

**Management of Patient
Active/Inactive Status in
Immunization Information Systems:**
Replacement of 2005 Guidelines





Patient active/inactive status (patient or individual status) expresses the concept of responsibility for immunization of a patient. A healthcare provider organization is responsible for the immunization of its patients. One or more public health authorities (on local, state, or federal levels) are responsible for the immunization of the population as a whole within its jurisdiction (or, more precisely, for individuals that comprise that population). Assignment of patient status to an individual establishes a classification that can be used by responsible parties for immunization coverage assessments and reminder-recall notifications.

The guidelines focus on three aspects of patient status:

- Rules to define patient statuses at provider organization and geographic jurisdiction levels, with emphasis on patient status information received through electronic data exchange.
- Rules for including and excluding patients in assessment reports and reminder/recall activities based on status.
- Support efforts to integrate AFIX program functionality into IIS

This mini guide serves as a summary introduction to the more detailed, full guide, available at <http://www.immregistries.org/resources/aira-mirow>.

The Importance of Patient Status

The management of patient status is especially relevant for the IIS community today because of the Meaningful Use initiative and other efforts to promote and advance the use and exchange of clinical data in electronic format. These efforts have resulted in a significant increase in collaborations between IIS and other health information systems, such as electronic health record (EHR) systems. Increased electronic data exchange between immunization provider organizations and IIS, as well as ongoing efforts to integrate some of the AFIX program's functionality into IIS, make this guide timely. Management of patient status will be useful for immunization programs (particularly, the AFIX program), IIS, and their partners to reference for electronic data exchange issues, as well as conducting assessment reports and reminder/recalls activities.

1-1 vs. 1-M IIS

IIS have two common approaches to implementing the concept of a provider organization having responsibility for immunizing a patient. Some IIS allow only one provider organization to have responsibility for a patient at the same time (1 to 1). Other IIS allow more than one provider organization to have responsibility for a patient at the same time (1 to many). The business rules developed account for this difference in approach, providing separate, yet comparable, guidance for each, indicated by an A for 1-1 and B 1-M (e.g., business rule BR402A for the 1-1 approach and business rule BR402B for the 1-M approach).

Public Health and Patient Status: Hierarchical Approach

From the public health perspective, it is important to maintain statuses for a patient/individual in a hierarchical manner, with a classification of immunization statuses defined on each level of this hierarchy, e.g. at the provider organization and the geographic jurisdiction (city, county, and state) levels. A hierarchical structure of statuses ensures that there is always a party responsible for immunization of every individual. For example, if an individual does not have 'active' status with any provider organization, there would be no responsibility for this individual's immunization at the provider organization level, but on the next level of hierarchy a public health authority is responsible for immunization of this individual. To ensure that there is always a party responsible for the immunization of each individual, generally speaking, there should be a more rigid approach in assigning patient status at the geographic jurisdiction level compared to the provider organization level. (Principles 302, 303)

Appropriate classification of patient status:

- Leads to accurate coverage assessments
- Improves the success of reminder-recall activities
- When used consistently, allows for comparability between providers within a geographic jurisdiction
- Allows a geographic jurisdiction to prevent members of its community from "falling through the cracks"

An IIS must consider a variety of factors when determining patient status for individuals at both the provider organization and geographic jurisdiction levels. The recommendations developed forge the path for an IIS to navigate these factors.

Principle P301 tells us that each patient status should characterize an association between one patient and one provider organization.

Principles P306 and P307 provide general guidance about when to, and when not to identify an individual as a patient of a provider organization.

Principle P312 states that patient status should be included in any submission from a provider organization to an IIS.

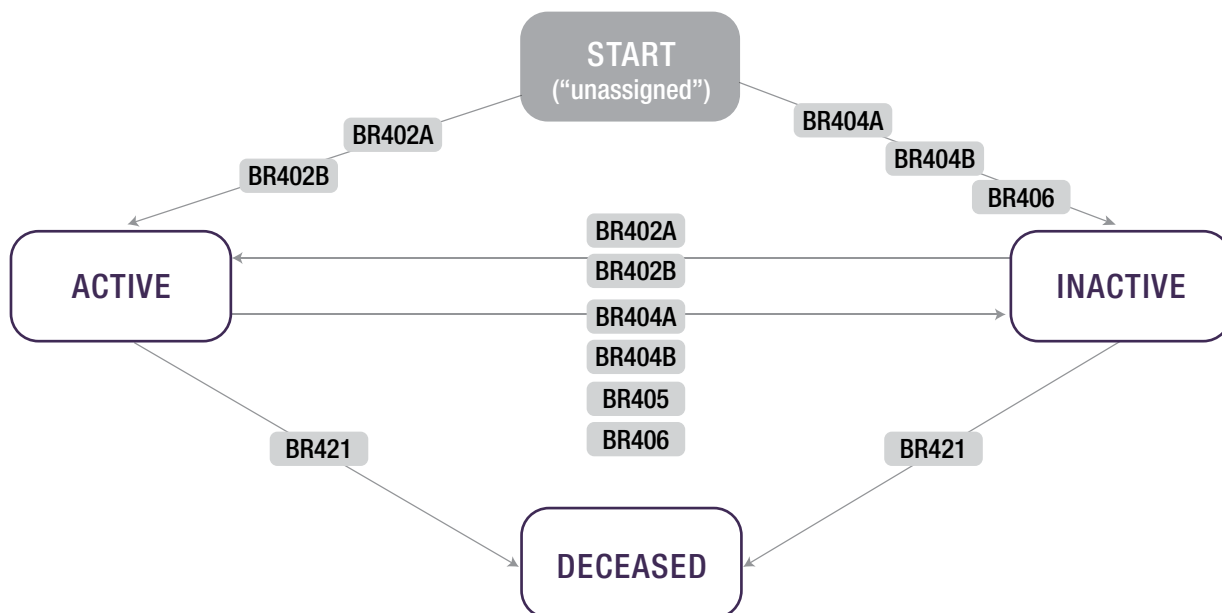
Patient Status Diagrams

The Patient Status Diagrams below show the possible transitions between statuses and represent the decision-making process recommended for determining patient statuses. Below each diagram is an overview of the business rules (BR) that guide these transitions.

The rectangles in the diagrams represent statuses; the arrows represent transition from one status to another. The arrows are associated with the business rules that are used to move a patient from one status to another. The initial status between patients and a provider organization or geographic jurisdiction is unassigned meaning that no relationship exists for the purposes of assessment or reminder recall.



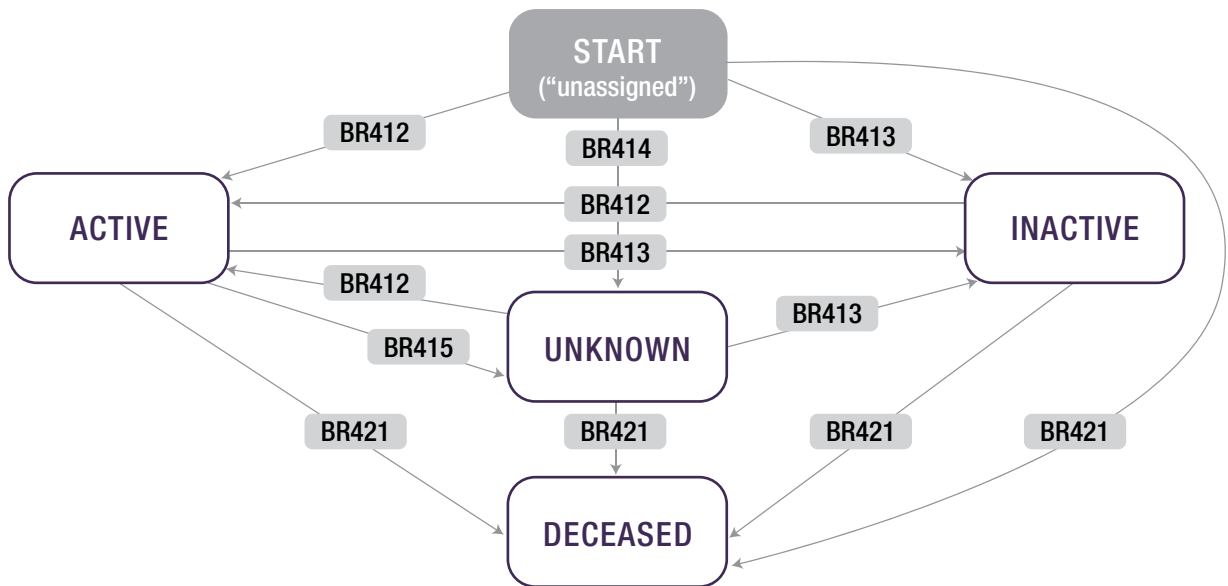
PATIENT STATUS AT THE PROVIDER ORGANIZATION LEVEL



In general, patient status is “Active” at the provider organization level if that organization identifies an individual as a patient. Patient statuses and examples of how status is determined at the provider organization level are:

- **Active:** If a provider sends demographic and immunization information for an individual to the IIS identifying the individual as a patient, then **BR402A** or **BR402B** is applied and the status is set to “Active” with that provider.
- **Inactive, with the following reason codes:**
 - *No longer a patient:* If the relationship between a provider and a patient is terminated because the patient has gone or transferred to another provider or the patient has moved out of the area, then **BR404A** or **BR404B** is applied and the status is changed to “Inactive” with the reason code “No longer a patient”.
 - *Lost to follow-up:* If contact is lost with a patient and documented attempts have been made to locate and contact the patient and no response has been received, or if the provider organization has no means to contact the patient, then **BR405** is applied and the patient is moved from a status of “Active” to a status of “Inactive” with the reason code “Lost to follow-up”.
 - *Unspecified:* For electronic data exchange in which the provider is not technically able to specify a reason for an “Inactive” status, **BR406** is applied and status at the provider organization level is set to “Inactive” with the reason code “Unspecified”.
- **Deceased:** If a patient’s death is confirmed, then **BR421** is applied and the status is set to “Deceased” at the provider organization level.

PATIENT STATUS AT THE GEOGRAPHIC JURISDICTION LEVEL



In general, individual status is “Active” at the geographic jurisdiction level if the individual’s residence within the jurisdiction has been confirmed. Individual statuses and examples of how individual status is determined at the geographic jurisdiction level are:

- **Active:** If an individual’s residence within the geographic jurisdiction has been confirmed, or if an individual received an immunization from a provider organization within the geographic jurisdiction and the individual’s address is not known, then BR412 is applied and the status at the geographic level is set to “Active”.
- **Inactive:** If an individual does not reside in the geographic jurisdiction, then BR413 is applied and the individual status at the geographic jurisdiction level is set to “Inactive” with the reason code “Outside jurisdiction”.
- **Unknown, with the following reason codes:**
 - *No address – no vaccination:* If the IIS has never received an address or vaccination information about an individual, then BR414 is applied and the status at the geographic jurisdiction level is set to “Unknown” with the reason code “No address – no vaccination”.
 - *No activity for extended period of time:* If the IIS has not received demographic and/or immunization information for an individual for an extended period of time, then BR415 is applied and the individual status at the geographic jurisdiction level is set to “Unknown” with the reason code “No activity for extended period of time”.
- **Deceased:** If an individual’s death is confirmed, then BR421 is applied and the status is set to “Deceased” at the geographic jurisdiction level.



Impact of Patient Status on Reminder-Recall Notification and Assessment Reports

Patient status is an important factor when determining which individuals to include in assessment reports or deciding which patients should receive reminder-recall notifications.

Rules for including patients/individuals in reminder-recall notifications and assessment reports are documented in the following decision tables. The top half of each table reflects the conditions used to determine whether a patient/individual is included in the process. The bottom half reflects the recommended actions. Each column represents a scenario – it indicates what the resulting action should be for specific conditions. For example, in Scenario A of the “Reminder-Recall at the Provider Organization Level,” table, if a patient has active status, he/she should be included in the reminder-recall notification. In Scenario B, if a patient has inactive status, he/she should be excluded from the reminder-recall notification

REMINDER-RECALL NOTIFICATION

For reminder-recall notifications at the provider organization level, in general, patients with active status will be included and patients with deceased and inactive status will be excluded. For reminder recall notifications at the geographic jurisdiction level, in general, patients with active status will be included, patients with inactive and deceased status will be excluded, and the IIS can decide whether to include or exclude patients with unknown status.

Reminder-Recall at the Provider Organization Level

CONDITIONS	SCENARIO A	SCENARIO B
Patient status at the provider organization level	Active	Deceased Inactive
ACTIONS		
Include in provider organization RR notification	X	
Exclude from provider organization RR notification		X

Reminder-Recall at the Geographic Jurisdiction Level

CONDITIONS	SCENARIO A	SCENARIO B	SCENARIO C
Individual status at the geographic jurisdiction level	Active	Inactive Deceased	Unknown
ACTIONS			
Include in geographic jurisdiction RR notification	X		
Exclude from geographic jurisdiction RR notification		X	
IIS makes determination whether to include			X

An IIS may choose to include individuals with unknown patient status at the geographic jurisdiction level in reminder recalls if the IIS has any method to contact the individual.

Full Guide Features

- **Principles:** Fundamentals that support the business rules (Chapter 3)
- **Business Rules:** Consensus-based recommendations, including notes and background (Chapter 4)
- **Operational Scenarios:** Resolutions for typical and challenging situations that illustrate implementation of best practice recommendations. Examples in this chapter apply the guidelines to twenty-two real situations. (Chapter 6)
- **HL7 Considerations:** How to designate patient status in electronically transmitted HL7 data (Chapter 7)
- **Terms and Definitions:** Recommended terminology to develop IIS on common ground

**For additional questions,
please contact:**

Warren Williams

Centers for Disease Control
and Prevention

(404) 639-8867

wxw4@cdc.gov

Elaine Lowery

Public Health Consultant

(303) 881-2440

elaine.lowery@comcast.net

Rebecca Coyle

AIRA, Executive Director

202-552-0208

coyler@immregistries.org

AIRA

1155 F Street NW, Suite 1050

Washington, DC 20004

www.immregistries.org

info@immregistries.org



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This mini-guide was published by AIRA, an organization founded in July 1999 to advocate for the support of immunization information systems.

Production of this publication was supported by the Cooperative Agreement Number 5U38IP000664-03 from the Centers for Disease Control and Prevention (CDC). Its contents are solely the responsibility of the American Immunization Registry Association (AIRA) and do not necessarily represent the official views of the CDC.

ASSESSMENT REPORTS

There is a great variety of provider organization level assessments conducted based on IIS data. The guidelines present best practice recommendations for selecting a population cohort for a generic assessment report (including an AFIX assessment report at the provider organization level).

For assessment reports at the provider organization level, in general, patients with active status will be included and patients with deceased and inactive status will be excluded. For assessment reports at the geographic jurisdiction level, in general, patients with active and unknown status will be included, and patients with inactive and deceased status will be excluded.

Assessment report at the provider organization level

CONDITIONS	SCENARIO A	SCENARIO B
Patient status at the provider organization level	Active	Deceased Inactive
ACTIONS		
Include in provider organization assessment report	X	
Exclude from provider organization assessment report		X

Assessment report at the geographic jurisdiction level

CONDITIONS	SCENARIO A	SCENARIO B
Patient status at the geographic jurisdiction level	Active Unknown	Inactive Deceased
ACTIONS		
Include in geographic jurisdiction assessment report	X	
Exclude from geographic jurisdiction assessment report		X

Based on local opt-out laws or policies, an IIS may also choose to include individuals who have opted out in a geographic jurisdiction assessment cohort. Ideally, IIS should include individuals with a status of “Unknown—no activity for extended period of time” in jurisdictional-level coverage assessments to ensure that assessments include the full population, and exclude individuals with a status of “Unknown—no address, no vaccination”. In some cases an IIS may decide that it is inappropriate to include individuals with Unknown status at the geographic jurisdiction level in the vaccination coverage assessment.

Learn more about Patient Status

This mini guide provides an overview of the in-depth, technical information related to these best practices found in the full Management of Patient Active/Inactive Status in Immunization Information Systems: Replacement of 2005 Guidelines” best practice guide. To download, visit the AIRA web site at:

<http://www.immregistries.org/resources/aira-mirow>.