Preview of Twelfth Edition Changes

Antimicrobial resistance (AMR)

WA Clinical Coding Authority
Purchasing and System Performance Division
May 2022, updated December 2022

Produced with resources available prior to release of IHPA Education
## Version history

<table>
<thead>
<tr>
<th>Version</th>
<th>Date Released</th>
<th>Author</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>May 2022</td>
<td>WA Clinical Coding Authority</td>
<td></td>
</tr>
</tbody>
</table>
| 2.0     | December 2022 | WA Clinical Coding Authority | Revisions:  
- Amendments to U93 instructions and carrier status in diagrams (pages 3-4)  
- ESBL producing organism classification (page 5)  
- Documentation and abstraction of resistance (page 5)  
- Examples 2-3 (pages 7-8) |
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 specify 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 documented as an ESBL producing organism.
Major changes to antimicrobial (AMR) classification in 12th Edition

- **Z06 Resistance to antimicrobial drugs inactivated. Creation of new block Z14-Z16 Resistance to antimicrobial drugs.**
- **NCA 03437 Aspiration pneumonia or ventilation associated pneumonia (VAP) with a specified infectious agent incorporated into Instructional notes at J69.0 and J95.82.**
- **Creation of new flag code U93 Extended spectrum beta-lactamase [ESBL] producing organism. An organism needs to be specifically documented as ESBL producing in order to assign U93.**
- **Amendments to ACS 0112 Infection with drug resistant microorganisms, including addition of new section for carrier status/colonisation.**
- **Creation and renaming of some ICD-10-AM categories, subcategories and blocks. Some changes to code titles.**
- **Creation of new five character A and B infection codes for increased microbial agent specificity.**
- **Creation of new codes to identify Candida species, now allows for double coding of species with site of Candidiasis.**
- **ACS 0112 now reinforces drug resistance is always coded when documented in an episode (the infection must meet ACS 0001/0002).**
- **Mention of AMR routine screening in ACS 0002 Additional Diagnoses, Diagnostic Interventions has been deleted.**
- **NCA Q3437 Aspiration pneumonia or ventilation associated pneumonia (VAP) with a specified infectious agent incorporated into Instructional notes at J69.0 and J95.82.**
- **** See also TN1601 Twelfth Edition FAQ: Carrier of extended spectrum beta-lactamase (ESBL) producing organism.
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. certain strains of Escherichia coli [E. coli] and Klebsiella pneumoniae). For organisms specified as ESBL producing, ‘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.
  
  - Note: While it is not acceptable to assign a code from Z14-Z16 **Resistance to antimicrobial drugs** by only abstracting the “R” (for resistance) documented on pathology reports, if a clinician documents “R” or transcribes results containing “R” into the body of the current episode of care or onto the discharge summary, this can be considered to be synonymous with the term “resistance” and used to inform code assignment.
    
    ▪ As per the logic in IHACPA’s Twelfth Edition FAQ: Antimicrobial drug resistance (TN1601, effective 1 Oct 2022) which states, “where a clinician transcribes information (copied by hand or transferred electronically) from a pathology result into the progress notes, the entry is part of the clinician’s documentation within the body of the episode of care”, electronic discharge summaries form part of the medical record and the contents can be used as supporting documentation for assignment of a code from Z14-Z16.

- “ESBL producing” needs 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 query has been sent to IHACPA to confirm this instruction as it was not clarified by the 12th Edition FAQ process.

- 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”.

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>J13 <em>Pneumonia due to Streptococcus pneumoniae</em></td>
<td>J13 <em>Pneumonia due to Streptococcus pneumoniae</em></td>
</tr>
<tr>
<td>Z06.51 <em>Resistance to penicillin</em></td>
<td>Z14.01 <em>Resistance to beta-lactamase sensitive [first generation] penicillins</em></td>
</tr>
<tr>
<td>Z06.69 <em>Resistance to other specified antibiotics</em></td>
<td>Z14.02 <em>Resistance to beta-lactamase resistant [second generation] penicillins</em></td>
</tr>
<tr>
<td></td>
<td>Z15.1 <em>Resistance to macrolides, lincosamides and streptogramins</em></td>
</tr>
</tbody>
</table>

- 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* - ESBL producing resistant to ampicillin. Principal diagnosis on discharge summary: “Shin cellulitis due to *Klebsiella*”.

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>L03.13 <em>Cellulitis of lower limb</em></td>
<td>L03.13 <em>Cellulitis of lower limb</em></td>
</tr>
<tr>
<td>B96.1 <em>Klebsiella pneumoniae ([K. pneumoniae] as the cause of diseases classified to other chapters)</em></td>
<td>B96.1 <em>Klebsiella pneumoniae ([K. pneumoniae] as the cause of diseases classified to other chapters)</em></td>
</tr>
<tr>
<td>Z06.53 <em>Extended spectrum beta-lactamase (ESBL) resistance</em></td>
<td>Z14.11 Resistance to aminopenicillins</td>
</tr>
<tr>
<td></td>
<td>U93 <em>Extended spectrum beta-lactamase [ESBL] producing organism</em></td>
</tr>
</tbody>
</table>

- Z06.53 is assigned for extended spectrum beta-lactamase (ESBL) resistance as per NCA Q3171 *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.
Example 3 – Carrier of ESBL producing organism, antimicrobial resistance not specified

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

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M17.1 Other primary gonarthrosis</td>
<td>M17.1 Other primary gonarthrosis</td>
</tr>
<tr>
<td>Z22.3 Carrier of other specified bacterial diseases</td>
<td>Z22.3 Carrier of other specified bacterial diseases</td>
</tr>
<tr>
<td>Z15.9 Resistance to antibiotic, unspecified</td>
<td></td>
</tr>
<tr>
<td>U93 Extended spectrum beta-lactamase [ESBL] producing organism</td>
<td></td>
</tr>
<tr>
<td>• Z22.3 is assigned in accordance with ACS 0002.</td>
<td>• Z22.3 is assigned as per 12th Ed. ACS 0112 and ACS 0002.</td>
</tr>
<tr>
<td></td>
<td>• As per TN1601 Twelfth Edition FAQ: Carrier of extended spectrum beta-lactamase (ESBL) producing organism, Z15.9 and U93 are assigned because resistance has been specified. Where resistance is not documented with carrier of ESBL, assign only Z22.3 as the guidelines for ACS 0112 do not apply. A query to IHACPA has been sent to clarify the instructions in this FAQ.</td>
</tr>
<tr>
<td></td>
<td>• 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, &quot;Code first resistance to antimicrobial drug (Z14-Z15)&quot; 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”.</td>
</tr>
<tr>
<td></td>
<td>• Z16.9 Resistance to antimicrobial, unspecified (ie. drug resistance NOS) is not assigned because ESBL are enzymes produced by certain bacteria.</td>
</tr>
<tr>
<td></td>
<td>• U93 is only assigned with codes from Z14-Z15 as per the Instructional note at U93.</td>
</tr>
</tbody>
</table>

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*.

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>F03 Unspecified dementia</td>
<td>F03 Unspecified dementia</td>
</tr>
<tr>
<td>B37.0 Candidal stomatitis</td>
<td>B37.0 Candidal stomatitis</td>
</tr>
<tr>
<td></td>
<td>B37.82 Candida albicans [C. albicans]</td>
</tr>
</tbody>
</table>
Possible errors in 12th Edition

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

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–Z15 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 Clostridiodes [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