Translating Guidelines Into Practice

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Chair, NICE Guideline Committee for Sepsis: the recognition, assessment and early management in children and adults

Sepsis: recognition, assessment and early management in children and adults - NICE guideline 51
NICE Quality Standard 2017

5 quality statements

Different process

Different group of people

Aim

• Taking “academic guidelines” from surviving sepsis campaign, through NICE (lots of jobbing clinicians on the committee) and understanding how they can be transformed into deliverable care at the bedside

• The importance of operational tools to translate these guidelines into practice
Multiple failings:
- Clinical care
- Organisation of care

Scope

- Department of Health asked NICE: ‘to produce a guideline on Sepsis: the recognition, diagnosis and management of severe sepsis’
- Aim to focus on diagnosis, assessment and initial management
- Recognise that there are comprehensive critical care guidelines for children and adults.
Overall Quality of Evidence

- Limited evidence exists for the identification and early management of sepsis in primary care or the emergency department.
- Only some of the critical care evidence was relevant or interpretable in a meaningful way for non-critical care settings.
- 137 Recommendations.

What is sepsis and what does this mean for the NHS?

- In sepsis the body’s immune and coagulation systems are switched on by an infection and cause one or more body organs to malfunction with variable severity – which can be life-threatening.
- Although the majority of people with infection do not have and will not develop sepsis, non-specific signs & symptoms can lead to late recognition of people who might have sepsis.
- Balance between the need to recognise and treat sepsis early and the need to avoid widespread antimicrobial resistance.
NICE Guideline approach

• Pragmatic approach for patients with infection
  
a) guidance for assessment of risk factors and identification of potential clinical signs and symptoms of concern
  
b) followed by a detailed structured assessment
• Includes all settings: community, EDs and all hospital clinical areas
• General and specialist healthcare professionals

from bmj.com
a) Identification of people requiring a structured assessment – THINK SEPSIS!

- Clinicians should “think sepsis!” in a similar way to thinking 'could this chest pain be cardiac in origin?'
- Not every patient with infection will have sepsis but if sepsis is not considered then the diagnosis can be missed…just like most people with chest pain are not suffering from a myocardial infarction.

Translation problem:

QS1: People with suspected sepsis are assessed using a structured set of observations to stratify risk of severe illness or death

- NG51 suggests using a structured set of observations to assess the risk of illness severity only in the context of an initial clinical risk assessment/risk factors for sepsis.
  - This is one of the critical steps to avoid over-use of broad spectrum antibiotics or overwhelming of NHS resources.
  - Operationally: “People with suspected sepsis are assessed to stratify risk of severe illness or death using a clinical risk assessment and a structured set of observations…..”
Key Points in the History

• Non-specific, non-localised presentations and may not necessarily have a high temperature

• Pay particular attention to concerns expressed by the person and their family or carers, such as changes from usual behaviour

• Factors that increase the risk of sepsis e.g.
  • <1 year or >75 years, impaired immune systems, surgery in <6 weeks, current or recent pregnancy etc.

b) Structured assessment: why is the NICE guideline needed if there are “new consensus sepsis definitions” (and what is the role of NEWS)?

• qSOFA offers limited explanation on how to confirm or rule out sepsis in general clinical settings

• qSOFA gives mortality risk but “sepsis” includes all patients with BP<100 mmHg and RR>22
  
  *(JAMA 2016; 315(8):801-810)*

• But not all of these patients need antibiotics.
Structured assessment

- GC51 provides easy, structured risk assessment to help clinicians identify those most severely ill requiring immediate potentially life-saving treatment.
- GC51 ensures that patients defined as sepsis by qSOFA are as a minimum assessed as moderate-high risk.
- NEWS/PEWS needs context of suspicion of infection

What about NEWS/PEWS?

- QS uses generic “use a structured set of observations” leaving NHSE/Trusts to decide what should be used in each setting
- Evidence for NEWS is in adult hospitalised patients - limited evidence for NEWS use in sepsis in ED and none for NEWS use in primary care.
- GC51 intention is for the NHS to use the most standardised set of observations possible in each clinical group of patients/setting to allow effective implementation/education, audit and research – could be NEWS if in context of risk factors.
- 2017 NHS England consensus to use NEWS in all settings for adult patients in context of risk of/or infection
- PEWS development has been hindered by non-standard implementation and revision in Trusts.
Structured assessment and management

a) initiating/escalating care
   • age-specific clinical criteria to gauge the risk of sepsis in those with infection
   • people at high risk of sepsis receive empirical broad spectrum antibiotics and intravenous fluid resuscitation in a suitable hospital environment

b) ensures appropriate de-escalation if sepsis is less likely and broad spectrum antibiotics not required

QS2: People with suspected sepsis in acute hospital settings and at least 1 of the criteria indicating high risk of severe illness or death, have the first dose of intravenous antibiotics and a review by a senior clinical decision-maker within 1 hour of risk being stratified

• Sickest patients need treating as medical emergency
• Clinical judgement essential - sepsis cannot be diagnosed by numbers/algorithm, inexperience can lead to missed diagnosis or over-use of antibiotics or resources
• Time window needs to address sickest patients and create auditable, researchable NHS data
Translation problem: “Senior clinical decision maker” - 2 components

• A) experienced enough clinician to de-escalate (the majority) of people who do not have sepsis to other clinical pathways and avoid inappropriate use of broad spectrum antibiotics in people who meet risk assessment criteria in high or moderate risk patients, while rapidly treating patients with sepsis or suspected sepsis.

• is component of rationale to send sickest patients to ED and not give broad spectrum antibiotics in primary care.

“Senior clinical decision maker” - 2 components

• B) If a high risk patient fails to respond to initial management (antibiotics and intravenous fluids), a consultant (in the relevant speciality) who can direct care, in person or via the telephone depending on the context/clinical situation.

• For the NHS to not require senior responsibility would undermine the importance of treating high risk sepsis with the same urgency as any other medical emergencies with immediate treatment needs (cardiac, trauma etc).
QS2 Translation problem: “...have the first dose of intravenous antibiotics and a review by a senior clinical decision-maker within 1 hour of risk being stratified”

Time window needs to address sickest patients and create auditable, researchable NHS data

• Evidence limited – so sickest patients to attend ED, not for GPs or paramedics to give antibiotics (which would likely cause overuse of antibiotics and time delays in primary care)
  • Recent evidence presented from the University of Warwick (M Smyth)
  • Implications for ambulance delays are same as for any medical emergency (almost all UK <1 hr from ED)

QS4: People with suspected sepsis in acute hospital settings who receive intravenous antibiotics or fluid bolus are seen by a consultant if their condition fails to respond within 1 hour of initial treatment.

Translation Problem:

NICE GC51 recognised differences in service delivery as may be in person or telephone advice from consultant depending on environment/scenario.
• QS3: People with suspected sepsis in acute hospital settings who need treatment to restore cardiovascular stability have an intravenous fluid bolus within 1 hour of risk being stratified.

• QS5: People with suspected sepsis who have been stratified as at low risk of severe illness or death are given information about symptoms to monitor and how to access medical care.

Translation problem: Role of lactate

• NG51 uses lactate to guide fluid management and urgency of contacting consultant in deteriorating patient
Example: presentation to primary care

- Algorithm for rapid assessment of history/risk factors
- Structured clinical assessment indicates risk of death from sepsis, then:
  - High risk “blue light” transfer to hospital
  - Moderate-high risk assess for definitive diagnosis and decide whether can be treated safely out of hospital
  - Low risk safety net

Example: high risk in ED

- Requires immediate assessment by senior clinical decision maker
- Intravenous broad spectrum antibiotics within 1 hour
- Point of care lactate guides fluid therapy and involvement of critical care teams
- Senior clinical decision maker can “de-escalate” if either alternate diagnosis or if good response to initial therapy
Example: moderate risk in ED

- Specifies clinical parameters and blood tests to be carried out
- Requires assessment of patient and test results by clinician within 1 hour
- Requires senior clinical decision maker review within 3 hours if meets >=2 moderate-high risk criteria to decide re broad spectrum antibiotics if not moved to high risk pathway

Links to other NICE Guidance

- 22 related NICE guidelines (+ 2 in development)
- Rule out and/or treat high risk sepsis then follow other guidance if relevant
- Guideline committee took other Guidelines into account (eg intravenous fluids)
- Full alignment of guideline pathways for clarity is under discussion by NICE (eg Feverish illness in under 5s)
Information for People with Sepsis

• Information in emergency setting for patients and their carers
  eg ensuring a care team member is nominated to give information to families and carers during resuscitation

• Information for those assessed for but not diagnosed with sepsis

• Information when discharged home following sepsis

Training

• All healthcare staff and students
  • primary and community care (including those working in care homes)
  • hospital staff

• Regular, appropriate training in
  • assessing people’s clinical condition
  • identifying, assessing and managing sepsis
CG51 Research Recommendations

- Epidemiology of the incidence, presentation and management of sepsis in the UK
- Use of early warning scores (NEWS, PEWS) in primary care and ED
- Derivation and validation of clinical decision rules to rule sepsis in/out at presentation to hospital
- Clinical and cost effectiveness of new point of care tests against NHS standards of care

Implementation

- NICE
- UK Sepsis Trust
- Health Education England
- NHS England
- ….AHSNs, Royal Colleges etc
NHS England / Cross system Sepsis Board
Chair: Prof Celia Ingham-Clark

• 75% of organisations did not intend to use CG51 exactly as published
• Need for as much standardisation as possible to be able to measure and research
• how to use NEWS in context of suspected sepsis alongside experienced clinical review

Local and Regional implementation

Development of a Regional Paediatric Sepsis Screening Tool.

Dr Helen Rutkowska
On behalf of the Wessex PCCN Sepsis Working Group
Development of paediatric screening tool

13 PDSA cycles
5 pilot hospitals within the region
3 subsequent updates…. (CQUIN)

User feedback
Audits completed Jan 2016 & Jan 2017

Identification of relevant Documents : NICE, sepsis 6, UKST etc

Comparison with new NICE guidance on sepsis

Operational difference to NICE CG51:
2 clinical criteria required rather than 1 for high risk trigger of senior review and antibiotics.
Summary of conclusion

- Detailed analysis of Wessex paediatric tool in comparison to NICE
- NICE single criterion trigger increases the number of patients requiring urgent senior review
- Interestingly, total ceftriaxone use at UHS acute paediatrics did not increase significantly
- Wessex tool has less ‘false positives’

NB

- Retrospective analysis and low yield of blood cultures positive sepsis so needs further audit/implementation assessment.
- May or may not be applicable to primary care
- Can PEWS be standardised better nationally?

What needs to be done next?

- Operational consensus
- High quality audit and research
- Review and revision of pragmatic guidelines locally, regionally and then NICE
- PEWS standardisation
Good news and Bad news

Bad news?
Good news!

• Very close to agreement for UKST tools / NICE formal alignment
• Despite many presentations, NICE GC51 provides a framework for many different NHS settings
• Providers, regions, specialities and NHSE need to work to avoid different implementation in these settings to be able to conduct audit and research

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Thank you