Because of this concern, multiwire branch circuits are not permitted to be used to meet the requirements of of 517.18(A).

Exception No. 3 allows both of the two required branch circuits for the general care area to be supplied by the emergency system, provided they are supplied by two separate transfer switches. A normal branch circuit is not required in this case. Two emergency branch circuits have a higher reliability than one normal and one emergency branch circuit.

(B) Patient Bed Location Receptacles. Each patient bed location shall be provided with a minimum of four receptacles. They shall be permitted to be of the single, duplex, or quadruplex type, or any combination of the three. All receptacles, whether four or more, shall be listed "hospital grade" and so identified. The grounding terminal of each receptacle shall be connected to an insulated copper equipment grounding conductor sized in accordance with Table 250.122.

Exception No. 1: The requirements of 517.18(B) shall not apply to psychiatric, substance abuse, and rehabilitation hospitals meeting the requirements of 517.10(B)(2).

Exception No. 2: Psychiatric security rooms shall not be required to have receptacle outlets installed in the room.

Informational Note: It is not intended that there be a total, immediate replacement of existing non–hospital grade receptacles. It is intended, however, that non–hospital grade receptacles be replaced with hospital grade receptacles upon modification of use, renovation, or as existing receptacles need replacement.

Hospital-grade single, duplex, or quadplex receptacles are required in general care patient bed locations. See the commentary following 517.19(B)(2) for more information on patient bed locations in critical care areas.

(C) Pediatric Locations. Receptacles located within the rooms, bathrooms, playrooms, activity rooms, and patient care areas of designated pediatric locations shall be listed tamper resistant or shall employ a listed tamper-resistant cover.

The receptacle safeguarding requirement covers all receptacles installed in rooms and patient care areas of pediatric locations. Safeguarding can be achieved through the use of either listed tamper-resistant receptacles or listed tamper-resistant covers, which preclude insertion of a conductive object into the energized parts of the receptacle. The use of locking covers over ordinary receptacles does not meet this requirement. Exhibit 517.2 shows a listed tamper-resistant receptacle that can be used to comply with 517.18(C). Exhibit 517.3 shows a

EXHIBIT 517.2 *A tamper-resistant hospital-grade receptacle, identified by a green dot on its face, that fulfills the requirements of 517.18(B) and (C). (Courtesy of Legrand/Pass & Seymour®)*

EXHIBIT 517.3 *Hospital grade tamper-resistant GFCI in a hospital environment. (Courtesy of Legrand/Pass & Seymour®)*

listed tamper-resistant, hospital grade, GFCI receptacle installed adjacent to a bathroom sink in a pediatric ward.

517.19 Critical Care Areas

(A) Patient Bed Location Branch Circuits. Each patient bed location shall be supplied by at least two branch circuits, one or more from the emergency system and one or more circuits from the normal system. At least one branch circuit from the emergency system shall supply an outlet(s) only at that bed location. All branch circuits from the normal system shall be from a single panelboard. Emergency system receptacles shall be identified and shall also indicate the panelboard and circuit number supplying them.

The branch circuit serving patient bed locations shall not be part of a multi-wire branch circuit.

Exception No. 1: Branch circuits serving only special-purpose receptacles or equipment in critical care areas shall be permitted to be served by other panelboards.

Exception No. 2: Critical care locations served from two separate transfer switches on the emergency system shall not be required to have circuits from the normal system.

Each patient bed location must be served by receptacles supplied from the normal system as well as the emergency system. The emergency system receptacles are required to be labeled with the panelboard and the circuit supplying them. They are also required to be identified as being supplied from the emergency system, which is often accomplished through the use of a color code for receptacles established for that facility (the color red is used in many health care facilities to identify receptacles supplied by the emergency system), as illustrated in Exhibit 517.4.

Disconnecting means for multiwire branch circuits are required by 210.4(B) to simultaneously disconnect all ungrounded conductors. This mode of operation could result in unintended and potentially dangerous interruption of power to lighting or receptacle loads at a patient bed location. Because of this concern, these circuits are not permitted to be used to meet the requirements of 517.19(A). Exception No. 2 covers the special case in which two separate transfer switches supply a single patient care area. Branch circuits supplied from two separate transfer switches provide an equivalent level of redundancy to that specified by the main requirement.

(B) Patient Bed Location Receptacles.

(1) Minimum Number and Supply. Each patient bed location shall be provided with a minimum of six receptacles, at least one of which shall be connected to either of the following:

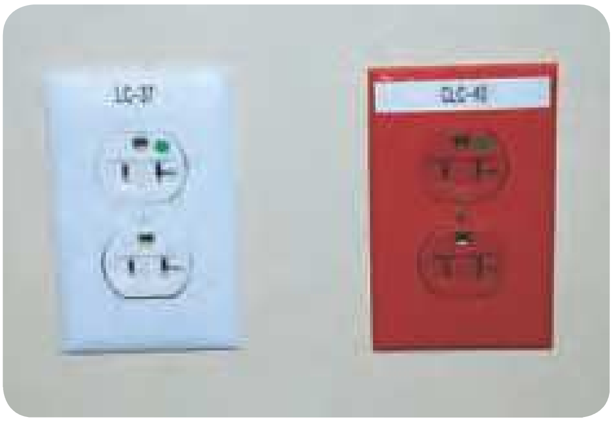

EXHIBIT 517.4 A receptacle from the normal system (left) and the emergency system (right). Note the label that indicates the panelboard and the circuit number. (Courtesy of the International Association of Electrical Inspectors)

(1) The normal system branch circuit required in 517.19(A)
(2) An emergency system circuit supplied by a different transfer switch than the other receptacles at the same patient bed location

(2) Receptacle Requirements. The receptacles required in 517.19(B)(1) shall be permitted to be single, duplex, or quadruplex type or any combination thereof. All receptacles shall be listed "hospital grade" and shall be so identified. The grounding terminal of each receptacle shall be connected to the reference grounding point by means of an insulated copper equipment grounding conductor.

Just as 517.19(A) specifies the number and type of branch circuits required for patient bed locations in critical care areas, 517.19(B) specifies the number of receptacles and the type of circuits supplying them. Each patient bed location must be provided with at least six receptacles that may be of the single, duplex, or quadplex type, provided they are listed hospital-grade type and are identified as such, typically with a green dot (shown in Exhibit 517.2).

Each patient bed location in critical care areas must be supplied by at least two branch circuits, one from the normal panel and one from the emergency panel, as shown in Exhibit 517.5. The normal circuits must be supplied from the same panel (L-1). The emergency circuits are permitted to be supplied from different panels (EML-1 and EML-2). However, the emergency branch circuit to patient bed location A cannot supply emergency receptacles for patient bed location B.

Patient bed location receptacles can also be supplied by two different emergency circuits, instead of one emergency and one normal, provided the emergency circuits are sup-