetal aneuploidy?



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Screening for Fetal Chromosomal Abnormalities

- "cfDNA is the most sensitive and specific *screening* test for the common fetal aneuploidies" [T21/18/13]
- No *screening* test is equivalent to *diagnostic* testing in regard to detection rate
- **8/2020 Update**: "Prenatal genetic screening, [including cfDNA screening] should be discussed and offered to all pregnant women regardless of maternal age or risk"

Case Vignette #1

- 42-year-old G2P0 presents to care at 12 weeks, desires the "Down syndrome test."
- 21-year-old G3P2 presents to care at 13 weeks, is given the first trimester California genetic screening test form.

Case Vignette #1 Continued

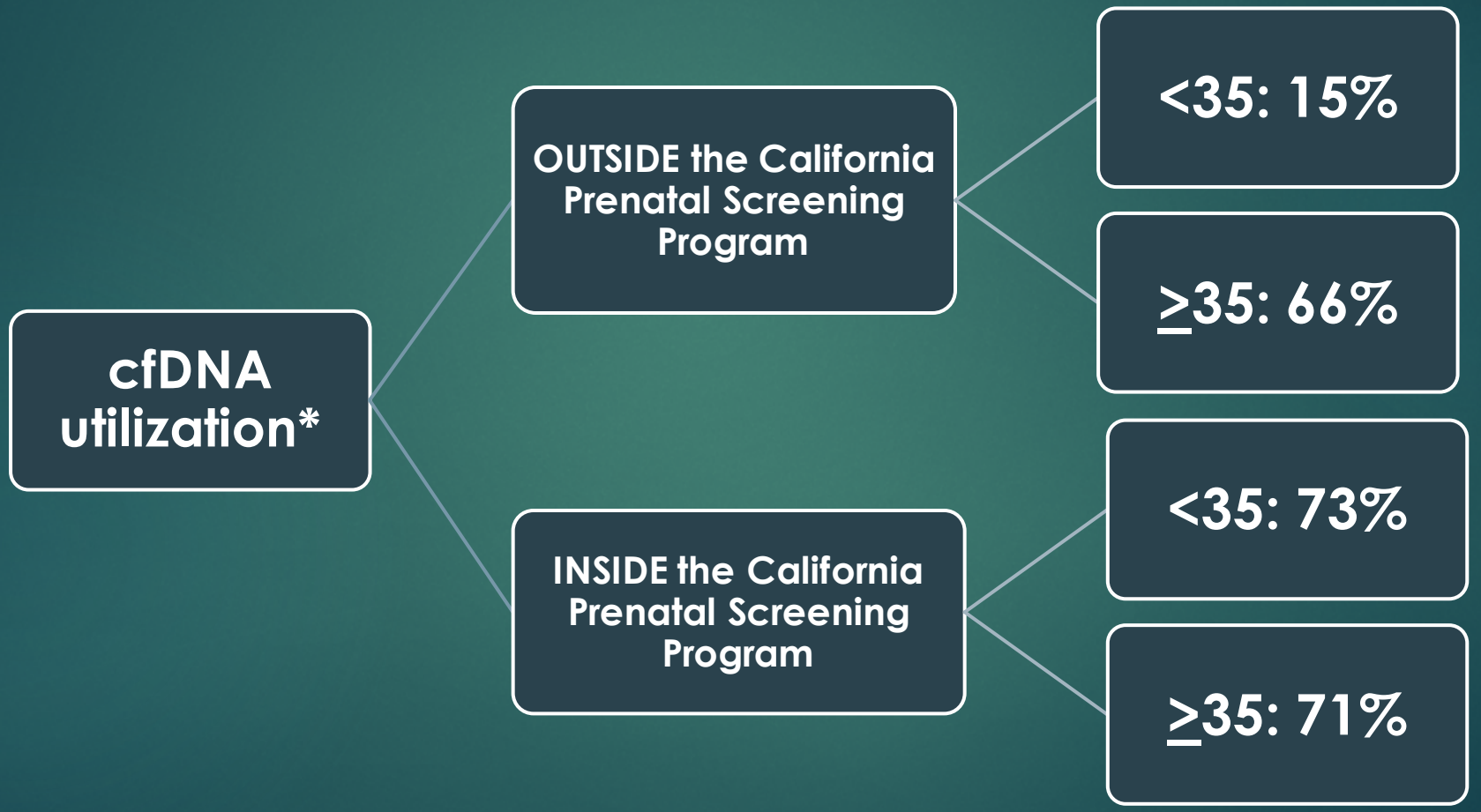
- 42-year-old G2P0 presents to care at 12 weeks, desires the "Down syndrome test."

13+6 weeks, first trimester screen returns a T21 risk 1:150 → **19+6 weeks, integrated genetic screen returns a T21 risk of 1:68** → **opts for cfDNA, 21+5 weeks, "low risk NIPT"**

- 21-year-old G3P2 presents to care at 13 weeks, is given the first trimester California genetic screening test form.

13+6 weeks, first trimester screen returns a T21 risk <1:100,000 → **19+6 weeks, first trimester screen returns a T21 risk <1:100,000**

Case Vignette #1 Continued
cfDNA Utilization by Age

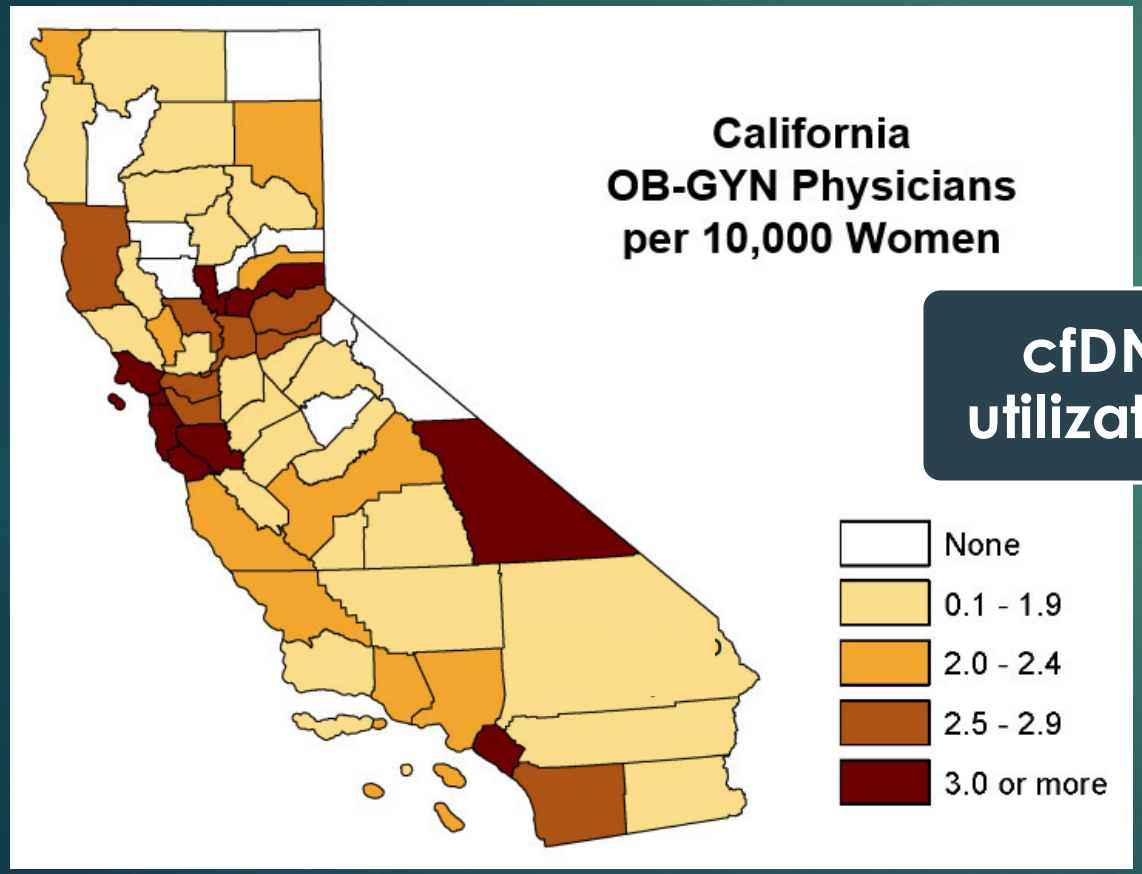


* Unpublished data from CDPH, cfDNA utilization in California, 2015-2018; 300,000 CA-PNS participants each year.

Case Vignette #2

- 26 year old G3P2 at 22 weeks, referred to MFM/Perinatology (120 miles away) due to ultrasound findings of:
  - fetal pyelectasis
  - increased nuchal fold
  - mild cerebral ventriculomegaly
  - echogenic intracardiac focus
- Late to care at 19 weeks and missed California genetic screening.
- Patient seen by Perinatology, declined amniocentesis, given cfDNA lab slip, but was unable to have drawn at her home lab.

Case Vignette #2 Continued
cfDNA Utilization by Geography

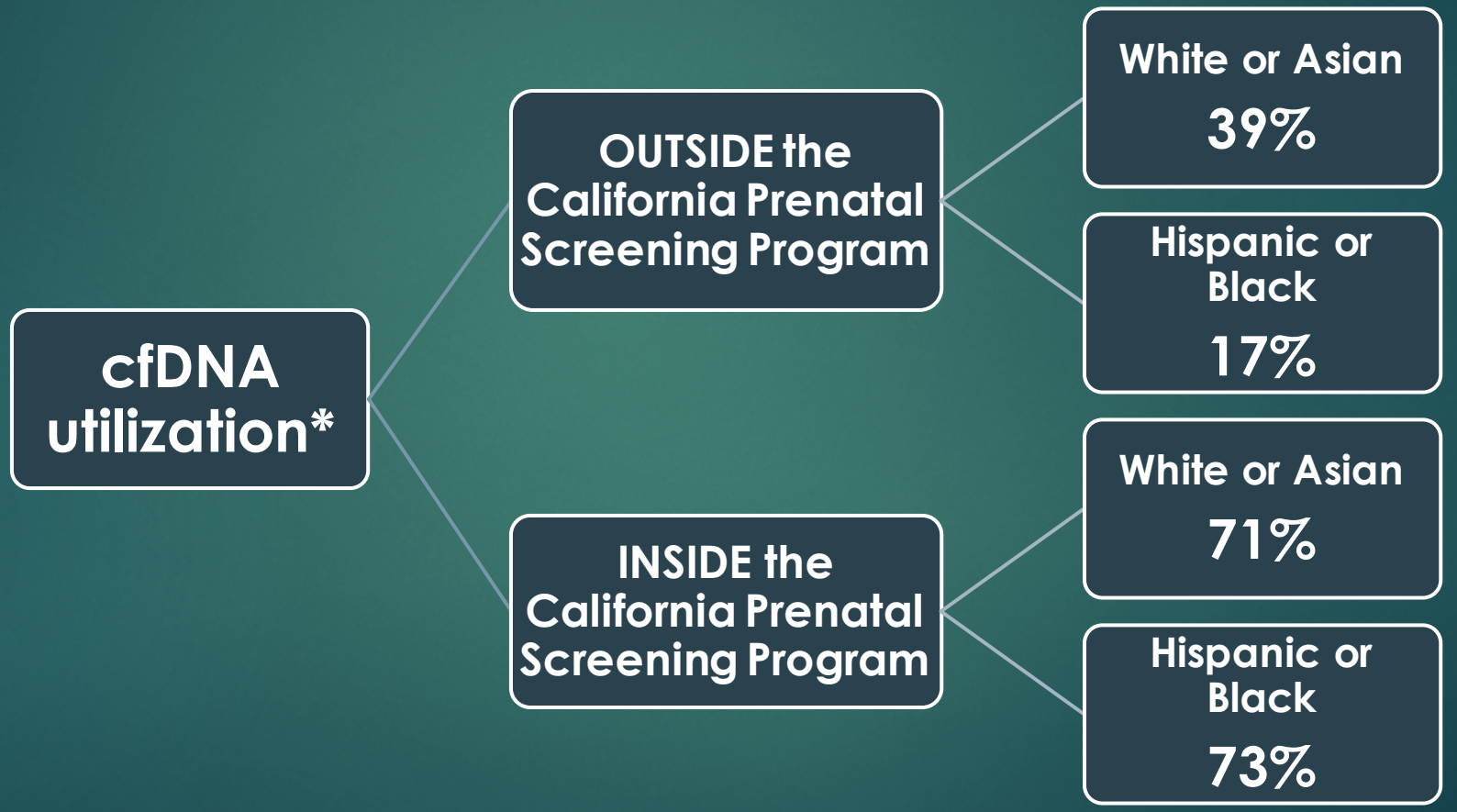


cfDNA utilization*

- **OUTSIDE the California Prenatal Screening Program**
  - Coastal Regions: 37%
  - Inland Regions: 14%
- **INSIDE the California Prenatal Screening Program**
  - Coastal Regions: 72%
  - Inland Regions: 73%

* Unpublished data from CDPH, cfDNA utilization in California, 2015-2018; 300,000 CA-PNS participants each year.

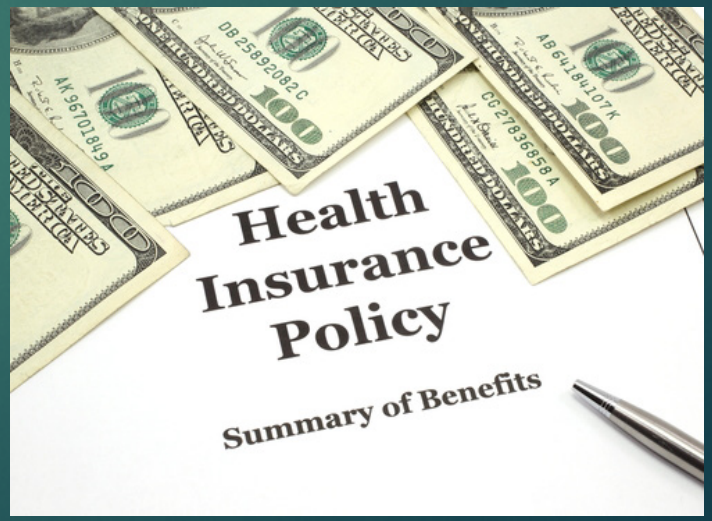
Case Vignette #2 Continued cfDNA Utilization by Race



* Unpublished data from CDPH, cfDNA utilization in California, 2018.

Case Vignette #3

- 34-year-old G2P1 at 13 weeks, insurance refusing to cover cfDNA screening. "Out of pocket" costs quoted at $200 to $2000. Patient unsure what to do.



Case Vignette #3
cfDNA coverage under new CA PNS Program

- In most cases, private health insurance or Medi-Cal is required to cover the fees for the screening program after any deductible or co-pay.
- PNS Program fee does not cover blood draw charges.
- Billed to insurance:
  - $232 for cfDNA screening
  - $85 for msAFP screening

Case Vignette #4

- 21y.o. G1 presents to care at 12 weeks.
- Desires “gender test”

Case Vignette #4
What is reported?

- New CA Prenatal Screening Program:
  - cfDNA can be drawn as early as 10 weeks
    - Will report:
      - Results for Trisomy 21, 18, 13
      - Fetal sex, if patient/provider desires
      - Fetal fraction
  - msAFP screening can be drawn from 15+0 through 21+0

Case Vignette #5

- **Prior California State Screening Program:**
- Patient enters prenatal care at 19+ weeks, missed first and second trimester screening.

- **New California State Screening Program:**
- Patient enters prenatal care at 19+ weeks (dated by 19 week ultrasound), can have cfDNA drawn along with AFP prior to 21 weeks.

Case Vignette #5
What happens with positive results?

- **New California State Screening Program:**
- If fetal aneuploidy (21/18/13) is detected on cfDNA

  Prior to 15w0d:

  - First trimester US will be covered under PNS Program at State-approved PDC site
  - Genetic counseling, CVS, amniocentesis (karyotype +microarray*) will be covered, if patient desires
  - If no-call result due to low fetal fraction, automatic re-draw

* Microarray IF normal karyotype, IF *specific* ultrasound anomalies are found

Case Vignette #5 Continued
What happens with positive results?

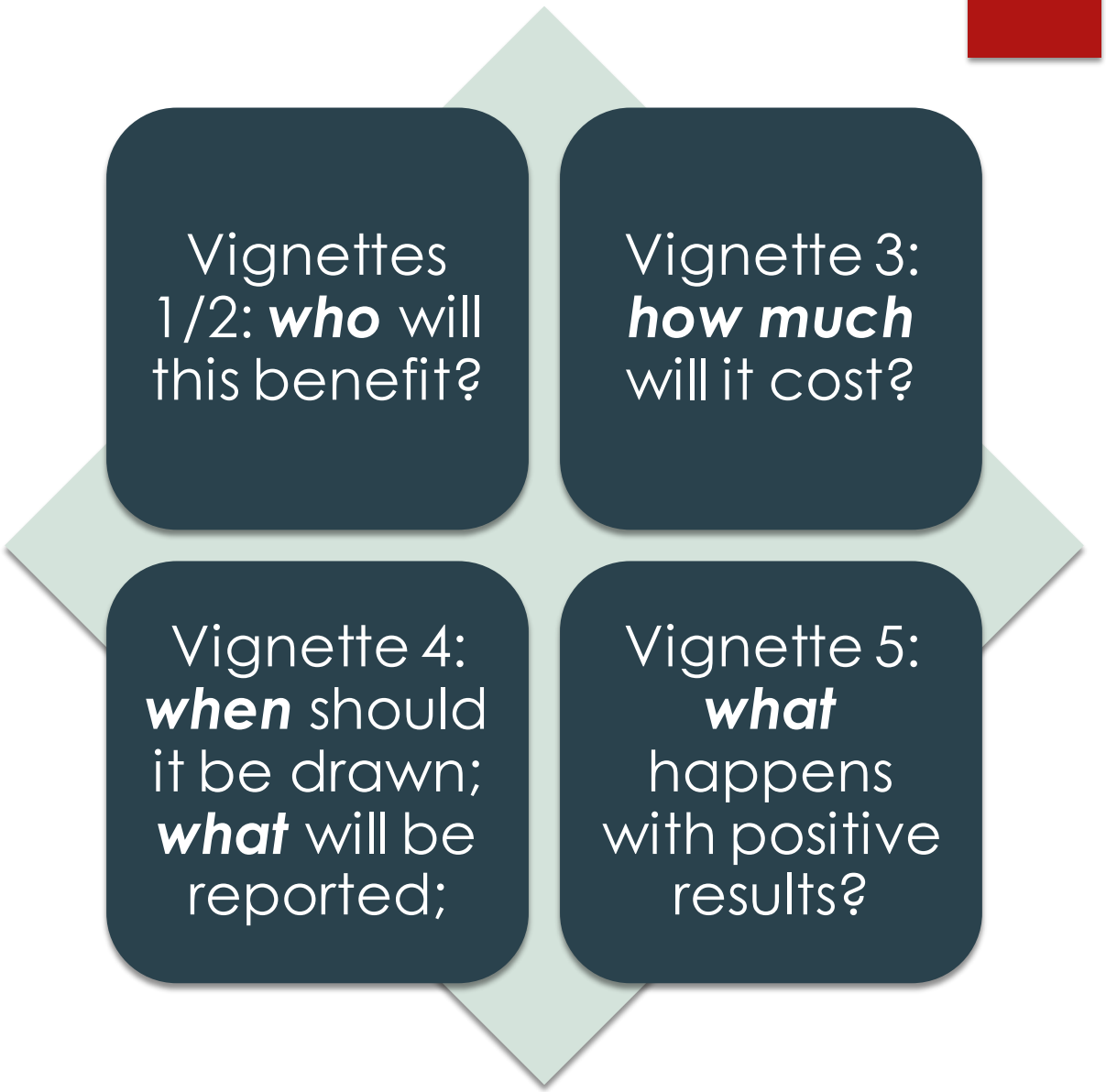
- **New California State Screening Program:**
- If fetal aneuploidy (21/18/13) is detected on cfDNA

  After 15w0d:

  - Ultrasound will be covered under PNS Program at State-approved PDC site
  - Genetic counseling, amniocentesis – up to 24 weeks (karyotype ±microarray*) will be covered, if patient desires
  - If no-call result due to low fetal fraction after 18+0 weeks, automatic referral to PDC

* Microarray IF normal karyotype, IF *specific* ultrasound anomalies are found

Summary


Vignettes 1/2: **who** will this benefit?
Vignette 3: **how much** will it cost?
Vignette 4: **when** should it be drawn; **what** will be reported;
Vignette 5: **what** happens with positive results?

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- *Healthcare heroes (you)!*

References

- *ACOG Practice Bulletin 226: Screening for Fetal Chromosomal Abnormalities. Vol 136, No 4, October 2020.*
- *Gregg et al. Noninvasive prenatal screening for fetal aneuploidy, 2016 update: a position statement of the American College of Medical Genetics and Genomics. June 2016.*
- *Unpublished data from CDPH, cfDNA utilization in California, 2015-2018.*

Further Resources

- *ACOG Practice Bulletin 162: Prenatal Diagnostic Testing for Genetic Disorders, 2016.*
- *Committee Opinion 693: Counseling about Genetic Testing and Communication of Genetic Test Results.*