

Antimicrobial Intravenous-to-Oral Switch (IVOS) Decision Aid

Based on the National Antimicrobial IVOS Criteria

Co-produced through a UK-wide multidisciplinary consensus process involving 279 participants

Why use this IVOS decision aid?

IVOS is an important antimicrobial stewardship intervention.^{1,2} Research evidence confirms several IVOS benefits, including decreased risk of bloodstream and catheter-related infections, reduced equipment costs, carbon footprint and hospital length-of-stay, increased patient mobility and comfort, and released nursing time to care for patients.^{3,4}

When to use this IVOS decision aid?

The audit standard recommended for the implementation of this decision aid is that all patients on intravenous (IV) therapy should be reviewed promptly from first dose of IV antimicrobial with formal review completed within 48 hours and daily thereafter, unless clearly documented exemptions.

Does your patient have an infection that may require special consideration?

Infections that may require special consideration include: deep-seated infections, infections requiring high tissue concentration, infections requiring prolonged intravenous antimicrobial therapy or critical infections with high risk of mortality.

To note: on specialist advice, an IVOS within 48 hours may still be indicated for some patients with these infections.

Infections for special consideration include, but are not limited to, those listed below:

- | | | | |
|-------------------------|-----|--|-----|
| • bloodstream infection | Y/N | • osteomyelitis | Y/N |
| • empyema | Y/N | • severe or necrotising soft tissue infections | Y/N |
| • endocarditis | Y/N | • septic arthritis | Y/N |
| • meningitis | Y/N | • undrained abscess | Y/N |

If **YES** → check for clearly documented plan or seek specialist advice
If **NO** → continue

1a. Enteral route

- 1.1. Is the patient's gastrointestinal tract functioning with no evidence of malabsorption? Y/N
1.2. Is the patient's swallow or enteral tube administration safe? Y/N

If **NO** → reassess in 24 hours
If **YES** → continue

1b. Enteral route continued

- 1.3. Are there any significant concerns over patient adherence to oral treatment? Y/N
1.4. Has the patient vomited within the last 24 hours? Y/N

If **YES** → reassess in 24 hours
If **NO** → continue

2. Clinical signs and symptoms

- 2.1. Are the patient's clinical signs and symptoms of infection improving? Y/N

If **YES** → continue
If **NO** → reassess in 24 hours

3. Infection markers

- 3.1. Has the patient's temperature been between 36-38°C for the past 24 hours? Temp: Y/N
3.2. Is the patient's Early Warning Score (EWS) decreasing? EWS: Y/N
3.3. Is the patient's White Cell Count (WCC) trending towards the normal range? WCC: Y/N
3.4. Is the patient's C-Reactive Protein (CRP) decreasing? CRP: Y/N

If **NO** → reassess in 24 hours
If **YES** → prompt or assess for switch

PROMPT FOR SWITCH:

Nursing/pharmacy teams to prompt prescriber or infection specialist to consider IV to oral switch.

ASSESS FOR SWITCH:

Prescriber or infection specialist to consider IV to oral switch. Identify whether a suitable oral switch option is available, considering for example oral bioavailability, any clinically significant drug interactions, patient allergies or contra-indications.

Intravenous antimicrobial initiation:	Date: __/__/____	Time:	Name:
IVOS first assessment (daily thereafter):	Date: __/__/____	Time:	Name:
IV to Oral Switch:	Date: __/__/____	Time:	Name:

* To note: These infection markers could also indicate inflammation or be affected by for example, steroid treatment, 'Prompt for switch' or 'Assess for switch' may still occur if they are the only markers not met.

References

- Goff DA, Bauer KA, Reed EE, et al. Is the "low-hanging fruit" worth picking for antimicrobial stewardship programs? Clin Infect Dis. 2012; 55(4): p. 587-592.
Public Health England. Start Smart – Then Focus: Antimicrobial stewardship toolkit for English hospitals. 2015, [Date accessed: August 2022].
Nguyen AD, Mai-Phan TA, Tran MH, et al. The effect of early switching from intravenous to oral antibiotic therapy: a randomized controlled trial. J Pharm Pharmacogn Res. 2021; 9(5): p. 695-703.
Schuts EC, Hulscher M, Mouton JW, et al. Current evidence on hospital antimicrobial stewardship objectives: a systematic review and meta-analysis. Lancet Infect Dis. 2016; 16(7): p. 847-856.