

## Newborn Screening ACT Sheet [FSC] Hemoglobin SC Disease (HbSC)

**Differential Diagnosis:** Hemoglobin SC disease.

**Condition Description:** A red cell disorder characterized by the presence of fetal hemoglobin (F) and hemoglobins S and C in the absence of Hb A. The hemoglobins are listed in order of the amount of hemoglobin present (F>S>C). This result is different from FAS which is consistent with sickle carrier.

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### ***YOU SHOULD TAKE THE FOLLOWING ACTIONS:***

- Contact the family to inform them of the screening result.
- Consult a specialist in hemoglobin disorders; refer if needed.
- Evaluate infant and assess for splenomegaly; do complete blood count (CBC).
- Order hemoglobin profile analysis (usually performed by electrophoresis).
- Initiate timely confirmatory/diagnostic testing as recommended by consultant.
- Initiate treatment as recommended by consultant.
- Educate parents/caregivers regarding the risk of sepsis, the need for urgent evaluation for fever of  $\geq 38.5^{\circ}$  C ( $101^{\circ}$  F) and signs and symptoms of splenic sequestration.
- Report findings to newborn screening program.

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**Diagnostic Evaluation:** CBC. Hemoglobin separation by electrophoresis, isoelectric focusing or high performance liquid chromatography (HPLC) shows FSC. DNA studies may be used to confirm genotype.

**Clinical Considerations:** Newborn infants are usually well. Hemolytic anemia and vaso-occlusive complications develop during infancy or early childhood. Complications include life-threatening infection, splenic sequestration, pneumonia, acute chest syndrome, pain episodes, aplastic crisis, dactylitis, priapism, and stroke. Comprehensive care including family education, immunizations, prophylactic penicillin, and prompt treatment of acute illness reduces morbidity and mortality.

### **Additional Information:**

[Grady Comprehensive Sickle Cell Center](#)

[Management and Therapy of Sickle Cell Disease](#)

[Sickle Cell Disease in Children and Adolescents: Diagnosis, Guidelines for Comprehensive Care, and Protocols for Management of Acute and Chronic Complications](#)

[American Academy of Pediatrics](#)

[Sickle Cell Disease Association of America](#)

### **Referral (local, state, regional and national):**

[Testing](#)

Clinical Services

[Comprehensive Sickle Cell Center Directory](#)

[Sickle Cell Information Center](#)

[Find Genetic Services](#)

Disclaimer: This guideline is designed primarily as an educational resource for clinicians to help them provide quality medical care. It should not be considered inclusive of all proper procedures and tests or exclusive of other procedures and tests that are reasonably directed to obtaining the same results. Adherence to this guideline does not necessarily ensure a successful medical outcome. In determining the propriety of any specific procedure or test, the clinician should apply his or her own professional judgment to the specific clinical circumstances presented by the individual patient or specimen. Clinicians are encouraged to document the reasons for the use of a particular procedure or test, whether or not it is in conformance with this guideline. Clinicians also are advised to take notice of the date this guideline was adopted, and to consider other medical and scientific information that become available after that date.

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*LOCAL RESOURCES:* Insert State newborn screening program web site links

State Resource site (insert state newborn screening program website information)

Name	<input style="width: 85%;" type="text"/>
URL	<input style="width: 85%;" type="text"/>
Comments	<input style="width: 85%; height: 40px;" type="text"/>

Local Resource Site (insert local and regional newborn screening website information)

Name	<input style="width: 85%;" type="text"/>
URL	<input style="width: 85%;" type="text"/>
Comments	<input style="width: 85%; height: 40px;" type="text"/>

APPENDIX: Resources with Full URL Addresses

*Additional Information:*

Grady Comprehensive Sickle Cell Center

[http://www.scinfo.org/index.php?option=com\\_content&view=article&id=218:hemoglobins-what-the-results-mean&catid=11&Itemid=21](http://www.scinfo.org/index.php?option=com_content&view=article&id=218:hemoglobins-what-the-results-mean&catid=11&Itemid=21)

Management and Therapy of Sickle Cell Disease

<http://www.nhlbi.nih.gov/health/prof/blood/sickle/index.htm>

Sickle Cell Disease in Children and Adolescents: Diagnosis, Guidelines for Comprehensive Care, and Protocols for Management of Acute and Chronic Complications

<http://www.dshs.state.tx.us/newborn/pdf/sedona02.pdf>

American Academy of Pediatrics

<http://pediatrics.aappublications.org/cgi/content/full/109/3/526>

Sickle Cell Disease Association of America

<http://www.sicklecelldisease.org/>

*Referral (local, state, regional and national):*

Testing

[http://www.ncbi.nlm.nih.gov/sites/GeneTests/lab/clinical\\_disease\\_id/2028?db=genetests&country=United%20States](http://www.ncbi.nlm.nih.gov/sites/GeneTests/lab/clinical_disease_id/2028?db=genetests&country=United%20States)

Clinical Services

Comprehensive Sickle Cell Center Directory

[http://www.scinfo.org/index.php?option=com\\_content&view=article&id=197&Itemid=34](http://www.scinfo.org/index.php?option=com_content&view=article&id=197&Itemid=34)

Sickle Cell Information Center

<http://www.scinfo.org/>

Find Genetic Services

<http://www.acmg.net/GIS/Disclaimer.aspx>

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