

文章

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[Open Exchange](#)

## 如使用HL7相應地更新結果參考範圍和異常標誌

在本文中,我們將演示此內容:

- 使用自定義實用程序函數從數據庫更新 ReferencesRange(OBX:7) 針對 ObservationIdentifier(OBX:3.1)[TestCode]
- 根據數據庫實用程序函數中的 ObservationIdentifier(OBX:3.1)[TestCode] 和 ObservationValue(OBX:5)[Result] 更新異常標誌 (OBX:8)
- 廢異常標誌的路由消息 (OBX:8)

以下是主要和轉換後的 HL7 2.5 ORU\_R01 消息:

5	OBX	1   NM   1000 ^ TotalProtein   -   4.3   gm/dl   -   -   -   -   -   E	5	OBX	1   NM   1000 ^ TotalProtein   -   4.3   gm/dl   5.9-8.4   L   -   -   -   -   E
6	OBX	2   NM   1001 ^ Albumin   -   3.7   gm/dl   -   -   -   -   -   E	6	OBX	2   NM   1001 ^ Albumin   -   3.7   gm/dl   3.2-5.2   -   -   -   -   E
7	OBX	3   NM   1002 ^ Globulin   -   3.9   gm/dl   -   -   -   -   -   E	7	OBX	3   NM   1002 ^ Globulin   -   3.9   gm/dl   1.7-3.7   H   -   -   -   -   E
8	OBX	4   NM   1003 ^ A/G Ratio   -   1.2   -   -   -   -   -   E	8	OBX	4   NM   1003 ^ A/G Ratio   -   1.2   -   1.1-2.9   -   -   -   -   E
9	OBX	5   NM   1004 ^ Glucose   -   71   mg/dL   -   -   -   -   -   E	9	OBX	5   NM   1004 ^ Glucose   -   71   mg/dL   70-99   -   -   -   -   E
10	OBX	6   NM   1005 ^ Sodium   -   134   mmol/L   -   -   -   -   -   E	10	OBX	6   NM   1005 ^ Sodium   -   134   mmol/L   133-145   -   -   -   -   E
11	OBX	7   NM   1006 ^ Potassium   -   4.3   mmol/L   -   -   -   -   -   E	11	OBX	7   NM   1006 ^ Potassium   -   4.3   mmol/L   3.3-5.3   -   -   -   -   E
12	OBX	8   NM   1007 ^ Chloride   -   96   mmol/L   -   -   -   -   -   E	12	OBX	8   NM   1007 ^ Chloride   -   96   mmol/L   96-108   -   -   -   -   E
13	OBX	9   NM   1008 ^ CO2   -   24   mmol/L   -   -   -   -   -   E	13	OBX	9   NM   1008 ^ CO2   -   24   mmol/L   21-29   -   -   -   -   E
14	OBX	10   NM   1009 ^ BUN   -   17   mg/dl   -   -   -   -   -   E	14	OBX	10   NM   1009 ^ BUN   -   17   mg/dl   7-25   -   -   -   -   E
15	OBX	11   NM   1010 ^ Creatinine   -   1.1   mg/dl   -   -   -   -   -   E	15	OBX	11   NM   1010 ^ Creatinine   -   1.1   mg/dl   0.6-1.3   -   -   -   -   E
16	OBX	12   NM   2000 ^ BUN/CreatRatio   -   15.5   -   -   -   -   -   E	16	OBX	12   NM   2000 ^ BUN/CreatRatio   -   15.5   -   10-28   -   -   -   -   E
17	OBX	13   NM   2001 ^ Calcium   -   8.9   mg/dl   -   -   -   -   -   E	17	OBX	13   NM   2001 ^ Calcium   -   8.9   mg/dl   8.4-10.4   -   -   -   -   E
18	OBX	14   NM   2002 ^ UricAcid   -   6.2   mg/dl   -   -   -   -   -   E	18	OBX	14   NM   2002 ^ UricAcid   -   6.2   mg/dl   2.4-7   -   -   -   -   E
19	OBX	15   NM   2003 ^ Iron   -   87   mcg/dl   -   -   -   -   -   E	19	OBX	15   NM   2003 ^ Iron   -   87   mcg/dl   30-160   -   -   -   -   E
20	OBX	16   NM   2004 ^ Bilirubin.Total   -   0.6   mg/dl   -   -   -   -   -   E	20	OBX	16   NM   2004 ^ Bilirubin.Total   -   0.6   mg/dl   0.1-1   -   -   -   -   E
21	OBX	17   NM   2005 ^ LDH   -   190   u/l   -   -   -   -   -   E	21	OBX	17   NM   2005 ^ LDH   -   190   u/l   94-250   -   -   -   -   E
22	OBX	18   NM   2006 ^ AlkPhos   -   63   u/l   -   -   -   -   -   E	22	OBX	18   NM   2006 ^ AlkPhos   -   63   u/l   39-120   -   -   -   -   E
23	OBX	19   NM   2007 ^ AST(SGOT)   -   33   u/l   -   -   -   -   -   E	23	OBX	19   NM   2007 ^ AST(SGOT)   -   33   u/l   0-37   -   -   -   -   E
24	OBX	20   NM   3000 ^ Phosphorous   -   2.8   mg/dl   -   -   -   -   -   E	24	OBX	20   NM   3000 ^ Phosphorous   -   2.8   mg/dl   2.6-4.5   -   -   -   -   E
25	OBX	21   NM   3001 ^ ALT(SGPT)   -   35   u/L   -   -   -   -   -   E	25	OBX	21   NM   3001 ^ ALT(SGPT)   -   35   u/L   0-40   -   -   -   -   E
26	OBX	22   NM   3002 ^ GáááGTP   -   33   u/L   -   -   -   -   -   E	26	OBX	22   NM   3002 ^ GáááGTP   -   33   u/L   7-51   -   -   -   -   E

第 1 步: 我們將在數據庫中保存參考範圍, 為此使用了 TestRanges 表類:

Table: resultVer.TestRanges  Table Info  Fields  Maps

Field Name	Datatype	Column #	Required	Unique
ID	%Library.BigInt	1	Yes	Yes
TestCode	%Library.Integer	2	No	No
MinRange	%Library.Double	3	No	No
MaxRange	%Library.Double	4	No	No

第 2 步: 我們需要創建一個自定義函數來獲取引用範圍, 為此我們在實用程序類中創建了 GetReferenceRange() ClassMethod 函數。請注意這個類應該是來自 EnsRule.FunctionSet 的擴展

```
// Get reference ranges from TestRanges table against test code
Debug this method
ClassMethod GetReferenceRange(TestCode As %String) As %String
{
    &sql(SELECT MinRange, MaxRange into :minRange,:maxRange
    FROM resultVer.TestRanges where TestCode = :TestCode)
    set minRange = $DECIMAL(minRange,3)
    set maxRange = $DECIMAL(maxRange,3)

    Set refRange = minRange _ "-" _ maxRange
    //Set refRange = "Test"
    Return refRange
}
```

我們需要創建另一個函數來設置異常標誌, 為此我們在實用程序類中創建了 SetAbnormalFlag() ClassMethod 函數

```
// Get Abnormal flag based on Test Code and Result
Debug this method
ClassMethod SetAbnormalFlag(TestCode As %String, Result As %Decimal) As %String
{
    &sql(SELECT MinRange, MaxRange into :minRange,:maxRange
    FROM resultVer.TestRanges where TestCode = :TestCode)
    //Set Flag to L in case of Low Range
    if Result < minRange
    {
        Return "L"
    }
    //Set Flag to H in case of High Range
    elseif Result > maxRange
    {
        Return "H"
    }
    //Return empty strign in case of normal result
    Return ""
}
```

第 3 步：現在我們將在數據轉換 (UpdateReferenceRangesDTL) 中使用這些函數。我們對重複段使用 foreach 循環：

#	Action	Condition	Property	Value	Key / Transform
1	for each ▼		source.{PIDgrpgrp()}		k1
2	for each ▼		source.{PIDgrpgrp(k1).ORCgrp()}		k2
3	for each ▼		source.{PIDgrpgrp(k1).ORCgrp(k2).OBXgrp()}		k3
4	set		target.{PIDgrpgrp(k1).ORCgrp(k2).OBXgrp(k3)...}	##class(resultVer.Utility).GetReferenceRang...	""
5	set		target.{PIDgrpgrp(k1).ORCgrp(k2).OBXgrp(k3)...}	##class(resultVer.Utility).SetAbnormalFlag(...)	""
6	endeach				
7	endeach				

Action:

Property:

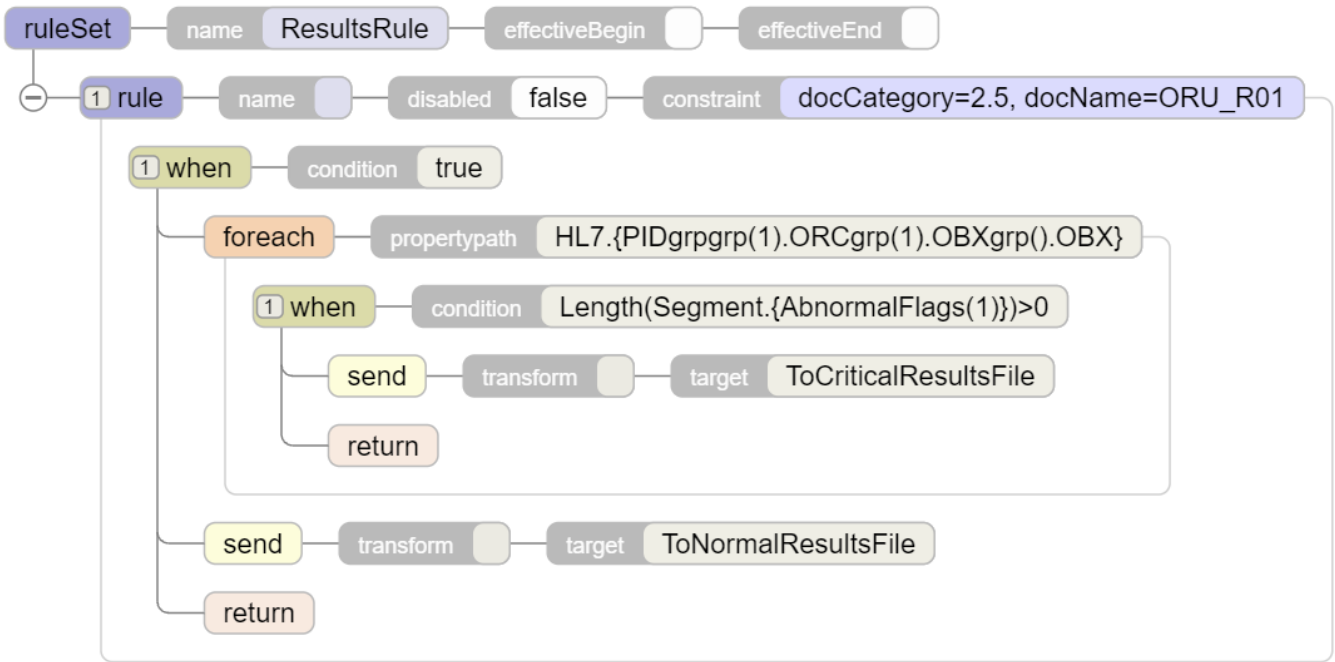
Property whose value will be set. Double-clicking on a target property in the diagram will place that property in this field.

Value:

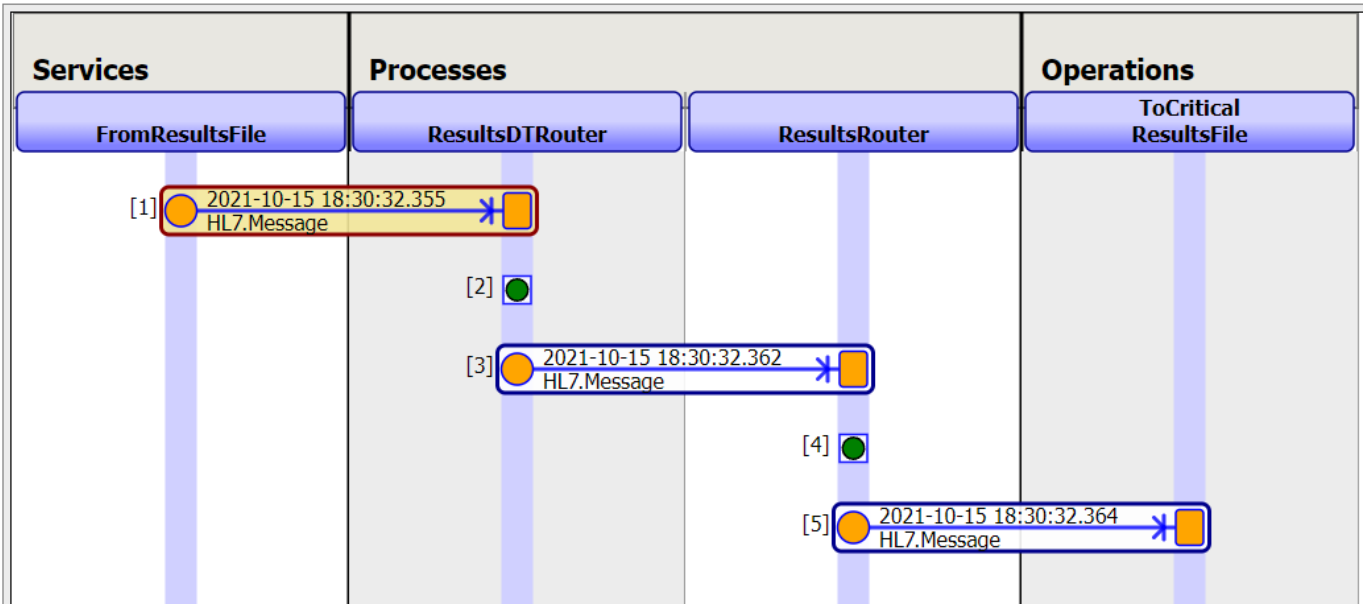
Value to assign to the property. Double-clicking on a property in the diagram will place that property in this field.

請注意，為了獲得異常標誌，我們必須遞送 OBX:Observation Value (Result) 和 OBX:Observation Identifier(Test Code)

第 4 步：如設置了異常標誌，我們將從“ResultsDTRule”業務規則中轉換消息並消息再次發送到“ResultsRule”業務規則以將消息發送到“ToCriticalResultsFile”標，否則將發送到“ToCriticalResultsFile”標：



跟踪视觉跟踪 面的视觉跟踪用于消息成功发送到“ToCriticalResultsFile”操



謝謝

[#DTL](#) [#SQL](#) [#业务规则](#) [#Ensemble](#) [#InterSystems IRIS for Health](#)  
[在 InterSystems Open Exchange 上检查相关应用程序](#)

源 URL: <https://cn.community.intersystems.com/post/%E5%A6%82%E4%BD%95%E4%BD%BF%E7%94%A8h7%E7%9B%B8%E6%87%89%E5%9C%B0%E6%9B%B4%E6%96%B0%E7%B5%90%E6%9E%9C%E5%8F%83%E8%80%83%E7%AF%84%E5%9C%8D%E5%92%8C%E7%95%B0%E5%B8%B8%E6%A8%99%E8%AA%8C>