# Reducing the door to needle time for antibiotics in suspected neutropenic sepsis for patients on chemotherapy using a dedicated clinical pathway.

**Descriptor:**

This audit will determine the timing of the initial treatment of patients with suspected neutropenic sepsis, their immediate management and the use of a dedicated care bundle.

**Background:**

Neutropenic sepsis is a medical emergency and can be a fatal complication of cytotoxic chemotherapy. The NICE Clinical Guideline advises door to needle time of less than one hour in patients with suspected neutropenic sepsis [1]. It has been recommended in the NHS Standard Contract for Cancer that there should be systems in place for urgent assessment and dedicated care bundles and clinical pathways for managing suspected neutropenic sepsis [3]. We have developed a robust clinical pathway based on the ‘Sepsis Six Care Bundle’ to treat patients with suspected neutropenic sepsis, reduce time to antibiotics and improve outcomes for these patients.

## The Cycle

**The standard:**

• Patients presenting to a dedicated oncology helpline who have received chemotherapy within six weeks and have infective symptoms and or pyrexia of 38°C or more have first line empirical antibiotics within one hour of arrival

• The use of a suspected neutropenic sepsis dedicated care pathway

• A record of observations on arrival

   - Temperature

   - Heart rate

   - Blood pressure

   - Respiratory rate

   - Oxygen saturations

   - GCS

• A record of immediate investigations

   - Blood cultures (peripheral and central, if central venous catheter in situ)

   - FBC, U&Es, LFTs, CRP, glucose, lactate, clotting screen

   - Other relevant specimens, sputum, urine, wound swab

   - A record of fluid bolus

   - A record of urine output and need to catheterise

   - A record of MASCC (Multinational Association for Supportive Care in Cancer) Risk Index, indicating high or low risk patients

**Target:**

• 100% of patients with suspected neutropenic sepsis receive antibiotics within one hour of arrival to an oncology helpline

• 100% of patients have documentation in a dedicated care pathway

• 100% of patients have a record of the initial observations and initial investigations

• 100% of patients have a record of the provision of a fluid bolus and fluid balance monitoring and if not, a reason why

• 100% of patients have documentation of the MASCC score

## Assess local practice

**Indicators:**

• Percentage of patients with suspected neutropenic sepsis who receive antibiotics within one hour

• Percentage of patients with documentation in a dedicated care pathway

• The percentage of patients with documentation of initial observations and initial investigations

• The percentage of patients with a record of fluid bolus and fluid balance monitoring

• The percentage of patients with documented MASCC score

**Data items to be collected:**

- Arrival time

- Time of first dose of antibiotics given

- MASCC score

- Demographics

- Gender

- Age

- Cancer details

- Aim of treatment

- Regime of chemotherapy

- First/second line treatment or other

- Need for ITU/HDU admission

- Outcome: continuation of chemotherapy/cessation of chemotherapy/death

**Suggested number:**

Over a period of two weeks or fifty, patients admitted to a designated oncology helpline with suspected neutropenic sepsis.

**Suggestions for change if target not met:**

1. Multidisciplinary suspected neutropenic sepsis clinical pathway widely available in all appropriate clinical area

2. Multidisciplinary team education programme developed for all staff

3. Patient Group Direction (PGD) for nurse led prescribing/delivery of first dose of antibiotics

4. Prospective, continuous audit, monthly

**Resources:**

- Helpline staff

- Junior oncology doctors on call

- Clinical Audit team

**References:**

1. National Institute for Health and Care Excellence (NICE) (CG151) September 2012 <http://www.nice.org.uk/nicemedia/live/13905/60866.60866.pdf>
2. Sepsis Six Care Bundle, Society of Critical Care Medicine. 2012
3. NHS England Standard Contract for Cancer: Chemotherapy (Adult). Section B Part 1- Service Specifications <http://www.england.nhs.uk/wp-content/uploads/2013/06/b15-cancr-chemoth.pdf>

**Editor's comments:**

This audit template can be used by all members of an oncology department and can be used in as a prospective, continuous audit or retrospective audit.

**Submitted by:**

Dr C. Candish on behalf of Dr A Williams

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