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 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 an ESBL producing organism (eg. E.coli, Kleb. pneumoniae)
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.
- Creation of new flag code U93 Extended spectrum beta-lactamase (ESBL) producing organism. ESBL does not need to be specifically documented with E.Coli or Kleb. Pneumoniae in order to assign U93.
- NCA Q3437 Aspiration pneumonia or ventilation associated pneumonia (VAP) with a specified infectious agent incorporated into Instructional notes at J69.0 and J95.02.
- Creation of new five character A and B infection codes for increased microbial agent specificity.
- Creation and renaming of some ICD-10-AM categories, subcategories and blocks. Some changes to code titles.
- ACS 0112 now reinforces drug resistance is always coded when documented in an episode (the infection must meet ACS 0001/0002).
- Creation of new codes to identify Candida species, now allows for double coding of species with site of Candidiasis.
- Amendments to ACS 0112 Infection with drug resistant microorganisms, including addition of new section for carrier status/colonisation.
- ACS 0002 Additional Diagnoses, Diagnostic Interventions has been deleted.
- Mention of AMR routine screening in ACS 0002 Additional Diagnoses, Diagnostic Interventions has been deleted.
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.
  
  o 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”.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>J13 Pneumonia due to <em>Streptococcus pneumoniae</em></td>
<td>J13 Pneumonia due to <em>Streptococcus pneumoniae</em></td>
</tr>
<tr>
<td>Z06.51 Resistance to penicillin</td>
<td>Z14.01 Resistance to beta-lactamase sensitive [first generation] penicillins</td>
</tr>
<tr>
<td>Z06.69 Resistance to other specified antibiotics</td>
<td>Z14.02 Resistance to beta-lactamase resistant [second generation] penicillins</td>
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</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* resistant to ampicillin. Principal diagnosis on discharge summary: “Shin cellulitis due to Klebsiella”.

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

<table>
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<tbody>
<tr>
<td>M17.1 Other primary gonarthrosis</td>
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</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>
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</tr>
<tr>
<td>U93 Extended spectrum beta-lactamase [ESBL] producing organism</td>
<td></td>
</tr>
</tbody>
</table>

- 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.

<table>
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<tr>
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<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>B37.82 Candida albicans [C. albicans]</td>
<td></td>
</tr>
</tbody>
</table>

- 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*

<table>
<thead>
<tr>
<th>INFECTION DUE TO AN ESBL PRODUCING ORGANISM</th>
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<tbody>
<tr>
<td>Where there is documentation of an infection due to an extended spectrum beta-lactamase (ESBL) producing organism, assign:</td>
</tr>
<tr>
<td>• a code for the infection in accordance with ACS 0001 <em>Principal diagnosis or ACS 0002 Additional diagnosis</em></td>
</tr>
<tr>
<td>• a code from block B95–B96 (if not inherent in the infection code)</td>
</tr>
<tr>
<td>• one or more codes from block Z14–Z15 to identify resistance to antimicrobial drugs</td>
</tr>
<tr>
<td>• U93 <em>Extended spectrum beta-lactamase (ESBL) producing organism</em></td>
</tr>
</tbody>
</table>

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 12\textsuperscript{th} 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

B96.43 Acinetobacter baumannii [A. baumannii] as the cause of diseases classified to other chapters
B96.44 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 Clostridioiides [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

\textbf{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

\textbf{Z14.1 Resistance to extended spectrum penicillins}
Z14.11 Resistance to aminopenicillins
Z14.12 Resistance to carboxypenicillins
Z14.13 Resistance to ureidopenicillins

\textbf{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

\textbf{Z14.3 Resistance to carbapenems, penems and monobactams}
Z14.31 Resistance to carbapenems
Z14.32 Resistance to penems
Z14.33 Resistance to monobactams

\textbf{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 antymycotics
Z16.1 Resistance to antymycobacterials
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