



Nursing Assessment and Management of Sepsis: A Patient Care Case Study

Mr David Okafor — Fictitious Patient Scenario

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1. Introduction

Patient care at Level 6 nursing demands the critical integration of clinical knowledge, evidence-based frameworks, and professional judgement to manage complex, time-sensitive presentations with skill, compassion, and rigour. Sepsis constitutes one of the most urgent clinical emergencies encountered in acute nursing settings: NHS England (2017) estimates that sepsis causes approximately 37,000 deaths annually in the United Kingdom, with the World Health Organization (2019) identifying 11 million sepsis-related deaths globally each year. Early nursing recognition, structured escalation, and timely bundle-based intervention are the three pivotal pillars in reducing mortality and improving patient trajectories.

This case study critically examines the nursing assessment and management of Mr David Okafor (a fictitious patient constructed for educational purposes only), a 72-year-old male admitted to an acute medical ward with community-acquired pneumonia (CAP) complicated by sepsis. Employing the ABCDE assessment framework, the National Early Warning Score 2 (NEWS2), the Sepsis Six care bundle, and the Roper-Logan-Tierney (RLT) Activities of Living model, this paper analyses the nursing response across the acute admission, care planning, interprofessional collaboration, ethical considerations, and discharge planning. All sources are referenced using APA 7th edition.

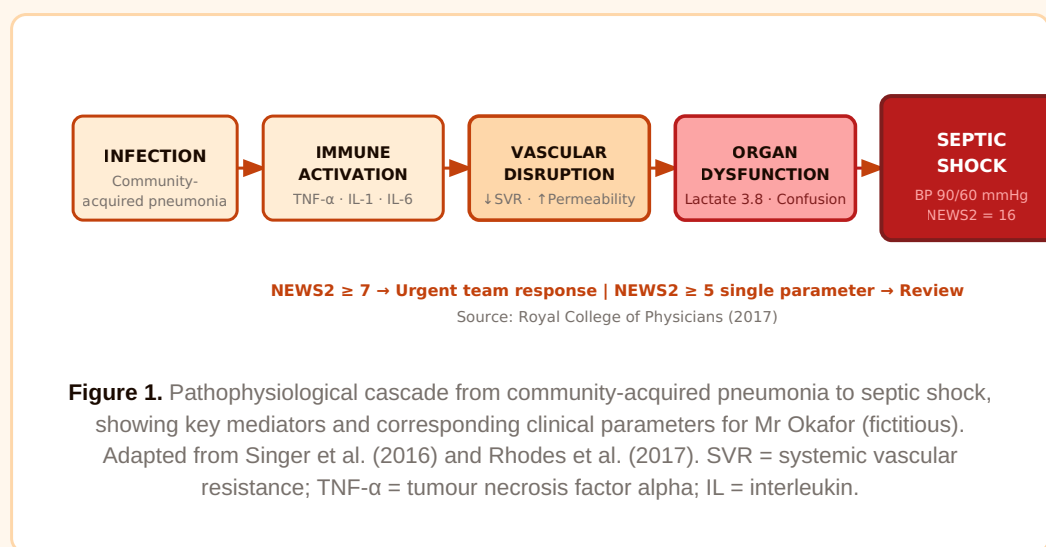
2. Case Overview and Pathophysiology of Sepsis

PATIENT	Mr David Okafor (fictitious)
AGE	72 years
PMH	Hypertension · Atrial fibrillation (rate-controlled) · Type 2 diabetes mellitus
MEDICATIONS	Amlodipine 10mg · Warfarin 3mg · Metformin 1g BD · Ramipril 5mg
PRESENTING COMPLAINT	Acute confusion, rigors, productive cough (green sputum), fever — found at home by daughter
ADMISSION ROUTE	Emergency ambulance → A&E → acute medical ward

On arrival, initial nursing observations revealed: respiratory rate (RR) 24 breaths per minute; peripheral oxygen saturation (SpO₂) 88% on room air; blood pressure (BP) 90/60 mmHg; heart rate (HR) 118 beats per minute (irregular, consistent with known AF); temperature 38.9°C; and an AVPU consciousness level of V (responding to Voice), with agitation and disorientation. These findings generated a NEWS2 aggregate score of 16, mandating immediate emergency team activation per Royal College of Physicians (2017) guidance. Subsequent investigations demonstrated right lower lobe consolidation on chest X-ray, elevated white cell count ($18.2 \times 10^9/L$), C-reactive protein (287 mg/L), lactate (3.8 mmol/L), and point-of-care blood glucose of 14.2 mmol/L. Blood cultures were dispatched. Mr Okafor met the internationally accepted SEPSIS-3 diagnostic criteria: "life-threatening organ dysfunction caused by a dysregulated host response to infection" (Singer et al., 2016, p. 801).

The pathophysiology of sepsis centres on a dysregulated innate immune response to infecting microorganisms. Pattern recognition receptors activate a cascade of pro-inflammatory cytokines — including tumour necrosis factor-alpha (TNF- α), interleukin-1 β , and interleukin-6 — that collectively disrupt microvascular endothelial integrity, reduce systemic vascular resistance, impair

cellular oxygen extraction, and trigger a coagulopathic state (Rhodes et al., 2017). In Mr Okafor, the clinical sequelae of this cascade were manifest as vasodilatory hypotension (BP 90/60 mmHg), compensatory tachycardia, tachypnoea driven by metabolic acidosis, and acute delirium secondary to cerebral hypoperfusion. The lactate of 3.8 mmol/L — above the 2.0 mmol/L threshold — confirmed tissue hypoxia at cellular level, establishing the diagnosis of septic shock as defined by SEPSIS-3 criteria (Singer et al., 2016). Figure 1 illustrates the pathophysiological cascade from infection to septic shock.



3. Primary Assessment, NEWS2 Escalation, and SBAR Communication

On reception to the acute medical ward, the admitting nurse immediately implemented the ABCDE (Airway, Breathing, Circulation, Disability, Exposure) structured assessment approach, which Massey et al. (2017) identify as the gold-standard systematic framework for recognising and responding to acutely deteriorating patients. ABCDE ensures that life-threatening clinical priorities are addressed in a logical sequence before secondary assessment proceeds.

Airway assessment confirmed patency; Mr Okafor was able to phonate and respond to voice, with no evidence of stridor or obstruction. **Breathing** assessment revealed SpO₂ of 88% on room

air with an RR of 24 breaths per minute — findings consistent with hypoxaemic respiratory failure secondary to pneumonia-related ventilation-perfusion mismatch. High-flow oxygen at 15 litres per minute via non-rebreather mask was immediately commenced, with target SpO₂ of ≥94% as recommended in the NICE (2016) sepsis guideline NG51. **Circulation** assessment confirmed BP 90/60 mmHg (markedly reduced from his treated hypertensive baseline), HR 118 bpm and irregular, cool peripheries, and a prolonged capillary refill time of three seconds — indicating distributive (septic) shock physiology. **Disability** assessment using the AVPU scale identified a level of V (responding to Voice), with agitation and acute confusion meeting the criteria for delirium — a clinical finding associated with significantly increased mortality and prolonged hospital stay in elderly patients (Inouye et al., 2014). **Exposure** revealed no skin rash, pressure ulceration, intravenous cannula sites of concern, or wound — excluding skin-source sepsis.

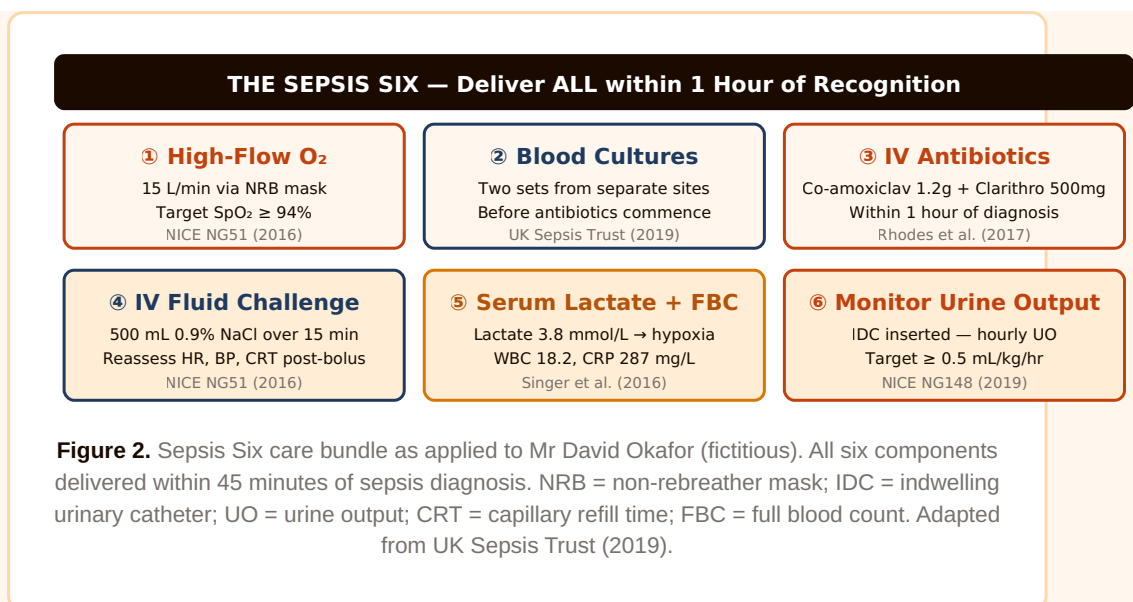
The NEWS2 aggregate score on admission was 16, as summarised in Table 1 below. A score of this magnitude mandates immediate emergency team activation per Royal College of Physicians (2017) protocol. The admitting nurse employed the SBAR (Situation-Background-Assessment-Recommendation) structured communication framework to convey findings to the on-call medical registrar in a concise, unambiguous format: Situation — "Mr Okafor, 72 years, presenting with suspected sepsis, NEWS2 16, BP 90/60, SpO₂ 88%"; Background — existing medical history and medications; Assessment — clinical findings and concerns; Recommendation — immediate senior review and Sepsis Six activation. Massey et al. (2017) confirm that SBAR use in deteriorating patient scenarios significantly reduces communication error and delays in clinical intervention, aligning with the NMC Code's (NMC, 2018) requirement to share information clearly, accurately, and in a timely manner.

Physiological Parameter	Admission Value	NEWS2 Score	4 Hours Post-Treatment	NEWS2 Score
Respiratory Rate (breaths/min)	24	2	18	0
SpO ₂ (%) — Scale 1	88%	3	95%	0
Supplemental Oxygen	Yes (15 L NRB)	2	Yes (28% Venturi)	2
Systolic Blood Pressure (mmHg)	90	3	118	0
Heart Rate (bpm)	118	2	88	1
Level of Consciousness (AVPU)	V — Confused	3	A — Alert	0
Temperature (°C)	38.9°C	1	37.4°C	0
Total NEWS2 Score	—	16	—	3

Table 1. National Early Warning Score 2 (NEWS2) for Mr David Okafor (fictitious) on admission and at four hours post-commencement of Sepsis Six bundle. NEWS2 scoring system adapted from Royal College of Physicians (2017). NRB = non-rebreather mask. AVPU = Alert, Voice, Pain, Unresponsive.

4. Care Planning and Nursing Interventions

Following medical review and formal sepsis confirmation, the Sepsis Six care bundle (UK Sepsis Trust, 2019) was activated as a nurse-led, time-critical intervention package. The Surviving Sepsis Campaign (Rhodes et al., 2017) demonstrates that administration of all six components within one hour of sepsis recognition reduces mortality by up to 25%. Figure 2 summarises the six bundle elements as applied to Mr Okafor's care.



High-flow oxygen at 15 L/min via non-rebreather mask was already established during initial ABCDE assessment. Continuous SpO₂ monitoring confirmed improvement to 95% within 30 minutes, enabling a planned step-down to a 28% Venturi mask to maintain the target range of 94–98%. Given that Mr Okafor's background history did not include chronic obstructive pulmonary disease, there was no hypercapnic respiratory drive concern contraindicating high-flow oxygen delivery.

Blood cultures (two sets from peripheral venepuncture sites) were obtained prior to antibiotic administration to preserve maximum microbiological yield, consistent with NICE (2016) guideline NG51. Intravenous co-amoxiclav 1.2g and clarithromycin 500mg were prescribed and administered within 45 minutes — within the one-hour target advocated by the Surviving Sepsis Campaign (Rhodes et al., 2017) for patients in whom sepsis is suspected. A 500 mL bolus of 0.9% sodium chloride was administered over 15 minutes; post-bolus reassessment demonstrated improvements in HR (from 118 to 98 bpm), BP (from 90/60 to 108/70 mmHg), and capillary refill time (from three to two seconds). An indwelling urinary catheter was inserted to enable accurate hourly fluid balance documentation, with the dual purpose of early detection of acute kidney injury (AKI) — for which Mr Okafor carried multiple risk factors including age, ramipril therapy, hypertension, and

haemodynamic compromise — and monitoring for therapeutic response to fluid resuscitation (NICE, 2019).

Metformin was withheld immediately in consultation with the medical team, given the AKI risk and haemodynamic compromise. A subcutaneous insulin sliding scale was initiated to manage hyperglycaemia (blood glucose 14.2 mmol/L), targeting a range of 6–10 mmol/L per local protocol. Warfarin was withheld given the interaction risk with clarithromycin and the coagulopathic effects of systemic sepsis; the prescribing pharmacist was consulted regarding bridging anticoagulation decisions.

The care plan was structured holistically using the Roper-Logan-Tierney (RLT) Activities of Living model (Roper et al., 2000), which assesses patients across 12 fundamental activities affected by illness. For Mr Okafor, priorities included: *breathing* (oxygen delivery, respiratory monitoring, positioning at 45°); *maintaining a safe environment* (infection prevention and control, fall risk assessment given confusion — St Thomas's Risk Assessment Tool applied); *communicating* (delirium management using the delirium care bundle, regular family liaison, hourly nursing presence to reassure); *eating and drinking* (nil by mouth initially, with dietitian referral and swallowing safety screening by speech and language therapy once condition stabilised); *elimination* (catheter care, strict fluid balance, bowel monitoring). The Department of Health's (2012) 6Cs — care, compassion, competence, communication, courage, and commitment — underpinned every interaction, ensuring that clinical efficiency did not displace the therapeutic relationship and dignity-centred care that define professional nursing.

5. Interprofessional Working and MDT Collaboration

Mr Okafor's multi-system presentation necessitated co-ordinated multidisciplinary team (MDT) working, consistent with the NHS Long Term Plan's (NHS England, 2021) commitment to integrated, person-centred care. The ward nurse functioned as the primary co-ordinating professional — maintaining continuity, ad-

vocating for Mr Okafor's safety and preferences, and facilitating information flow across disciplines — in accordance with the NMC Code's (NMC, 2018) requirement to work co-operatively within teams while retaining personal accountability.

The medical registrar led pharmacological management, sepsis source-control decisions, and escalation pathways. The ward pharmacist was an immediate MDT priority given two critical medicine interactions: clarithromycin's CYP3A4-mediated inhibition substantially increases warfarin anticoagulant effect, creating hemorrhage risk; concurrently, metformin's lactate-increasing potential in the context of pre-existing hyperlactataemia and AKI risk warranted urgent withholding and review. Physiotherapy was requested for chest physiotherapy to aid sputum clearance, early mobilisation planning, and prevention of ventilator-associated complications. Dietetic input was requested within 24 hours given Mr Okafor's type 2 diabetes, anticipated periods of reduced oral intake, and the metabolic demands of acute infection. The liaison psychiatry team was notified of his acute delirium — a syndrome associated with significantly elevated in-hospital mortality and accelerated long-term cognitive decline in older adults (Inouye et al., 2014) — to guide non-pharmacological delirium management and minimise antipsychotic prescribing.

6. Ethical and Legal Dimensions

Mr Okafor's acute confusional state on admission raised immediate questions regarding informed consent and decision-making capacity. The Mental Capacity Act 2005 (MCA) establishes a legal presumption of capacity that must not be displaced without a formal, decision-specific assessment. On admission, the ward nurse conducted a bedside capacity assessment against the MCA's four-stage functional test: the ability to understand, retain, weigh, and communicate information relevant to a proposed decision. Given Mr Okafor's confusion, agitation, and failure to consistently follow or retain explanations of his clinical situation and proposed interventions, a time-specific determination of incapa-

city was made and documented in accordance with MCA requirements.

Emergency treatment proceeded under Section 5 of the MCA 2005 in Mr Okafor's best interests, with his daughter — his nominated next of kin and principal carer — consulted throughout. Her contextual knowledge of his baseline functional capacity, expressed wishes, values, and cultural preferences was instrumental in informing best-interest decision-making and ensuring that clinical actions remained grounded in his identity as a person beyond his acute illness. As his clinical condition improved — evidenced by the NEWS2 reduction from 16 to 3 over four hours (Table 1) — capacity was reassessed and reinstated, enabling Mr Okafor to resume active participation in decisions about his ongoing care.

The NMC Code (NMC, 2018) requires nurses to respect individuals' rights to accept or decline treatment, to act in their best interests when capacity is impaired, and to communicate openly and honestly with patients and their families. These obligations were actively and documentably enacted throughout Mr Okafor's admission. The principle of non-maleficence was further considered in relation to medication risks: withholding metformin and warfarin, and deferring further fluid resuscitation pending response reassessment, reflected careful balancing of intervention benefit against iatrogenic harm risk.

7. Discharge Planning and Health Promotion

Discharge planning was initiated within 24 hours of admission, consistent with NHS best practice guidance and the NHS Long Term Plan's (NHS England, 2021) aspiration for earlier supported discharge and integrated community follow-up. Planning was led collaboratively between nursing, medical, pharmacy, and MDT partners, with Mr Okafor himself — once capacity was reinstated and his cognition had returned to baseline — as the central and active participant. Person-centred goal-setting acknowledged his

expressed priority of returning home to independent living with his daughter's visiting support.

Key clinical discharge criteria included: completion of intravenous antibiotics and safe transition to oral co-amoxiclav; documented resolution of sepsis ($\text{NEWS2} \leq 2$ for 24 hours); haemodynamic stability; optimised glycaemic control; renal function monitoring and confirmation that metformin could be safely recommenced; INR stabilisation following warfarin re-introduction with pharmacist-documented interaction counselling; and physiotherapy sign-off for safe independent mobilisation.

Health promotion was embedded within structured discharge education: pneumococcal vaccination status was reviewed and booked where absent; annual influenza vaccination was arranged; smoking cessation advice was offered (Mr Okafor was a former smoker who had quit eight years previously, but respiratory risk reduction counselling remained appropriate); diabetes self-management education resources were provided; and written information about recognising delirium and sepsis warning signs was shared with both Mr Okafor and his daughter. GP follow-up was arranged within 72 hours for a repeat chest X-ray, review of anti-coagulation management, and ongoing diabetes and hypertension optimisation. The 6Cs' commitment dimension (Department of Health, 2012) — representing the nurse's duty to ensure continuity of quality care beyond the inpatient episode — informed the thoroughness of this discharge planning process, reflecting the understanding that safe discharge is as clinically significant as the acute intervention phase that preceded it.

8. Conclusion

This case study has demonstrated that the safe and effective nursing management of Mr David Okafor required the simultaneous mobilisation of structured clinical frameworks, evidence-based protocols, interprofessional collaboration, and person-centred values. Structured ABCDE assessment and NEWS2 scoring enabled early, systematic recognition of clinical deterioration and gener-

ated a timely SBAR escalation that activated emergency response. The Sepsis Six bundle, delivered within 45 minutes of diagnosis, provided the critical evidence-based intervention shown to reduce sepsis mortality; the holistic RLT care plan ensured that acute clinical priorities were addressed within a framework that respected Mr Okafor's activities of living, dignity, and individuality.

Interprofessional collaboration across medicine, pharmacy, physiotherapy, dietetics, and liaison psychiatry produced a co-ordinated, comprehensive response to a multi-system presentation. Navigation of capacity and consent under the MCA 2005 required both clinical acuity and ethical deliberation, with the nursing team acting as advocates for Mr Okafor's best interests while actively working to restore and support his autonomous participation in care. Discharge planning — initiated from day one and centred on his personal goals and community context — ensured that the inpatient admission served as a foundation for recovery rather than a disconnected clinical episode.

This case study exemplifies the professional sophistication demanded of Level 6 nursing practice: the capacity to integrate high-acuity clinical knowledge, evidence-based decision-making, ethically informed advocacy, and therapeutic relationship in the service of a patient's safety, recovery, and dignity.

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