

INTRAVENOUS (IV) TO ORAL SWITCH

- Many studies have shown that an early switch (after 2- to 3- days) from iv to oral antimicrobial therapy in selected diagnoses (eg. pneumonia, skin and soft tissue infections) has equal efficacy to iv therapy for the entire course.
- Benefits of an early switch from iv to oral include:
 - reduced risk of complications from iv access – infection, phlebitis
 - improved patient mobility and comfort
 - possibility of earlier discharge without home iv intervention
 - reduced medical and nursing time
 - decreased cost – drug, diluents, giving sets
- This bulletin outlines key clinical criteria for starting iv antimicrobials (**green box**), and recommendations for early review of the appropriateness of continued iv therapy (**orange box**). It also highlights a recent audit around iv to oral switch practices in General Medicine (**purple box**).
- Refer to the Antimicrobial Guidelines in the Pink Book (page 82 of the 2014 hardcopy, or on the intranet) for more information.

Criteria for iv antimicrobials

Patients should only start iv therapy if they fulfil at least one of the following criteria:

- **Sepsis** – clinical symptoms of infection (fever, sweats, chills or rigors) *and* at least 2 of the following:
 - temperature: < 36 or > 38°C
 - tachycardia > 90 beats per minute
 - tachypnoea > 20 breaths per minute
 - WBC count < 4 or > 12x10⁹/L, or the presence of immature neutrophils
- **Febrile neutropenia or immunosuppression**
- **Specific indications** eg. abscess, endocarditis, meningitis, osteomyelitis or septic arthritis
- **Oral route compromised**
- **Post surgery** until tolerating fluids

Review at 48 hours, and switch to oral, refer or continued daily review

- ❖ **Review** all patients on iv antimicrobials at 48 hours.
- ❖ **Switch to oral** – consider a switch when:
 - patient has been afebrile for at least 24 h
 - clinical and laboratory data support improvement
 - patient is tolerating food or fluids
 - infection is suitable for oral treatment (green box)
 - suitable oral alternatives are available
- ❖ **Refer or daily review** – consider referring patients who may need iv antimicrobials for > 48 h to Infectious Diseases, or continue to review every 24 hours.

Recommended oral follow-on regimens are in the Pink Book 2014 (page 83).

Audit on the iv to oral switch in General Medicine (June/July 2014)

- 70 patients initiated on iv antimicrobials were identified over a 2 week period.
- 20 patients were excluded for reasons such as unavailability of clinical notes*.
- The remaining 50 patients had a median (IQ range) age of 72 (54 – 86) years, 36 (72%) were NZ European and 23 (46%) were males.
- **Length of stay, duration of iv treatment and indication for iv treatment** are described in Table 1, and **primary iv and oral antimicrobials used** in Table 2.
- **iv to oral switch** occurred within 24 h of meeting CDHB criteria (Pink Book 2014, p83) in 34 patients (68%), and within 48 h in 47 (94%) patients. Two of the three patients on iv therapy beyond 48 h had confirmed/suspected meningitis (indication for continued iv therapy); one patient had cellulitis that was slow to resolve.
- **Conclusion:** Most patients audited changed from iv to oral antimicrobials within 48 h of meeting CDHB criteria, or had valid a reason for continued iv therapy.

*These individuals are being followed up separately.

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Table 1: Details of iv treatment and length of stay

	Median (IQ range)
Length of stay	3 (1 – 6) days
Duration of iv treatment	2 (1 – 3) days
Indication for iv antimicrobials (n=50)	
Pneumonia/LRTI (26)	Sepsis/bacteraemia (4)
Urosepsis/UTI (7)	Exacerbation of COPD/asthma (4)
Cellulitis (6)	Other (3)

Table 2: Primary iv and oral antimicrobials

Intravenous	Oral*
Amoxicillin/clavulanate (21)	Amoxicillin/clavulanate (22)
Amoxicillin (6)	Amoxicillin (5)
Flucloxacillin (4)	Flucloxacillin (2)
Cefuroxime (9)	Cephalosporin** (10)
Ceftriaxone (9)	Azithromycin (1)
Cefazolin (1)	Other (4)
	No switch (6)

*18 patients on concurrent azithromycin **Cefalexin, cefaclor, cefuroxime