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BUSINESS & TECHNOLOGY

# CUSTOMIZING NEXTGEN EHR QUICK VIEWS

## WHAT IS AN EHR QUICK VIEW?

Quick View is a feature introduced in NextGen5.8 UD2 to enable users to see historical and current patient information from two side panels that can slide out while documenting on templates. These side panels or tabs “generate a document” in real time. This document can be saved and attached to the patient’s chart.

There are 2 types:

**Summary View** – Displays a summary of the selected patient’s historical data.

**Quick View** – Displays a summary of the selected patient’s current encounter.

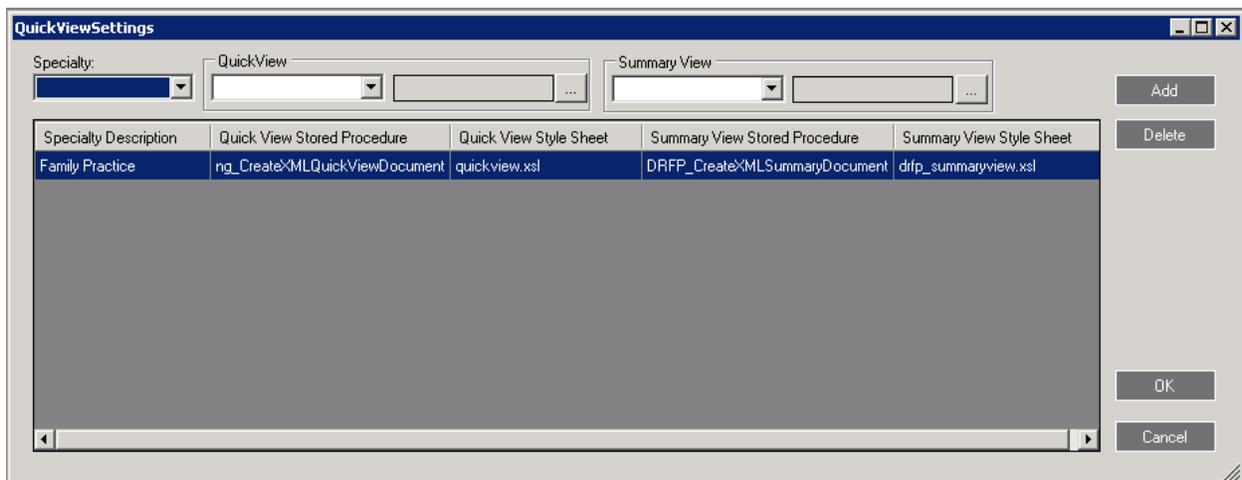
These tabs are refreshed when a template in the encounter is saved.

The information in these tabs is displayed using a SQL Stored Procedure and a XSLT style sheet.

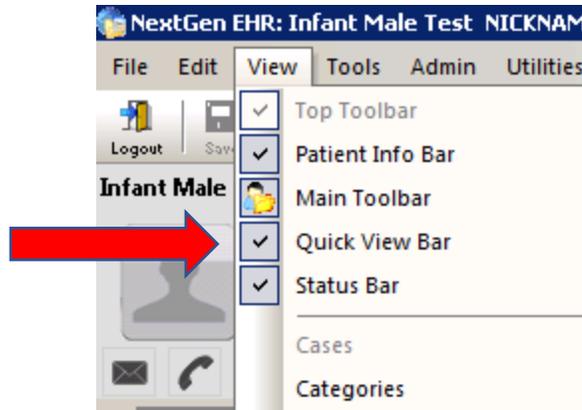
Quick View comes with a default stored procedure for each type and style sheets for various specialties, however you can only specify one Summary View and one Quick View for each specialty.

## HOW DOES QUICK VIEW WORK?

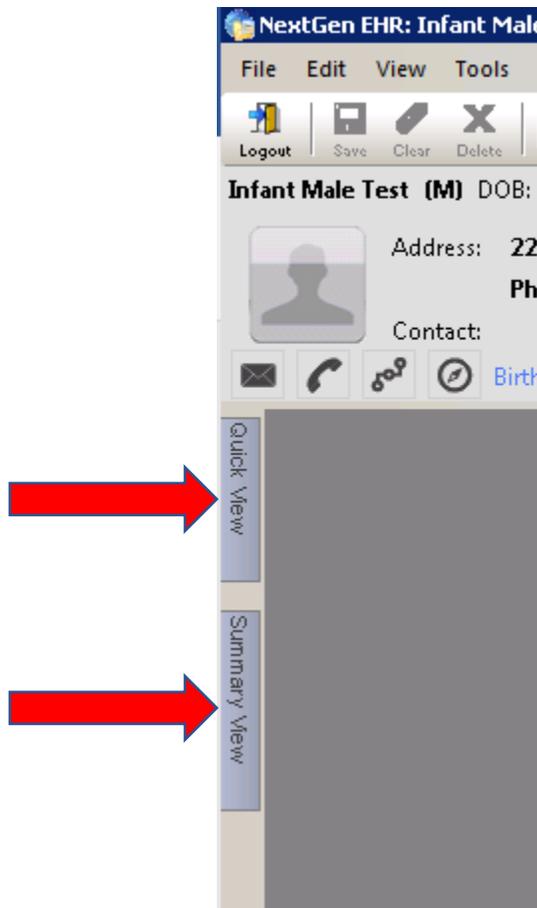
First, a file reference to the folder containing the stylesheets is specified in System Administration – Universal Preferences. Next, the SQL Stored Procedure and the XSLT stylesheet are specified in EHR under Admin – Quick View Settings.



Once a patient is selected, the user then clicks View – Quick View Bar to make the tabs visible. Currently, this setting is not “remembered” by NextGen.



Now, the panel sliders or tabs are visible on the left side of the screen.



When an EHR user clicks to slide out one of the Quick View panels, EHR executes the specified SQL Stored Procedure for the specialty selected on the Home page and the user instantly sees the Quick View.

Infant Male Test (M) DOB: 02/01/2017 (5 months 9 days)

Alerts Allergies Problems Diagnoses Medications Appointments

Address: 22 Emst Phoenix, AZ 85050

Parent/Guardian: PCP: Nelson MD, Tiffany

Contact: Patient Portal: Referring: Piccione MD, Lisa

Enc. Insurance: Rendering: Piccione MD, Lisa

Birth History NextMD Support Sticky Note Referring Provider HIPAA Advance Directives Screening Summary

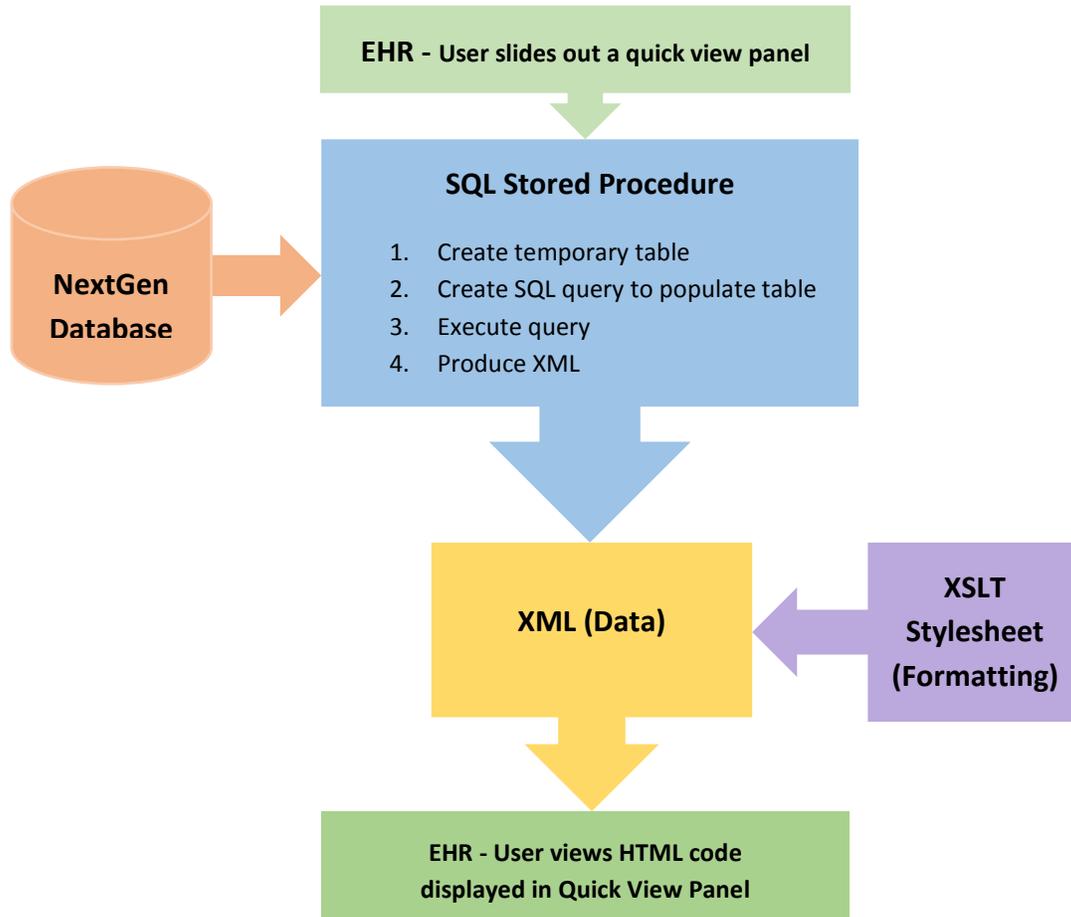
Assessments / Plan						
Date	Provider	Type	Code	Description	Plan	
03/01/2017	Turner DO	1	Patient I10 Plan	Essential (primary) hypertension	Refill medication Follow up in 6 mo or sooner if needed Recommend healthy diet and exercise	
03/01/2017	Turner DO	1	Patient Z00.00 Plan	Encntr for general adult medical exam w/o abnormal findings	IMH reviewed with patient and issues addressed Yellow sticky updated w/ specialist list M/F/S histories reviewed Recommend healthy diet and exercise using sunscreen daily Advanced Directives: Vaccines: Hep C testing (birth b/w 1945-1965) completed Colon Cancer Screening: Paps no longer followed Mammogram: DEXA: AAA screening: Prostate screening reviewed: opts Lung Cancer Screening:	
03/01/2017	Turner DO	1	Patient Z00.00 Plan	Encntr for general adult medical exam w/o abnormal findings	Overall doing well Recommend healthy diet, low in animal fats and simple carbohydrates Recommend some form of daily physical activity - 30 min of aerobic activity, 5 days a week is ideal Vaccines Pap Cholesterol check Mammo Colon Cancer Screening Prostate screening Labs per request	
02/15/2017	Rodriguez MD	1	Patient J06.9 Plan	Acute upper respiratory infection, unspecified	Viral etiology discussed; good news is, you do not need antibiotics Time line discussed- 7-10 more days of symptoms Mucinex dm to keep cough wet and to move phlegm out of the bronchi Pseudoephedrine 60 120mg in am for 3-5 days Benedol	

Behind the scenes, the SQL Stored Procedure first creates a temporary table as a holding place to assemble the requested data. A SQL query is built to select the desired data from the NextGen database tables. The query is then executed to insert the data into the temporary table. The temporary table is queried to present the data as an XML document.

XML (Extensible Markup Language) is a markup language defining a set of rules for encoding documents in a text format both human-readable and machine-readable. It creates a structure for sharing data between different applications, in this case between the NextGen database and the EHR application. While the XML code is readable by a human, it still isn't in the optimal format for the end user.

XSLT (Extensible Stylesheet Language Transformations) is a language for transforming XML documents into other formats, such as HTML for web pages. The Quick View panel is essentially a web page made up of HTML code, so the XSLT file works with the XML data file to present the data in the optimal format for the end user.

The entire process works in real time. Additionally, the end user may have the Quick View panel pinned open. In this case the panel is refreshed whenever a template is saved and the database tables are updated.



## CUSTOMIZING QUICK VIEW

Some providers may feel the default versions of Quick View give either too much information or don't give the most useful information, so you may want to customize the SQL Stored Procedure and the XSLT stylesheet to better meet their needs. This requires knowledge of SQL, XML, XSLT and HTML. I have created a simplified example to show the basic components.

### SQL STORED PROCEDURE

Decide specifically what data fields you want to display and which NextGen data tables the fields reside in. Create a temporary table with a column for each data field.

```

CREATE TABLE #temp_table (
    field1 VARCHAR(max) NULL,
    field2 VARCHAR(10) NULL,
    field3 VARCHAR (10) null,
    field4 DATETIME,
    field5 int NULL
)
  
```

Declare a variable to store the SQL query you will create in the next section. You may want to create a test query and run it in SQL Server Management Studio to assure the query works as intended. The query will SELECT data from the NextGen Database and INSERT INTO the temporary table. Note the Enterprise ID, Practice ID, Person ID, Encounter ID and Enterprise Chart are passed into the SQL Stored Procedure as parameters.

```
DECLARE @my_sql NCHAR(4000) = ''

SELECT @my_sql =
    'INSERT INTO #temp_table
    (
        field1,
        field2,
        field3,
        field4,
        field5
    )
    SELECT      data1, data2, data3, data4, data5
    FROM        ng_table
    WHERE
    ng_table.enterprise_id = @p_enterprise_id AND
    ng_table.practice_id = @p_practice_id OR @p_ent_chart = ''Y'' AND
    ng_table.person_id = @p_person_id'
```

Next, execute the query.

```
EXEC sp_executesql @my_sql
    ,N'@p_enterprise_id CHAR(5),
    @p_practice_id CHAR(4),
    @p_person_id UNIQUEIDENTIFIER,
    @p_enc_id UNIQUEIDENTIFIER,
    @p_ent_chart CHAR(1)',
    @p_enterprise_id = @v_enterprise_id,
    @p_practice_id = @v_practice_id,
    @p_person_id = @v_person_id,
    @p_enc_id = @v_enc_id,
    @p_ent_chart = @v_ent_chart
```

The temporary table is now populated, so the next step will select from the temporary table to create the XML document.

```
SELECT      field1
            field2,
            field3,
            field4
            field5
    FROM #temp_table
    ORDER BY field4 DESC,
    FOR
    XML PATH ('MyXMLRecord'),
    ROOT('MasterDocument'),
    TYPE
```

## XML DOCUMENT

The SQL query found 3 records, so the resulting XML document will look like this.

```
<?xml version="1.0"?>
- <MasterDocument>
  - <MyXMLRecord>
    <field1>This is the record 1 data for field 1.</field1>
    <field2>This is the record 1 data for field 2.</field2>
    <field3>This is the record 1 data for field 3.</field3>
    <field4>This is the record 1 data for field 4.</field4>
    <field5>This is the record 1 data for field 5.</field5>
  </MyXMLRecord>
  - <MyXMLRecord>
    <field1>This is the record 2 data for field 1.</field1>
    <field2>This is the record 2 data for field 2.</field2>
    <field3>This is the record 2 data for field 3.</field3>
    <field4>This is the record 2 data for field 4.</field4>
    <field5>This is the record 2 data for field 5.</field5>
  </MyXMLRecord>
  - <MyXMLRecord>
    <field1>This is the record 3 data for field 1.</field1>
    <field2>This is the record 3 data for field 2.</field2>
    <field3>This is the record 3 data for field 3.</field3>
    <field4>This is the record 3 data for field 4.</field4>
    <field5>This is the record 3 data for field 5.</field5>
  </MyXMLRecord>
</MasterDocument>
```

Note the XML document is not stored, so for debugging purposes, you can manually execute your SQL Stored Procedure in SQL Server Management Studio and examine the resulting XML document and save it to a file if desired.

## XSLT STYLESHEET

XSLT is a declarative programming language written in XML. The statements in the XSLT stylesheet transform each element in the XML document into HTML elements with the desired formatting (e.g. font, color, margins, spacing, etc.) This transformation is executed in memory and can be simple or quite complex.

Here is a basic style sheet to transform the XML into a basic table.

```

<?xml version="1.0"?>
- <xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform" version="1.0">
  <xsl:variable name="defaultFont">font-family:Segoe UI; font-size:10pt;</xsl:variable>
  <xsl:variable name="defaultHeaderFont">font-weight:bold; {$defaultFont}width:100%;</xsl:variable>
- <xsl:template match="/">
  - <html>
    - <body style="{ $defaultFont} background-color:#FFFFFF;">
      - <xsl:choose>
        - <xsl:when test="MasterDocument/MyXMLRecord">
          - <div style="{ $defaultHeaderFont}">
            <div style="float:left;">My Header</div>
          </div>
          - <div style="margin-left:0px;">
            - <table style="{ $defaultFont} width:98%;" border="0" cellspacing="0">
              - <tr style="background-color:#DEDEDE; { $defaultHeaderFont}">
                <td style="width:20%;">Field1</td>
                <td style="width:20%;">Field2</td>
                <td style="width:20%;">Field3</td>
                <td style="width:20%;">Field4</td>
                <td style="width:20%;">Field5</td>
              </tr>
              - <xsl:for-each select="MasterDocument/MyXMLRecord">
                - <xsl:variable name="altColor">
                  - <xsl:choose>
                    <xsl:when test="position() mod 2 = 0">#EEF0F3</xsl:when>
                    <xsl:otherwise>#FFFFFF</xsl:otherwise>
                  </xsl:choose>
                </xsl:variable>
                - <tr style="vertical-align: top; bgcolor="{ $altColor}">
                  - <td style="width:20%">
                    <xsl:value-of select="field1"/>
                  </td>
                  - <td style="width:20%">
                    <xsl:value-of select="field2"/>
                  </td>
                  - <td style="width:20%">
                    <xsl:value-of select="field3"/>
                  </td>
                  - <td style="width:20%">
                    <xsl:value-of select="field4"/>
                  </td>
                  - <td style="width:20%">
                    <xsl:value-of select="field5"/>
                  </td>
                </tr>
              </xsl:for-each>
            </table>
          </div>
        </xsl:when>
      </xsl:choose>
    </body>
  </html>
</xsl:template>
</xsl:stylesheet>
    
```

The resulting display looks similar to this example.

Assessments / Plan					
Date	Provider	Type	Code	Description	Plan
02/15/2017	Rodriguez MD	1	Patient Z01.818 Plan	Encounter for other preprocedural examination	Functional capacity is No additional cardiac workup/evaluation required Medical issues well managed - no change to regimen No contraindication to proceed with procedure as planned Discussed meds; hold NSAIDS and ASA for 1 week prior to surgery
12/30/2016	Nelson MD	1	Patient Z00.00 Plan	Encntr for general adult medical exam w/o abnormal findings	Generally healthy year old male Colon cancer screening- Prostate cancer screening guidelines discussed- Cholesterol testing- Vaccines- Recommend yearly Well Exam Recommend healthy diet and exercise as able
12/30/2016	Nelson MD	1	Patient Z00.00 Plan	Encntr for general adult medical exam w/o abnormal findings	Generally healthy year old female Pap not needed- Mammogram guidelines reviewed- Colon cancer screening- Cholesterol testing- Vaccines- Recommend yearly well exam Recommend healthy diet and regular exercise as able
12/30/2016	Nelson MD	1	Patient Z00.00 Plan	Encntr for general adult medical exam w/o abnormal findings	Generally healthy year old female Pap not needed- Mammogram guidelines reviewed- Colon cancer screening- Cholesterol testing- Vaccines- Recommend yearly well exam Recommend healthy diet and regular exercise as able

## QUESTIONS TO THINK ABOUT WHEN CONSIDERING CUSTOMIZING A QUICK VIEW

- What specific data do the providers want to see?
- How should the data be sorted?
- How should that data be formatted?
- Do you have the technical skills to customize the components?

## CONTACT INFO

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