Government of Western Australia
Department of Health

Preview of Twelfth Edition Changes

Antimicrobial resistance (AMR)

WA Clinical Coding Authority

Purchasing and System Performance Division

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Produced with resources available prior to release of IHPA Education

12th Edition code assignment for antimicrobial resistance

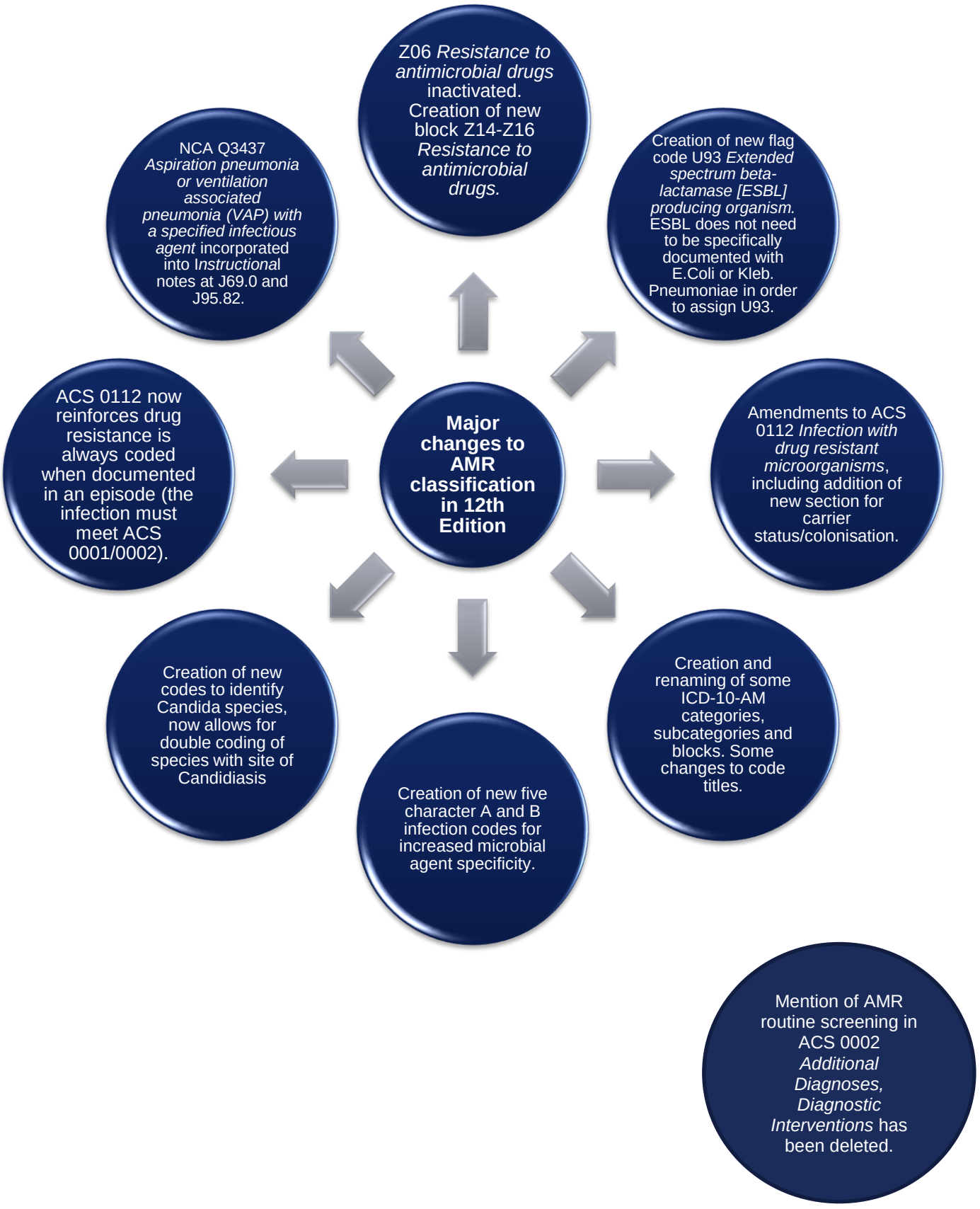
1. Assign a code for the infection if it meets ACS 0001 *Principal diagnosis* or 0002 *Additional diagnosis* criteria for code assignment.

2. Assign an additional code(s) from B95-B97 *Bacterial and viral agents as the cause of diseases classified to other chapters* to specificy the microbial agent(s) if not already specified in the infection code.

3. Assign a code(s) from Z14-Z16 *Resistance to antimicrobial drugs* if resistance is documented in the current episode or microbial agent is ESBL producing (eg. E.coli, Kleb. pneumoniae).

4. Assign U93 *Extended spectrum beta-lactamase [ESBL] producing organism* if microbial agent is an ESBL producing organism (eg. E.coli, Kleb. pneumoniae)

Major changes to antimicrobial (AMR) classification in 12th Edition



IHPA clarification during the ITG process regarding AMR classification in 12th Edition

- If an infection meets ACS 0001 or ACS 0002 criteria for coding, **drug resistance** is **always coded when documented in the current episode.**

- Resistance (Z14-Z16) cannot be coded directly from a microbiology report without supporting documentation in the current episode. To assign a code from Z14-Z16 'resistance' must be documented in the current episode, then specificity may be abstracted from the microbiology report in accordance with ACS 0010 *Clinical documentation and general abstraction guidelines*. For example, "R" noted on a microbiology report cannot be used in isolation to assign a Z14-Z16 code.

    - Exception: Resistance is inherent in ESBL producing organisms (ie. Escherichia coli [E. coli] and Klebsiella pneumoniae). For these organisms, 'resistance' does not need to be specifically documented in the current episode to assign a Z14-Z15 code – the resistance information can be taken directly from the microbiology report.

- "ESBL producing organism" does not need to be specifically documented with E. Coli and Klebsiella pneumoniae for assignment of a code from Z14-Z15 and U93 *Extended spectrum beta-lactamase [ESBL] producing organism*.

- A code from Z14-Z15 must be assigned with U93 *Extended spectrum beta-lactamase [ESBL] producing organism*, as per the ICD-10-AM Tabular List *Instructional* note at U93: "*Code first resistance to antimicrobial drug (Z14-15)*" and ACS 0112: "*Assign codes from block Z14-Z16 where… there is documentation of an infection due to an ESBL producing organism*".

- New codes B37.82 *Candida albicans [C. albicans]* and B37.83 *Candida auris [C. auris]* are assigned if they provide specificity about the species of Candida. Code first the Candidiasis (ie. B37.0–B37.7, B37.81, B37.89, B37.9, P37.5-), even if the site is unknown (ie. B37.9).

Coding Examples

Example 1 – Infection with resistance to multiple antimicrobials

Patient admitted for treatment of pneumonia. Sputum culture identified *Streptococcus pneumoniae*, resistant to clindamycin, dicloxacillin and benzylpenicillin. Ward round documentation by treating clinician: “Strep. pneumoniae pneumonia resistant to multiple antibiotics”.

11th Edition code assignment	12th Edition code assignment
J13 *Pneumonia due to Streptococcus pneumoniae* Z06.51 *Resistance to penicillin* Z06.69 *Resistance to other specified antibiotics*	J13 *Pneumonia due to Streptococcus pneumoniae* Z14.01 *Resistance to beta-lactamase sensitive [first generation] penicillins* Z14.02 *Resistance to beta-lactamase resistant [second generation] penicillins* Z15.1 *Resistance to macrolides, lincosamides and streptogramins*
• As per 11th Ed. ACS 0112, Z06.51 and Z06.69 are assigned, in addition to a code for the infection (J13), to identify resistance to dicloxacillin, benzylpenicillin and clindamycin. • In 11th Edition it was unclear whether documentation of ‘resistance’ also needed to indicate the resistance was ‘significant’ before assigning a ‘Z’ code, therefore, Z06.51 and Z06.69 were inconsistently assigned by coders.	• The treating clinician has documented ‘resistance’ in the current episode, therefore, as per 12th Ed. ACS 0112, codes for resistance (Z14-Z16) are to be assigned. • As per IHPA’s clarification during the ITG process regarding ACS 0112 and ACS 0010, information on the microbiology report can be abstracted from to add specificity regarding the type of resistance. • Note: As per 12th Ed. ACS 0112, Z15.7 *Resistance to multiple antibiotics* and Z16.7 *Resistance to multiple antimicrobial drugs* should only be assigned where the resistance is due to multiple **unspecified** antimicrobials.

Example 2 – Infection with ESBL producing organism, antimicrobial resistance specified

Patient admitted for treatment of cellulitis of shin. Wound swab identified *Klebsiella pneumoniae* resistant to ampicillin. Principal diagnosis on discharge summary: “Shin cellulitis due to Klebsiella”.

11th Edition code assignment	12th Edition code assignment
L03.13 *Cellulitis of lower limb* B96.1 *Klebsiella pneumoniae [K. pneumoniae] as the cause of diseases classified to other chapters* Z06.53 *Extended spectrum beta-lactamase (ESBL) resistance*	L03.13 *Cellulitis of lower limb* B96.1 *Klebsiella pneumoniae [K. pneumoniae] as the cause of diseases classified to other chapters* Z14.11 *Resistance to aminopenicillins* U93 *Extended spectrum beta-lactamase [ESBL] producing organism*
• Z06.53 is assigned for extended spectrum beta-lactamase (ESBL) resistance as per NCA **Q**3171 *Extended spectrum beta-lactamase (ESBL) resistance* (effective 1 Jan 2017 to 30 Jun 2022) .	• A code from Z14-Z15 must be assigned with U93, as per the ICD-10-AM Tabular List *Instructional* note: “Code first resistance to antimicrobial drug (Z14-Z15)” and 12th Ed. ACS 0112, *Infection due to an ESBL producing organism* which states: “assign one or more codes from block Z14-Z16 to identify resistance”. • As per IHPA’s clarification during the ITG process regarding 12th Ed. ACS 0112, resistance does not need to be specifically documented in the current episode; and can be coded from the swab results alone because it’s inherent in ESBL producing organisms (E. coli and Kleb. pneumoniae).

Example 3 – Carrier of ESBL producing organism, antimicrobial resistance not specified

Patient admitted for knee replacement due to OA. Micro-alert form states “E. Coli carrier”. Patient is given a single room and strict infection control precautions are implemented.

11th Edition code assignment	12th Edition code assignment
M17.1 *Other primary gonarthrosis* *Z22.3 Carrier of other specified bacterial diseases*	M17.1 *Other primary gonarthrosis* *Z22.3 Carrier of other specified bacterial diseases* Z15.9 *Resistance to antibiotic, unspecified* U93 *Extended spectrum beta-lactamase [ESBL] producing organism*
• Z22.3 is assigned in accordance with ACS 0002.	• Z22.3 is assigned as per 12th Ed. ACS 0112 and ACS 0002. • If specificity of antimicrobial resistance is not documented for an ESBL producing organism, assign Z15.9 *Resistance to antibiotic, unspecified* because all ESBL producing organisms are resistant. This follows the ICD-10-AM Tabular List *Instructional* note at U93 which states, “*Code first resistance to antimicrobial drug (Z14-Z15)*” and ACS 0112, *Infection due to an ESBL producing organism* which states to “*assign one or more codes from block Z14-Z16 to identify resistance*”. • Z16.9 *Resistance to antimicrobial, unspecified* (ie. drug resistance NOS) is not assigned because ESBL are enzymes produced by certain bacteria. • U93 is only assigned with codes from Z14-Z15 as per the *Instructional* note at U93.

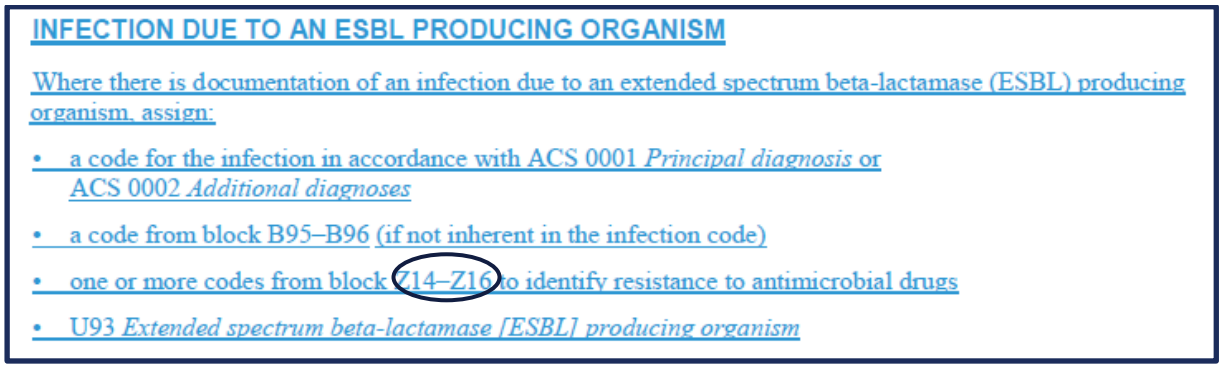
Example 4 – Infection with Candida species identified

Patient admitted for management of dementia. Clinician reviewed the patient and documented ‘oral thrush, for Nilstat.’ A mouth swab was taken which identified *Candida albicans*.

11th Edition	12th Edition
F03 *Unspecified dementia* B37.0 *Candidal stomatitis*	F03 *Unspecified dementia* B37.0 *Candidal stomatitis* B37.82 *Candida albicans [C. albicans]*
• B37.0 is assigned for oral thrush due to any species of Candida following 11th Ed. ICD-10-AM Index pathway: **Thrush**, -oral.	• In 12th Ed., B37.82 and B37.83 are new codes assigned to add specificity about the species of candida in addition to a code assigned for the site of Candida. • As per the 12th Ed. ICD-10-AM Tabular List *Instructional* note at B37.0: Use additional code (B37.82, B37.83) to identify Candida species.

Possible errors in 12th Edition

Excerpt from 12th Ed. ACS 0112 *Infection with drug resistant micro-organisms*



INFECTION DUE TO AN ESBL PRODUCING ORGANISM

Where there is documentation of an infection due to an extended spectrum beta-lactamase (ESBL) producing organism, assign:

- a code for the infection in accordance with ACS 0001 *Principal diagnosis* or ACS 0002 *Additional diagnoses*
- a code from block B95–B96 (if not inherent in the infection code)
- one or more codes from block Z14–Z16 to identify resistance to antimicrobial drugs
- U93 *Extended spectrum beta-lactamase [ESBL] producing organism*

The circled code range should be Z14-Z15, rather than Z14-Z16, as per the 12th Ed. ICD-10-AM Tabular List *Instructional* note at U93 which states, “Code first resistance to antimicrobial drug (Z14-Z15)”.

New infection codes in ICD-10-AM 12th Edition

Chapter 1 *Certain infectious and parasitic diseases (A00-B99)*

A49.81 *Bacteroides (fragilis) infection, unspecified site*
A49.82 *Burkholderia infection not elsewhere classified, unspecified site*
A49.83 *Campylobacter infection, unspecified site*
A49.84 *Escherichia coli [E. coli] infection, unspecified site*
A49.85 *Klebsiella pneumoniae [K. pneumoniae] infection, unspecified site*
A49.86 *Proteus (mirabilis), Morganella (morganii) and Providencia (rettgeri) infection, unspecified site*
A49.87 *Pseudomonas (aeruginosa) infection, unspecified site*
A49.89 *Other bacterial infection of unspecified site*

B37.82 *Candida albicans [C. albicans]*
B37.83 *Candida auris [C. auris]*
B37.89 *Candidiasis of other sites*

B95.71 *Staphylococcus argenteus as the cause of diseases classified to other chapters*
B95.79 *Other Staphylococcus as the cause of diseases classified to other chapters*

B96.41 *Proteus (mirabilis) as the cause of diseases classified to other chapters*
B96.42 *Morganella (morganii) as the cause of diseases classified to other chapters*
B96.43 *Providencia (rettgeri) as the cause of diseases classified to other chapters*

B96.83 *Acinetobacter baumannii [A. baumannii] as the cause of diseases classified to other chapters*
B96.84 *Burkholderia (mallei) (pseudomallei) as the cause of diseases classified to other chapters*
B96.85 *Campylobacter as the cause of diseases classified to other chapters*
B96.86 *Clostridioides [Clostridium] difficile [C. difficile] as the cause of diseases classified to other chapters*
B96.87 *Other enterobacterales as the cause of diseases classified to other chapters*
B96.89 *Other specified bacterial agents as the cause of diseases classified to other chapters*

Chapter 21 *Factors influencing health status and contact with health services (Z00-Z99)*

Z14 *Resistance to beta-lactam antibiotics*

- **Z14.0 *Resistance to narrow spectrum penicillins***
  - Z14.01 *Resistance to beta-lactamase sensitive [first generation] penicillins*
  - Z14.02 *Resistance to beta-lactamase resistant [second generation] penicillins*
- **Z14.1 *Resistance to extended spectrum penicillins***
  - Z14.11 *Resistance to aminopenicillins*
  - Z14.12 *Resistance to carboxypenicillins*
  - Z14.13 *Resistance to ureidopenicillins*
- **Z14.2 *Resistance to cephalosporins***
  - Z14.21 *Resistance to first generation cephalosporins*
  - Z14.22 *Resistance to second generation cephalosporins*
  - Z14.23 *Resistance to third generation cephalosporins*
  - Z14.24 *Resistance to fourth generation cephalosporins*
  - Z14.25 *Resistance to fifth generation cephalosporins*
- **Z14.3 *Resistance to carbapenems, penems and monobactams***
  - Z14.31 *Resistance to carbapenems*
  - Z14.32 *Resistance to penems*
  - Z14.33 *Resistance to monobactams*
- **Z14.4 *Resistance to penicillin-based antibiotic with beta-lactamase inhibitor***
- **Z14.8 *Resistance to other beta-lactam antibiotics***
- **Z14.9 *Resistance to beta-lactam antibiotic, unspecified***

Z15 ***Resistance to other antibiotics***

- **Z15.0** ***Resistance to sulphonamides and trimethoprim***
- **Z15.1** ***Resistance to macrolides, lincosamides and streptogramins***
- **Z15.2** ***Resistance to aminoglycosides***
- **Z15.3** ***Resistance to quinolones***
  - Z15.30 *Resistance to quinolones, unspecified*
  - Z15.31 *Resistance to fluoroquinolones*
  - Z15.39 *Resistance to other specified quinolones*
- **Z15.4** ***Resistance to glycopeptides***
  - Z15.41 *Resistance to vancomycin*
  - Z15.49 *Resistance to other specified glycopeptides*
- **Z15.7** ***Resistance to multiple antibiotics***
- **Z15.8** ***Resistance to other specified antibiotic***
  - Z15.81 *Resistance to polymyxins*
  - Z15.82 *Resistance to tetracyclines*
  - Z15.83 *Resistance to imidazole derivatives*
  - Z15.84 *Resistance to oxazolidinones*
  - Z15.89 *Resistance to other specified antibiotics*
- **Z15.9** ***Resistance to antibiotic, unspecified***

Z16 ***Resistance to other antimicrobials***

- **Z16.0** ***Resistance to antimycotics***
- **Z16.1** ***Resistance to antimycobacterials***
- **Z16.2** ***Resistance to antivirals***
- **Z16.3** ***Resistance to antiparasitic drugs***
  - Z16.30 *Resistance to antiparasitic drugs, unspecified*
  - Z16.31 *Resistance to anthelmintic drugs*
  - Z16.32 *Resistance to antimalarial drugs*
  - Z16.39 *Resistance to other specified antiparasitic drugs*
- **Z16.7** ***Resistance to multiple antimicrobials***
- **Z16.8** ***Resistance to other specified antimicrobials***
- **Z16.9** ***Resistance to antimicrobial, unspecified***

Chapter 22 ***Codes for special purposes (U00-U49, U78-U88, U91-U93)***

U93 ***Extended spectrum beta-lactamase [ESBL] producing organism***

This document can be made available in alternative formats on request for a person with disability.