

ARVO 2021

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# View Abstract

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**CONTROL ID:** 3535016**SUBMISSION ROLE:** Abstract Submission**AUTHORS****AUTHORS (LAST NAME, FIRST NAME):** Kras, Ashley<sup>1</sup>; Oliver, Warren<sup>2</sup>; Gillies, Mark C.<sup>3</sup>; Mair, Michael<sup>4</sup>; Chu, Stephen<sup>4</sup>; Morlet, Nigel<sup>5</sup>; Mbagwu, Michael<sup>6</sup>; Hwang, Thomas S.<sup>7</sup>; Roe, Matthew<sup>1</sup>; Leng, Theodore<sup>6</sup>**INSTITUTIONS (ALL):** 1. Verana Health, CA, United States.

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**Commercial Relationships Disclosure (Abstract):** Ashley Kras: Commercial Relationship(s);Verana Health:Code E (Employment) | Warren Oliver: Commercial Relationship: Code N (No Commercial Relationship) | Mark Gillies: Commercial Relationship(s);Inventor of copyright for software used to track outcomes of eye diseases:Code P (Patent) | Michael Mair: Commercial Relationship: Code N (No Commercial Relationship) | Stephen Chu: Commercial Relationship: Code N (No Commercial Relationship) | Nigel Morlet: Commercial Relationship: Code N (No Commercial Relationship) | Michael Mbagwu: Commercial Relationship(s);Verana Health:Code C (Consultant) | Thomas Hwang: Commercial Relationship(s);National Eye Institute:Code F (Financial Support) | Matthew Roe: Commercial Relationship(s);Verana Health:Code E (Employment) | Theodore Leng: Commercial Relationship(s);Targeted Therapy Technologies:Code F (Financial Support);Genentech:Code C (Consultant);Verana Health:Code C (Consultant);Kodiak:Code F (Financial Support);Regeneron:Code C (Consultant)**Study Group:** (none)**ABSTRACT****TITLE:** Extending interoperability in ophthalmology through Fast Healthcare Interoperability Resource (FHIR)**ABSTRACT BODY:****Purpose:** The US 21st Century Cures Act promoted Healthcare Level Seven's (HL7's) FHIR API utilization to facilitate real-time health data interoperability. FHIR standards have the potential to mobilize siloed digital clinical data to improve healthcare quality, outcomes and value. Although many FHIR resources have been validated, their applicability to ophthalmology remains limited, presenting challenges to practical specialty adoption and clinical utility.**Methods:** To counter this problem, a multidisciplinary collaboration of ophthalmologists, technologists, HL7 representatives, and industry stakeholders compiled an implementation guide (IG) driven by a series of real-world interoperability ophthalmic 'use cases.' FHIR IG development is a semi-structured process defining the technical artifacts and contextual content required to solve such problems. Manual assembly of FHIR base resources referencing existing terminologies (e.g. SNOMED-CT, LOINC, ICD) has aided the foundational codification of clinical, administrative, and workflow elements. Where resource limitations deemed essential to meet use-case defined requirements were identified, FHIR's flexibility enabled the creation of appropriate extensions, constraints and new value sets. This IG will undergo testing at FHIR connectathons prior to formal submission for H7 international balloting.**Results:** We developed 15 use cases to inform IG compilation and published a live, web-accessible IG (based on FHIR v4.0.1), enabling collaborative refinement of FHIR profiles and accompanying content. This provides clinical and implementation guidance, incorporating numerous ophthalmology-specific modifications, such as a uniquely structured laterality definition and novel representations of diagnostic device derivations.

This project has obtained unanimous project support from required HL7 voting procedures, gained formal sponsorship from HL7's Patient Care and EHR Working Groups and approval from the FHIR Management Group, and Clinical Steering Division approval.

**Conclusions:** Mapping ophthalmology's entire clinical lexicon into FHIR format enables unprecedented healthcare data exchange possibilities. Our framework facilitates iterative IG expansion and validation for clinical accuracy and technical functionality. Drawing broad specialty stakeholder engagement to advance adoption, this serves to improve clinical care quality and patient outcomes.

(No Image Selected)

#### **DETAILS**

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#### **TRAVEL GRANTS and AWARDS APPLICATIONS**

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