

# Assessment Tools Training



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# Types of Assessment

- Population status assessment
- Program effectiveness assessment

# Population Status Assessment

- What to assess?
  - Anemia
  - Iron Deficiency
  - Iron Deficiency Anemia

# Anemia

Hemoglobin or hematocrit <5th %ile for healthy individuals of same age, sex, and stage of pregnancy

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# Iron Deficiency (ID)

Iron stores low enough to impair red blood cell production, but not to the point of reducing hemoglobin (Hb) concentration

- assessed by biochemical tests (e.g serum ferritin)
- not detected by Hb test

# Iron Deficiency Anemia (IDA)

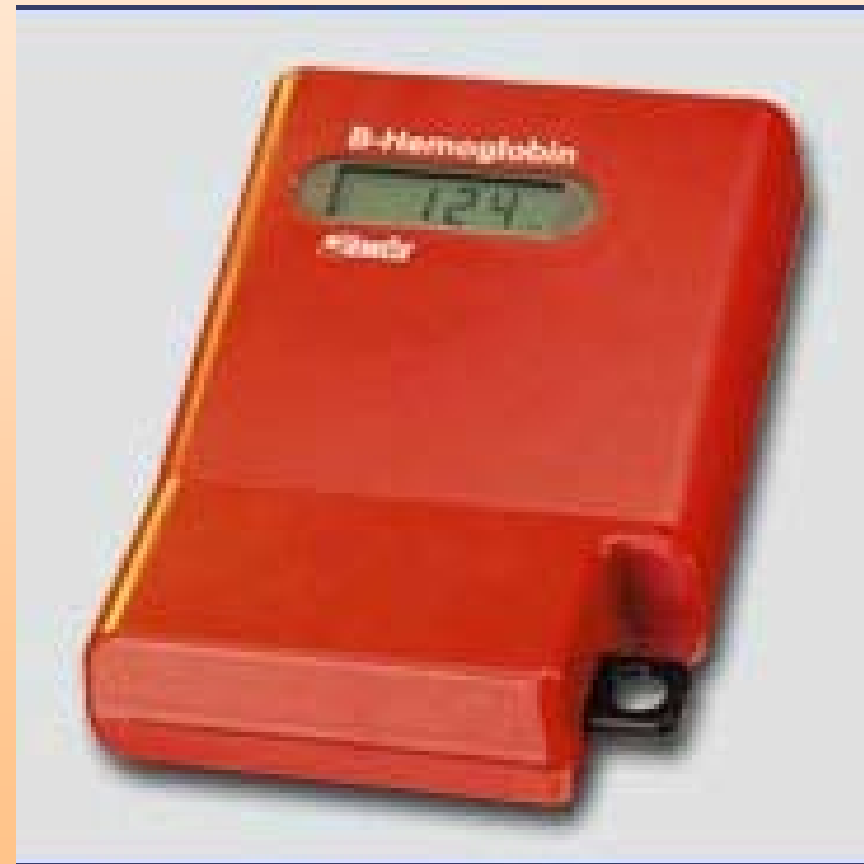
Anemia together with iron deficiency

- e.g. low Hb ***and*** low serum ferritin



# Anemia Assessment

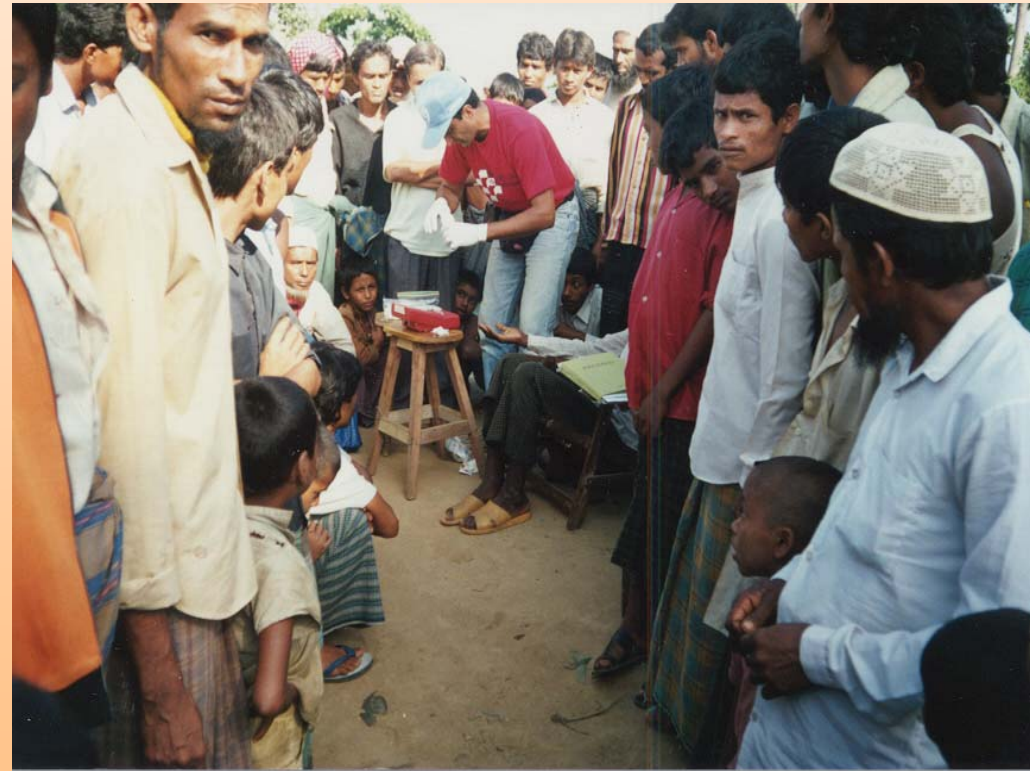
- Hb - commonly used indicator
- HemoCue™ photometer – commonly used instrument



# HemoCue™ System

## ➤ Advantages:

- One blood drop – finger stick
- Portable
- Field friendly
- Easy to use
- Relatively low cost



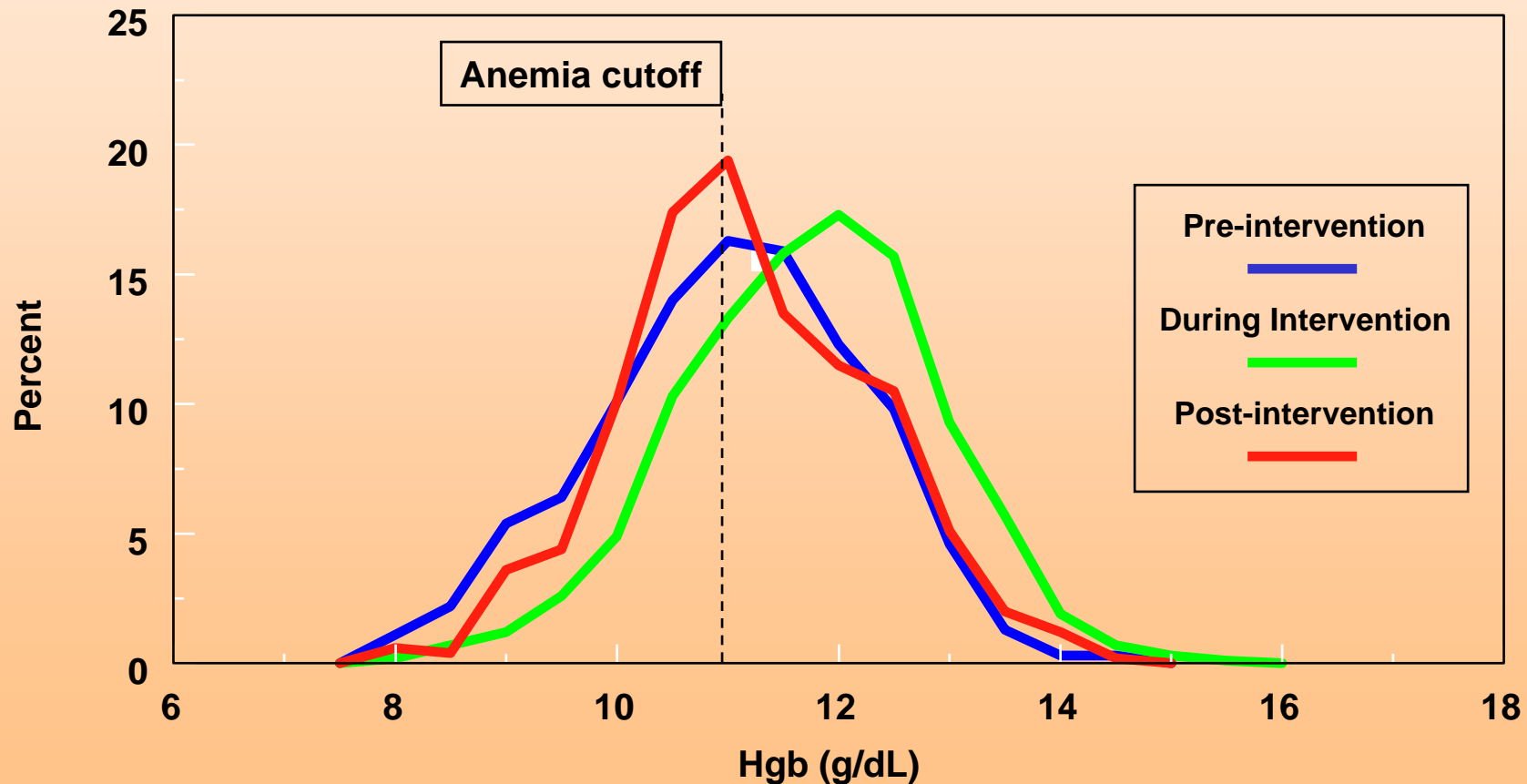
# HemoCue™ System

## ➤ Considerations:

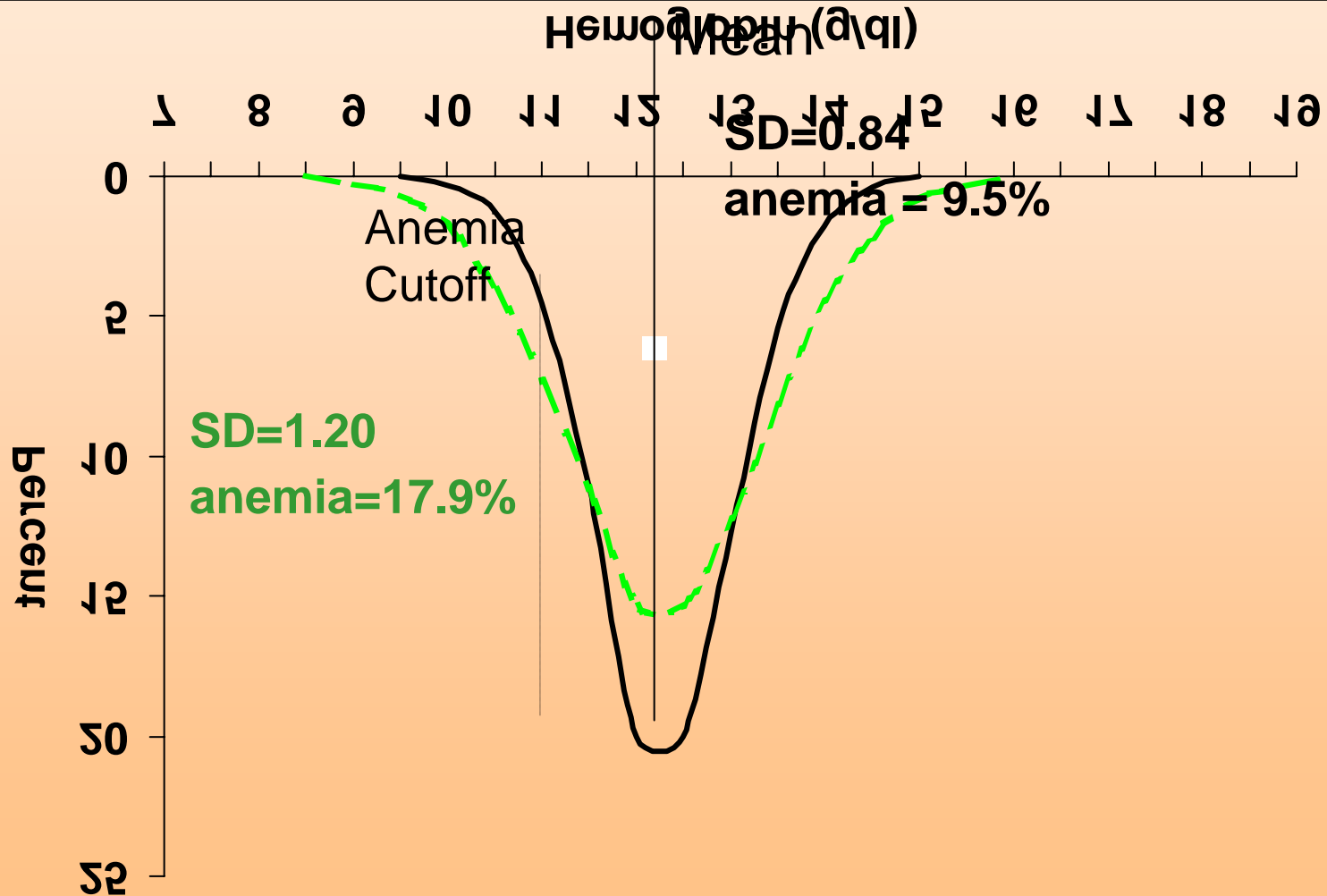
- More variability in Hb data from small (10 $\mu$ L) drop of capillary blood
- Lack of training protocols
- Lack of trainers
- Lack of data quality assessment indicator



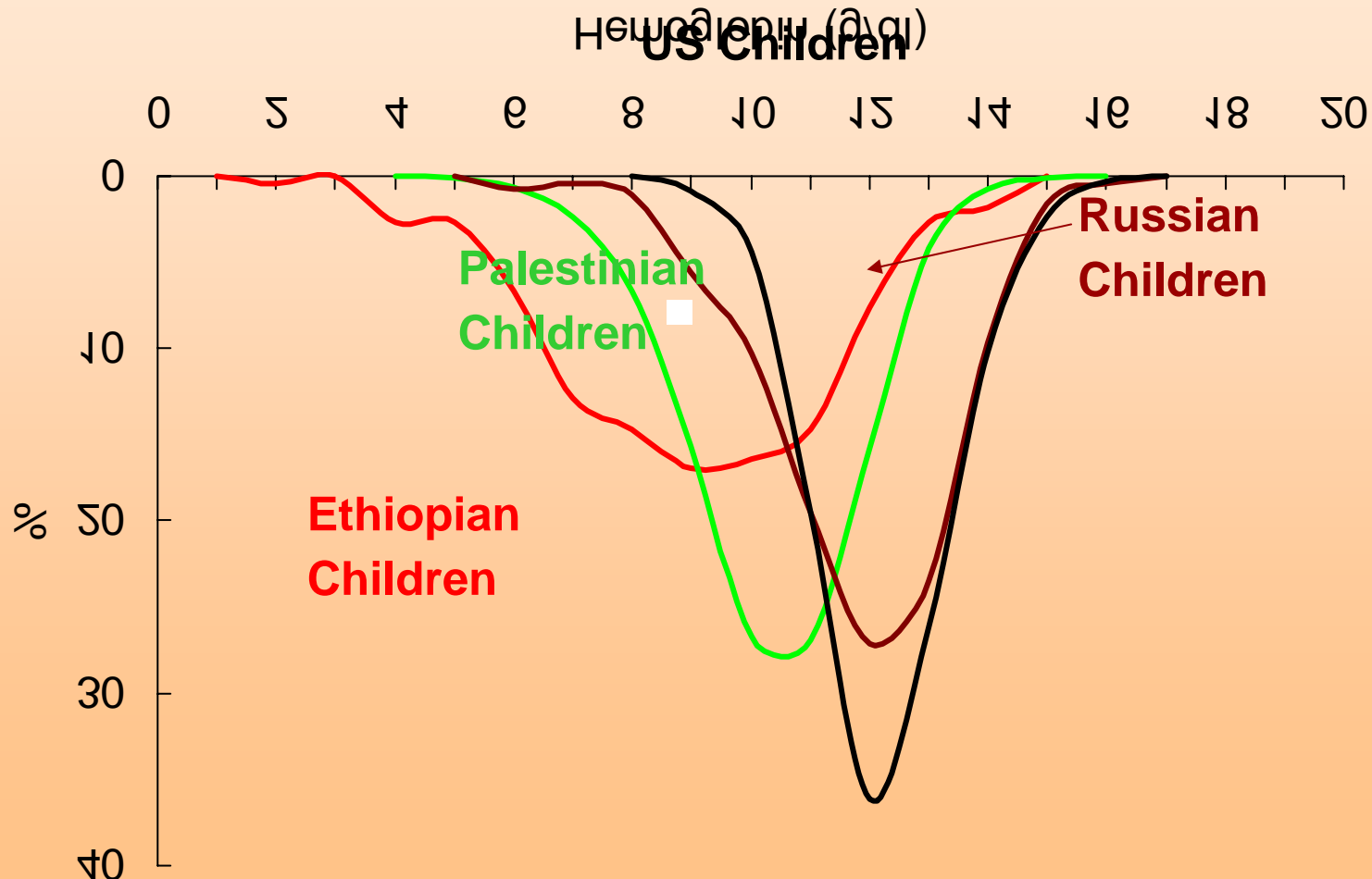
# Impact of Training and/or Testing Procedures on Hb Results



# How to Assess Hb Data Quality?



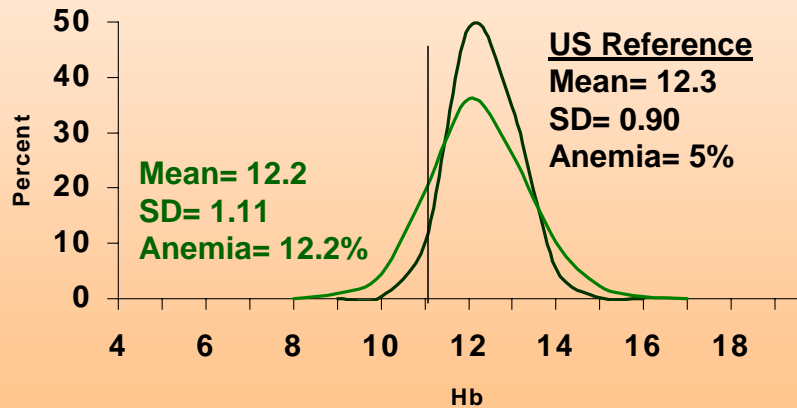
# How to Assess Hb Data Quality?



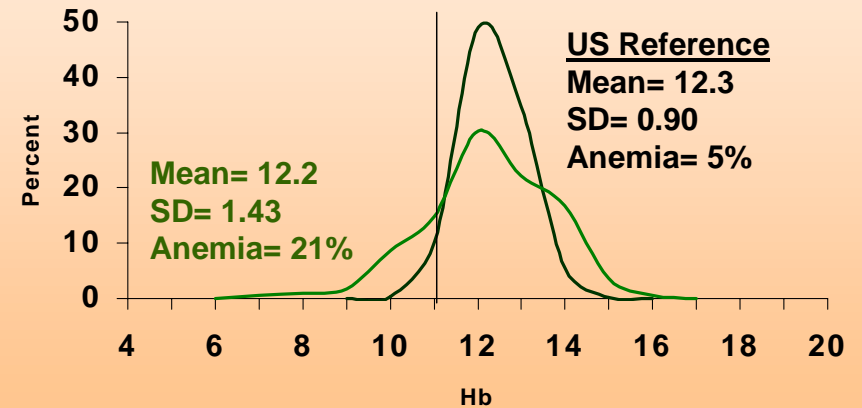
Source: WHO, 2001

# How to Assess Hb Data Quality?

## Result 1



## Result 2



# To Improve Hb Assessment

- Develop standard training protocols and materials
  - e.g. use retractable lancets to ensure consistent punctures
- Use more than two testers per team and monitor inter-tester results
- Collect larger volume of capillary blood (e.g. in microtainer) to reduce variation in Hb distribution
- Agree on Hb data quality indicators

# Disadvantages of Anemia as Assessment Tool

- Anemia – late indicator of iron deficiency; harm to children may already be done
- Impact of iron intervention may not impact Hb status because of other anemia risk factors

# Questions?

- Why let available technology drive how we assess population iron status?
- Why not engage lab product developers to meet our technology needs?
- Why not support development/improvement of low-cost, field friendly technology to assess direct indicators of iron status (e.g. ZP, SF, TfR)?

# Program Effectiveness Assessment

# Need Process Indicators

- What should be minimum population coverage level for fortified baby foods?
- What should be minimum population coverage level for preventive supplement use?
- How long should coverage level be in place before “formal impact evaluation”?
- Could program coverage data be sufficient as indicators of iron deficiency elimination?