



**Use Case Title: Diabetes Care: Work, Diet, and Health**

**Overview:** Tim Jones – a 54 year old male police officer has Diabetes and presents at his Primary Care Provider with an abnormal lab result. Follow his journey through Primary Care and his nutrition consultation as his care pathway is defined and implemented. Through data sharing, clinical decision support for his work situation, and utilization of a centralized information repository that is accessed by disparate providers, Mr. Jones receives the appropriate care to improve his nutritional intake, health and quality of life.

**Value:** Interoperability supports a shared care plan across community-based services through referrals, improving the care management for chronic disease. Social determinants of health integrated into the care pathways help the care team benefit from public health knowledge to modify patient care activities, specifically at the interface of work and health. Monitoring of the patient within the community enables tracking of individual outcomes as well as data aggregation for population health.

**Scheduled times:** Tuesday: 12:00-12:30  
 Tuesday 4-4:30  
 Tuesday 5:30-6  
 Wednesday 12-12:30  
 Wednesday 2:30-3  
 VIP Tour: Wednesday 11:30-12



Scenario	Vendor/Product	Standards
Tim Jones, a 54 year old white male police officer in the village of Anytown, OH, has had well-controlled diabetes mellitus for the past five years.		
He has an appointment with his primary care clinician for routine six month follow-up and had laboratory tests performed last week which included a HbA1c. The result was 8.8%, a level higher than his target level of 7%. He checks in to the clinic. His insurance and job have not changed in the past six months. His pulse is 80, BP 130/80, Height 5'11", weight 230 lbs. When he meets with his clinician, he reports that in the past six months he has gained 15 pounds. He takes metformin 1000 mg twice a day.	AllianceChicago/ Qvera, GE Healthcare	IHE HW/ODH IHE XDR
Because of poor control of diabetes, the clinician is prompted by the EHR to ask five questions about work: Does your job involve ANY of the following job characteristics? (Shiftwork, Temperature extremes , Heavy physical activity , Difficulty taking medications or eating regularly, Safety sensitive activity )	AllianceChicago/ Qvera, GE Healthcare (AHRQ)	HL7 CQL, FHIR

Scenario								Vendor/Product	Standards																								
<p>Mr. Jones reports that the force in his small city has lost a number of officers to retirement and he now works rotating shifts, 12 hours long, two days on, two days off, three days on, then two days off, then two nights on, three days off - repeating in two week increments.</p> <table border="1"> <thead> <tr> <th></th> <th>Mon</th> <th>Tue</th> <th>Wed</th> <th>Thu</th> <th>Fri</th> <th>Sat</th> <th>Sun</th> </tr> </thead> <tbody> <tr> <td>Wk1, days</td> <td>6a-6p</td> <td>6a-6p</td> <td>Off</td> <td>Off</td> <td>6a-6p</td> <td>6a-6p</td> <td>6a-6p</td> </tr> <tr> <td>Wk2, nights</td> <td>Off</td> <td>Off</td> <td>6p-6a</td> <td>6p-6a</td> <td>Off</td> <td>Off</td> <td>Off</td> </tr> </tbody> </table> <p>He spends nearly all of his work time in a patrol car, and eats many meals from fast food sources. He kept his medication schedule intact, as he takes metformin twice daily for his diabetes. As a police officer, it is imperative that he remain alert on the job, and he fights off sleepiness with coffee and diet soda. The clinician identifies obesity and poorly controlled diabetes as problems. The provider refers the patient to a nutritionist.</p>									Mon	Tue	Wed	Thu	Fri	Sat	Sun	Wk1, days	6a-6p	6a-6p	Off	Off	6a-6p	6a-6p	6a-6p	Wk2, nights	Off	Off	6p-6a	6p-6a	Off	Off	Off		
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<p>The community-based Registered Dietitian/Nutritionist (RDN) receives the new referral request notification in her system, which queries the FHIR server to pull in pertinent information about Mr. Jones' conditions and data from his recent primary care visit. This saves time for both the patient and dietitian over today's typical referrals where the dietitian would not have any information until the patient arrives for his visit. The dietitian completes nutrition consultation documentation for the patient entering a nutrition diagnosis of excess energy intake and inconsistent carbohydrate intake related to meal planning challenges and reliance on fast food during shift work. Mr. Jones is motivated and ready to begin lifestyle changes. He agrees to the goal to lose 10 lbs over the next 3 months. Nutrition education and skill development priority interventions include packing lunch and two snacks for extended shifts, and learning to substitute fresh fruit for dessert and high-calorie bakery choices. A nutrition prescription for a consistent amount of carbohydrates, aiming for 65 gm/meal along with low-fat protein during his 12-hour work shifts is recommended. This Nutrition Care Plan is posted back to the FHIR server where it can be available to both the patient and the collaborating care team.</p>								Academy of Nutrition and Dietetics	FHIR Nutrition Care Plan																								
<p>The referral summary document from the community-based Registered Dietitian/Nutritionist (RDN) is posted to the infrastructure repository's FHIR server. The RDN used a nutrition outcomes management system application with a FHIR subscription for referral notifications.</p>								Infor	HL7 FHIR Careplan, Goal, Subscribe																								

**Data exchange standards:**

- **IHE Healthy Weight with the Occupational Data for Health extension** (online at [https://www.ihe.net/uploadedFiles/Documents/QRPH/IHE\\_QRPH\\_Suppl\\_HW.pdf](https://www.ihe.net/uploadedFiles/Documents/QRPH/IHE_QRPH_Suppl_HW.pdf))
- **IHE IT Infrastructure Technical Framework: Profile for Cross-enterprise Document Reliable Interchange (XDR)** (Online at [http://ihe.net/uploadedFiles/Documents/ITI/IHE\\_ITI\\_TF\\_Vol2b.pdf](http://ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Vol2b.pdf))
- **HL7 Cross-Paradigm Specification: Clinical Quality Language, Release 1 (CQL)** (Online at [http://www.hl7.org/implement/standards/product\\_brief.cfm?product\\_id=400](http://www.hl7.org/implement/standards/product_brief.cfm?product_id=400))
- **FHIR** (Online at <http://hl7.org/fhir/index.html> -Careplan, Goal, Subscription, Patient, Condition, Observation)