Improving Sickle Cell Care
in North & South Carolina

Focus on Sickle Cell Disease

Caring for individuals with sickle cell disease (SCD) in the emergency department and outpatient setting is complex. Funded by a grant from the Agency for Healthcare Research and Quality, Duke University, Community Care North Carolina, NCCEP and NCENA are partnering to conduct the project "Disseminating NIH Evidence Based Sickle Cell Recommendations in North Carolina". In this project investigators have developed a toolbox of decision support algorithms, health maintenance charts, and screening tools for emergency and primary care providers.

Specifically, as the project relates to ED care, the project is intended to:

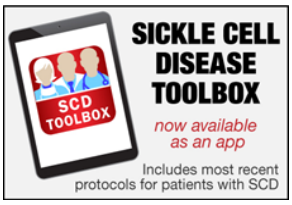
1) Facilitate Evidence Based treatment of Sickle Cell Patients in the Emergency Department
2) Screen and refer patients from the emergency department with unmet social and behavioral health needs that may contribute to high healthcare use
3) Support co-management between primary care providers and sickle cell specialists.

The toolbox is based upon the evidenced based treatment recommendations published by the National Institute of Heart, Lung and Blood in 2014. NCCEP, CCNC, NCENA realize that the algorithms presented are best practices to strive for and depending on ED volume and department acuity at the time of patient presentation, these goals may not be reached.

Tools are available online and below:

Vaso-Occlusive Pain Crisis Algorithm:

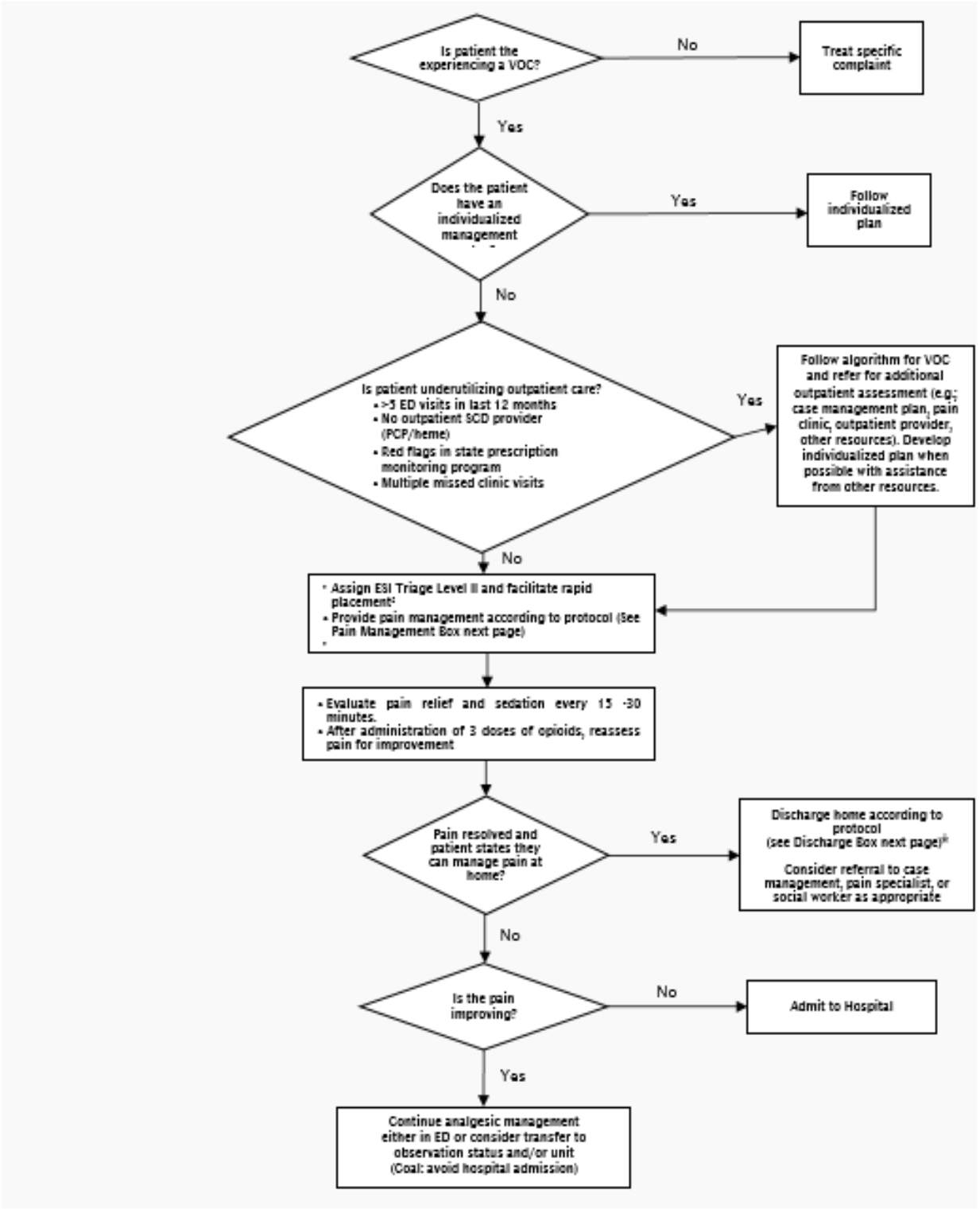
https://sickleemergency.duke.edu/sites/default/files/ccnc-voc-protocol.pdf



The entire toolbox is also available as an app, downloaded to your iPhone, https://www.scdtoolbox.com/, passcode = 1234 for general use or email Dr. Nirmish Shah at Nirmish.shah.@duke.edu for specialty access. The VOC algorithm is located under "Algorithms", Emergency Department VOC.

Emergency Department Vaso-occlusive Crisis Management: Adults and Children

Developed by the CCNC Sickle Cell Task Force with representation and formal endorsement from NC Emergency Nurse's Association and NC College of Emergency Physicians. This algorithm was adapted from the recommendations for the treatment of vaso-occlusive guideline published by the National Institutes of Health, National Institute of Heart, Lung and Blood, *Evidence-Based Management of Sickle Cell Disease: Expert Panel Report*, 2014.[1] These guidelines are based upon best practice and contingent upon institutional resource availability and physician medical judgment.



PAIN MANAGEMENT PROTOCOL

Time related goals are best practices to strive for.

- Use *individual/personalized analgesic dosing* plans if and when available (Electronic medical records).
- Treat pain aggressively & promptly. Rule out other sources of pain than VOC while treating VOC.
- Attempt to contact patients' SCD physician for analgesic suggestions, however, DO NOT delay administration of analgesics.
- Administer first dose as soon as possible given triage and healthcare resources, ideally within 30 min of triage or 60 min of registration.
- Administer intravenous opioids.
- Use the subcutaneous route if obtaining IV access will significantly delay administration of first dose, and, when intravenous access is not possible. Avoid intra-muscular route due to tissue damage and erratic absorption. Use weight based dosing when individual plan is not available. (e.g. *morphine Sulfate, 0.1 mg/kg, or hydromorphone 0.02 mg/kg, Ex: 75 kg = MS 7.5 mg or hydromorphone 1.5 mg)* http://sickleemergency.duke.edu/sites/default/files/final%20weight%20based.pdf
- Allow patients to continue long-acting opioids in the ED, if prescribed as an outpatient.
- Re-assess for pain, pulse oximetry, and sedation, using a validated sedation scale such as RAAS, every 15-30 minutes.
- Re-administer analgesic doses every 15-30 minutes until pain relief is obtained, if the sedation score and oxygenation status are acceptable. Rapid aggressive pain control will decrease the need for admission.
- Repeat doses *may* be escalated by 25% of the initial dose if there is no or minimal improvement in pain score.
- If patient has received 3 doses, re-evaluate
  - For improving but unresolved pain, continue to aggressively treat pain but consider an increase in dose, change in drug and/or re-dosing intervals. Continue to treat in ED or transfer to observation status and/or unit.
  - If pain is resolved, discharge home.
  - For minimal or no change in pain, admit to hospital.
- If facility has the ability and established protocols, consider beginning PCA in the ED after administration of a minimum of 2-3 doses (after initial parenteral doses). Do not delay pain treatment to start PCA.

ADJUVANT AGENTS

- Administer oral or parenteral NSAIDS as an adjuvant analgesic in the absence of contraindications.
- Intravenous or oral hydration at maintenance rate, caution with CHF or renal failure.
- Supplemental oxygen for SPO2 <95% on room air.
- Treat itching with oral antihistamines (in some cases intravenous administration may be required), q 4-6 hours.
- Use non-pharmacologic approaches such as heat and distraction (e.g., music), when available.

DISCHARGE HOME, ANALGESIC PRESCRIPTIONS, AND REFERRALS**

- Consult case management or social work early to identify unmet needs and work with patients with high numbers of ED visits or hospitalizations.
- Encourage patient to contact sickle cell provider to obtain opioid prescriptions.
- If SCD provider not available, provide short course of short acting opioids (e.g., oxycodone, hydrocodone).
- Consult state prescription monitoring database to guide opioid prescription determination: https://nccsrsph.hidinc.com
- Encourage PCP or SCD provider follow up within several days.
- Refer patients to the CCNC Central Call Center for linkage to care management follow-up.

  FAX screening form to CCNC Call Center: 888.978.0645.

[*] Evidence-Based Management of Sickle Cell Disease: Expert Panel Report, 2014. (2014). National Institutes of Health, National Institute of Heart, Lung and Blood. http://www.nhlbi.nih.gov/health-pro/guidelines/sickle-cell-disease-guidelines/sickle-cell-disease-report.pdf.

[**] Internet Citation: Emergency Severity Index (ESI) Implementation Handbook, 2012 Edition: Chapter 3. ESI Level 2. November 2011. Agency for Healthcare Research and Quality, Rockville, MD. http://www.ahrq.gov/professionals/systems/hospital/esi/esi3.html

Sickle Cell Disease Referral Form

Provide the following information for the sickle cell patient to be referred. Please inform the patient they will be contacted by CCNC to assist with the arrangement of additional resources if needed.

Date of Referral from ED:	
Patient Last Name:	
Patient First Name:	
Best contact info for patient: 2nd contact	Name: #: Name #:
Patient DOB:	
Patient Medicaid ID:	
Patient County of Residence	
Referring ED:	
Referring Provider, Credentials, contact	
Patient is aware of referral	☐ yes ☐ no
Primary Care Provider, if known	
Sickle Cell Specialist, if known	
Care Plan Attached	Yes or No General plan Pain specific plan
List Specific Reason for Referral (CHECK ALL THE APPLY)	☐ Emotional ☐ Financial (Insurance, bills) ☐ Medical (Needs PCP) ☐ Prescriptions ☐ Relational Issues/Family Support System ☐ Transportation ☐ Pain Management Additional Comments :
Please fax completed form to:	CCNC Call Center: 888.978.0645
Form Completed By / Date:	

CCNC Referral form: https://sickleemergency.duke.edu/sites/default/files/CM%20Referral%20Form.pdf

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Sickle Cell Education Resource List

General Resource including educational videos/resources
https://sickleaware.nursing.duke.edu/#emergency-clinicians

Resources are also available via mobile app for iphone or android at (https://www.scdtoolbox.com/, code = 1234)

Reference to the NHLBI Recommendations:
https://catalog.nhlbi.nih.gov/sites/default/files/publicationfiles/56-364NFULL.pdf

For additional information regarding the sickle cell tool kit, or to request an in person education session or consultation contact:

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