

Example of Traditional HL7 Push Model 3rd Party Integration

Near Real-time at Best

- 1) Log in to Source EHR
- 2) Perform some actions e.g. complete a screener

Condition	Yes	No	None
Anemia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxiety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Arthritis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asthma	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cancer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cataracts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CHF	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clotting disorder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
COPD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Depression	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diabetes mellitus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emphysema	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
GERD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Glaucoma	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heart murmur	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hepatitis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HIV/AIDS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hypertension	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kidney disease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meningitis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Myocardial infarction	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nerve / muscle disease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Osteoporosis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seizures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sickle cell anemia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stroke	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Substance abuse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thyroid disease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tuberculosis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ulcers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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- 3) Back-end EHR activity needs to be created to initiate a push of the data to the 3rd party application



HL7 Data Exchange between systems

3rd Party Application

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- 4) Data processing at the 3rd party end (may or may not be notification back to the EHR)



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- 5) Provider needs to leave the EHR and log into the third party application and find patient & encounter
 - At best, there may be a single-sign-on, however you need to account for any time lag in the HL7 and data processing before the data is available



Same 3rd Party Integration Using FHIR API

Near Real-time at Best

- 1) Provider logs in to EHR
- 2) Performs Assessment

The screenshot shows a 'Medical History' form with a grid of medical conditions and 'Yes/No' checkboxes. The date '6/19/2012' is displayed in the top right. The form includes buttons for '+ Add', '+ Pertinent Negative', and 'Mark as Reviewed'. The conditions listed are:

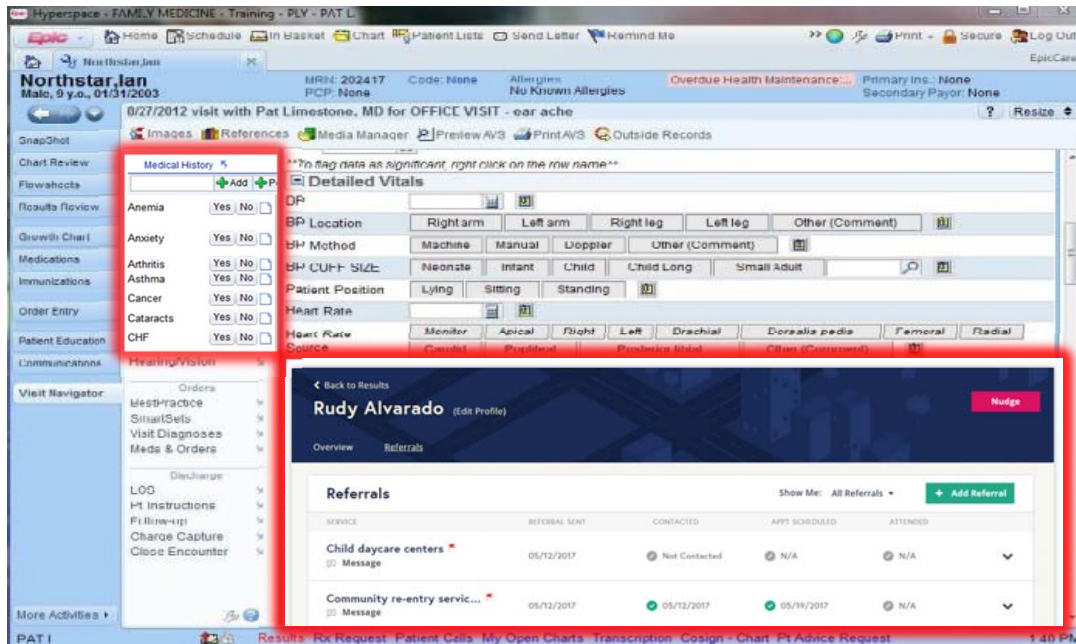
Anemia	Yes No	Diabetes mellitus	Yes No	Myocardial infarction	Yes No
Anxiety	Yes No	Emphysema	Yes No	Nerve / muscle disease	Yes No
Arthritis	Yes No	GERD	Yes No	Osteoporosis	Yes No
Asthma	Yes No	Glaucoma	Yes No	Seizures	Yes No
Cancer	Yes No	Heart murmur	Yes No	Sickle cell anemia	Yes No
Cataracts	Yes No	Hepatitis	Yes No	Stroke	Yes No
CHF	Yes No	HIV/AIDS	Yes No	Substance abuse	Yes No
Clotting disorder	Yes No	Hypertension	Yes No	Thyroid disease	Yes No
COPD	Yes No	Kidney disease	Yes No	Tuberculosis	Yes No
Depression	Yes No	Meningitis	Yes No	Ulcers	Yes No

Other Medical History: Seasonal allergies

Same 3rd Party Integration Using FHIR API

Near Real-time at Best

- 2) API Exchange of data in real-time provides a seamless user experience giving the impression the EHR itself is doing the work as clinician never had to leave the chart.



FHIR Push of patient data in context of patient and with the correct security of the provider

```
{
  "resourceType": "Patient",
  "id": "example",
  "identifier": [
    {
      "use": "usual",
      "type": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/v2/0203",
            "code": "MR"
          }
        ]
      },
      "system": "urn:oid:1.2.36.146.595.217.0.1",
      "value": "12345",
      "period": {
        "start": "2001-05-06"
      }
    }
  ],
  "assigner": {
    "display": "Acme Healthcare"
  }
},
]
```

Real-time feedback to end user