

INTEROPERABILITY SHOWCASE™



Use Case Title: Reporting, Work & Cancer Care Continuum

Short Description: Akari, a seasonal lifeguard at her community’s outdoor swimming pool, shared concern about an unusual mole on the top of her right shoulder with her Primary Care Provider (PCP). Given her work outside during the summer months and a physical exam of the concerning mole, the PCP suspects melanoma. According to the American Cancer Society, this year, “about 99,780 new melanomas will be diagnosed (about 57,180 in men and 42,600 in women). About 7,650 people are expected to die of melanoma (about 5,080 men and 2,570 women).” Yet, the 5-year survival rate is 99% for localized melanoma with “no sign that the cancer has spread beyond the skin where it started.” Early recognition and intervention are key to survival and Akari is referred to a Dermatologist, who does a biopsy of the lesion and sends a sample to Pathology. This demonstration follows Akari through these care transitions and to an Oncologist, who reviews the pathology report which confirmed the diagnosis of melanoma. Akari and her care team develop a treatment plan, which includes recommendations about altering her sun exposure. Watch as interoperability enables Akari’s care team to identify the appropriate diagnosis, recommend the strongest treatment plan, and facilitate automatic reporting to the state cancer registry and cutting-edge cancer research while Akari completes her treatment plan.

Value: “Public health professionals, researchers, the medical community, and policy makers need information about newly diagnosed cancer cases (called *incidence*) ... to understand and address the nation’s cancer burden. Supported by CDC’s NPCR or the NCI’s SEER Program, central cancer registries collect incidence data to guide planning and evaluation of cancer control programs; help set priorities for allocating health resources; advance clinical, epidemiologic, and health services research.”¹

Participating Vendors: Cerner, CDC, OptimizeRx, UiPath

Scenario	Vendor	Products	Standards
Primary Care Physician Akari is a lifeguard at her community’s outdoor swimming pool and today we will be following Akari in her care journey. She knows the nature of her job involves significant sun	Cerner	Cerner Millennium Cerner Message Center Cerner Ignite	HL7® FHIR® API DirectTrust (DTAAP) CCDA

<p>exposure, so when she notices a mole on the top of her right shoulder, she schedules an appointment with her Primary Care Physician.</p> <p>Her Primary Care Physician refers her to a Dermatology Oncologist.</p>			
<p><i>Dermatology Oncologist</i></p> <p>Akari visits with her dermatology oncologist who performs a shave biopsy and submits an order with the specimen to a pathology lab for processing.</p>	Cerner	Cerner Millennium	V2 5.1 Pathology Order
<p><i>Pathologist</i></p> <p>A pathology report, including biomarker test results, is generated by the pathologist who analyzed the biopsy specimen.</p> <p>The report is sent to the dermatology oncologist for diagnosis confirmation, and the Cancer Registry for surveillance and epidemiological purposes.</p>	UiPath		V2 5.1 Cancer Pathology FHIR IG
<p><i>Dermatology Oncologist - Treatment Review and Decision</i></p> <p>The dermatology oncologist receives the pathology results, confirms the diagnosis of localized melanoma, reviews treatment options, and discusses treatment with Akari.</p> <p>The oncologist receives therapeutic support information delivered by OptimizeRx within Cerner’s PowerChart about recently approved treatment options for melanoma. When the ICD-10 diagnosis is entered, the oncologist receives information about an on-going clinical trial for melanoma patients.</p> <p>As the oncologist plans for his follow-up with Akari and reviews treatment options, an indicator that financial support is offered by the manufacturer for a topical post-surgery medication. The oncologist makes note of this in Akari’s chart to discuss with her upon her follow-up appointment.</p>	OptimizeRx	Therapy Initiation and Persistence Platform: Evidence-based Physician Engagement Program	Proprietary API Information delivery triggered off NPI, ICD-10, and NDC



<p>At the follow-up appointment, the oncologist confirms a course of treatment for Akari.</p> <p>The oncologist is receiving therapeutic support and clinical trial awareness messaging based on a predictive model built into the OptimizeRx Therapy Initiation and Treatment platform. This model is using machine learning to understand which oncologists have current patients who fit the profile of a melanoma patient but have not been treated. This identification is completed using real-world data sets outside the EHR - in this case the model is looking for physicians caring for patients with early indicators of melanoma, such as Akari's biomarker results from her pathology report. The display of the messages are triggered by the oncologist's NPI number, Akari's ICD-10 diagnosis, and the NDC of the topical medication option for Akari, should surgery be recommended as the treatment.</p>			
<p>MedMorph Backend Services App</p> <p>The provider is required to report the cancer case to public health. The MedMorph Reference Architecture provides a standard way to exchange data for multiple purposes, including automating the reporting of a cancer case to a State Cancer Registry, which in turn provides de-identified data for research to a State Public Health Agency. The Cancer report is compiled through the FHIR-based Backend Services App (BSA) that queries the EMR for information needed for reporting and transmits the report to the appropriate State Cancer Registry, which includes occupational data for health. The MedMorph architecture also supports a potential role for the state cancer registry as a trusted third party, similar to the way electronic case reporting for notifiable diseases and conditions now works, where the cancer registry might use the same protocols and tools implemented for eCR to verify, de-identify and retransmit FHIR case reports and updates to a research study. Since Akari is also enrolled in a clinical trial, the WA State DOH/Univ of W Collaborative Research Project will also receive a copy of the case report bundle from the state cancer registry.</p>	MedMorph	Backend Services App	<p>HL7 FHIR Making EHR Data More Available for Research and Public Health (MedMorph) Reference Architecture IG</p> <p>HL7 FHIR Central Cancer Registry Reporting Content IG</p>



<p>State Cancer Registry</p> <p>The State Cancer Registry (represented by CDC) receives and processes the real-time EHR and pathology cancer reports and describes how Akari's and other patients' data are used for public health surveillance and clinical research. Registry data inform state and national cancer statistics and follow-up. Incidence rates, survival rates, and other statistics are calculated from data received from multiple data sources. Data can be sent to state public health agencies, such as Washington State, for additional analyses, including research.</p>	CDC Cancer Registry	CDC eMaRC Plus	<p>HL7 FHIR Central Cancer Registry Reporting Content IG</p> <p>HL7 FHIR Cancer Pathology Sharing IG</p> <p>HL7 FHIR IHE/SDC eCC IG</p>
<p>WA State DOH/Univ of W Collaborative Research Project</p> <p>Akari was enrolled in a clinical trial by her oncologist. A copy of the case report – the same bundle that was sent to the state cancer registry earlier – is sent to the WA DOH for a WA Department of Health/UW collaborative research project on melanomas. The data are managed by the state and shared in de-identified form with UW researchers. This approach takes advantage of the MedMorph infrastructure and uses the same standardized case reporting methods to provide rapid reporting of research results.</p>	WA State Public Health Agency/University of Washington	Research Repository	HL7 FHIR Central Cancer Registry Reporting Content IG

Reference

- Centers for Disease Control and Prevention (2022, February 25). National Program of Cancer Registries (NPCR). <https://www.cdc.gov/cancer/npcr/about.htm>