

# *Update on IEEE SA P2418.6 Standards Development Working Group: Blockchain in Healthcare*

## **Presenter: Heather Leigh Flannery**

Global Lead, ConsenSys Health

Chair, P2418.6 Standards Development Working Group, IEEE SA

Chair, Blockchain in Healthcare Global (BiHG), IEEE ISTO

Chair, Enterprise Ethereum Alliance (EEA) Healthcare SIG

Co-Chair, HIMSS Global Blockchain Task Force

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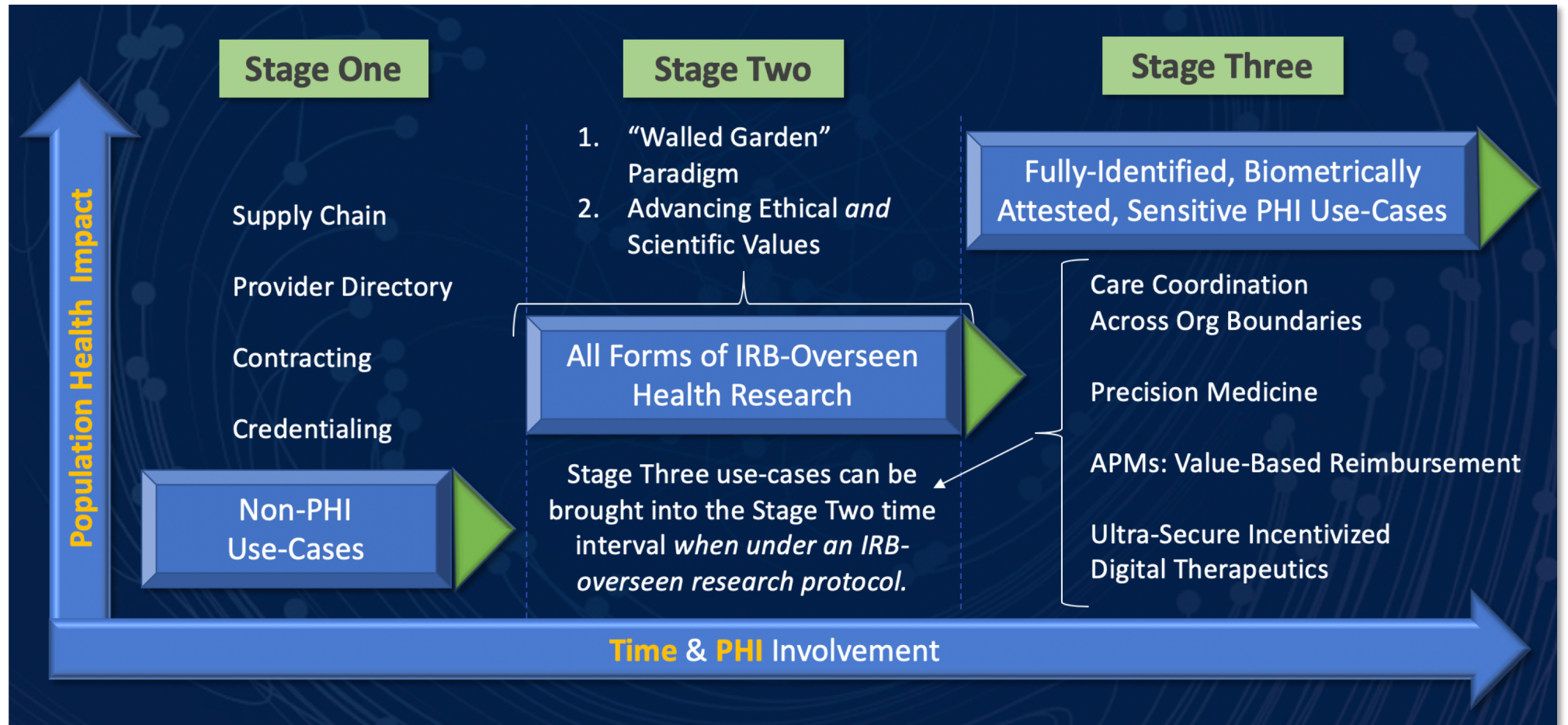
# Agenda

- Industry Context: Blockchain in Healthcare and Life Sciences
- Overview and Introduction: IEEE SA P2418.6 Standard Development Working Group, EMBS-Sponsored
- Overview and Introduction: Blockchain in Healthcare Global (“BiHG”), IEEE ISTO
- Educational Resources to Learn about Blockchain in Healthcare
- Group Discussion: EMBS Engagement and Collaboration w/P2418.6 and BiHG

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# Industry Context: PHI Readiness Framework



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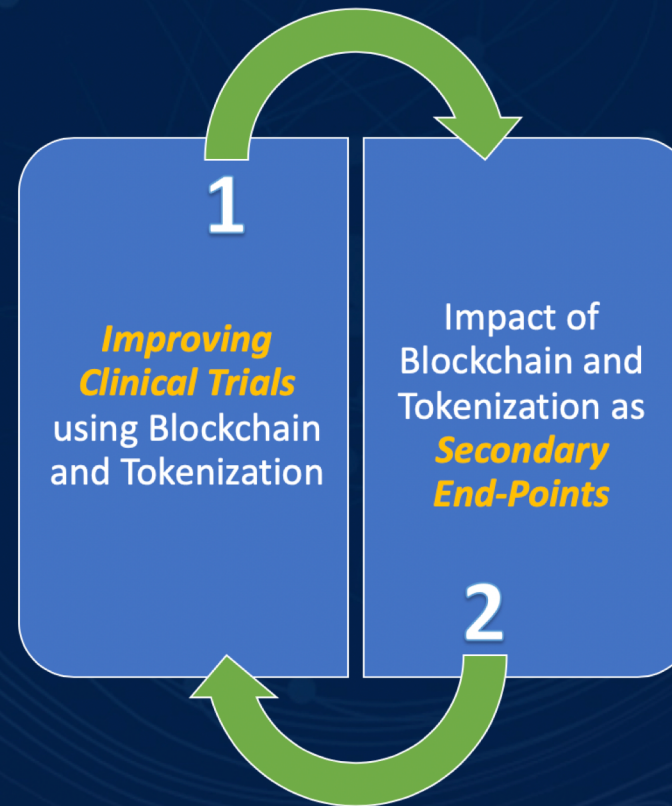




# Clinical Trials: Two Contexts of Value Creation



- Incentivizing and Facilitating Participant Recruitment
- Enrollment and Consents
- Incentivizing Protocol Adherence
- Radically Improve Data Integrity, Reproducibility / Replicability
- Diminish Compliance Burden and Improve Regulatory Relations
- Real-Time Study Data Analytics
- Potential to Remunerate Investors and Data Subjects



- Answer critical **Stage Three** research questions, while including **impact measures** of blockchain and tokenization in study designs as secondary and tertiary end-points
- Gain understanding of impact and justification of use of this technology through classic empirical methods

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# Industry Context: Rethinking “Bench to Bedside”



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# Barriers to Adoption

*Presented in no order....*

Education

Policy,  
Regulation,  
and Legislation

Compliance

Governance

Ethics

Trust

Capital  
Formation

Financial  
Forecasting

Standards and  
Certifications

Cybersecurity

Heuristics

Interoperability

Scalability

Identity

Offchain  
Data

Access

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# P2419.6 Standards Dev Working Group – IEEE SA

- Prestandards and standards (P2418 family) development activities are underway in healthcare in the IEEE Standards Association (IEEE SA), including blockchain for clinical trials, blockchain and IoMT, etc. <https://blockchain.ieee.org/>
- P2418.6 has received internal IEEE sponsorship from the IEEE Engineering in Medicine and Biology Society (EMBS), <https://www.embs.org/about-embs/> → **THANK YOU!**
- **Harmonization** with current standards and standards in development a top priority (NIST, ISO/IEC JTC 1/SC 31/WG 8, FHIR Foundation, W3C, DIF, etc.)



# P2418.6 Standards Dev Working Group – IEEE SA

**P2418.6:** *Standard for the Framework of Distributed Ledger Technology (DLT) Use in Healthcare and the Life and Social Sciences*

**Scope:** “This standard provides a **common framework** for distributed ledger technology (DLT) usage, implementation, and interaction in healthcare and the life and social sciences, addressing scalability, security and privacy challenges. DLT tokens, smart contracts, transactions, assets, networks, off-chain data storage and access architectural patterns, and both permissioned and permission-less DLT are included in the framework.”

**Purpose:** “The purpose of this standard is two-fold. First, it is to provide a **common semantic model** and framework for the usage of blockchain and DLT in healthcare and the life and social sciences, **under which a body of detailed, complementary standards specific to myriad niche use-cases can be subsequently developed**. Second, it is to clarify and rationalize the use of DLT in healthcare and the life and social science in concert with **converging innovations relevant to the sector, including, but not limited to, the family of Artificial Intelligence (AI) and the Internet of Medical Things (IoMT)**, delivering healthcare-specific coordination of these adjacent standards activities.”





# P2419.6 Standards Dev Working Group – IEEE SA

## Sub-Groups

Sub-Groups have distinct leadership (Chairs and Co-Chairs)

Sub-Groups, as their work progresses, may elect to submit their work as Sub-Standards (P2418.6.X)

## Current Sub-Groups

Identity

Clinical Trials

Internet of Medical Things (IoMT)

Provider Directory

Cybersecurity

Intellectual Property

Harmonization

Development Finance for Global Health

## Next Actions

Single presentation outlining the objectives, approach, deliverables, and timelines of each sub-group

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# Blockchain in Healthcare Global – IEEE ISTO

- Who is IEEE ISTO? Industry Standards and Technology Organization
- Who is Blockchain in Healthcare Global (“BiHG”)?  
<https://www.blockchaininhealthcare.global/>
- ***Mission:* to address the barriers to adoption of blockchain and converging innovations in healthcare and life sciences while advancing progress in scientific reproducibility, medical ethics, human rights, and global inclusion.**
- Corporate, Academic, Government, Non-Profit Affiliate, and Individual Membership Categories



Blockchain in  
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# Blockchain in Healthcare Global – IEEE ISTO



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Healthcare Global

*Activity  
Areas*

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## Industry Advocacy and Organization

Develop and Advocate  
for Policy, Regulation,  
and Legislation

Initiate and  
Organize Industry  
Self-Regulation

## Industry Education and Advancement

Deliver Healthcare  
Focused Professional  
Education

Propagate Emerging  
Standards and  
Administer Certifications

## Consortia-Specific Professional and Technical Services

Services are available only to  
organizational members;  
separate, fully-customized  
agreements with distinct  
scope and pricing are required.

Administer  
Multiple Categories of  
Sector-Wide Research

Administer  
*Consortia-Specific*  
Governance Operations

Manage  
*Consortia-Specific*  
Platforms and Products

Operate and Secure  
*Consortia-Specific*  
Infrastructure

# Blockchain in Healthcare Global – IEEE ISTO



Blockchain in  
Healthcare Global

## Activity Areas

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- BiHG is not a standards development organization.
- BiHG will support the
  - *propagation* of standards,
  - develop *certifications* and attestations of conformity to standards,
  - provide *education* on standards, and
  - develop and advocate for health policy that *incorporates* standards.



# Educational Resource

- HIMSS Task Force Collaboration: Nine Co-Authors
- Published March 23<sup>rd</sup> 2018
- Peer-Reviewed Open Journal Publication in the journal *Blockchain in Healthcare Today*  
<https://blockchainhealthcaretoday.com>
- Highest download rate to date among all articles in the journal
- New publications in production by Task Force



## Pragmatic, Interdisciplinary Perspectives on Blockchain and Distributed Ledger Technology: Paving the Future for Healthcare



PDF

XML

Published Mar 23, 2018

DOI

<https://doi.org/10.30953/bhty.v1.24>

**Ron Ribitzky**

R&D Ribitzky

**James St. Clair**

Institute for Healthcare Financial Technology

**David I Houlding**

Intel Corporation

**Chrissa T McFarlane**

Patientory

**Brian Ahier**

Aetna

**Michael Gould**

Independence Blue Cross

**Heather L Flannery**

Obesity Prevention, Policy and Management

**Erik Pupo**

Accenture Health Client Service Group

**Kevin A Clauson**

Lipscomb University College of Pharmacy & Health Sciences

<https://doi.org/10.30953/bhty.v1.24>

# Educational Resource

Published  
Feb 2019

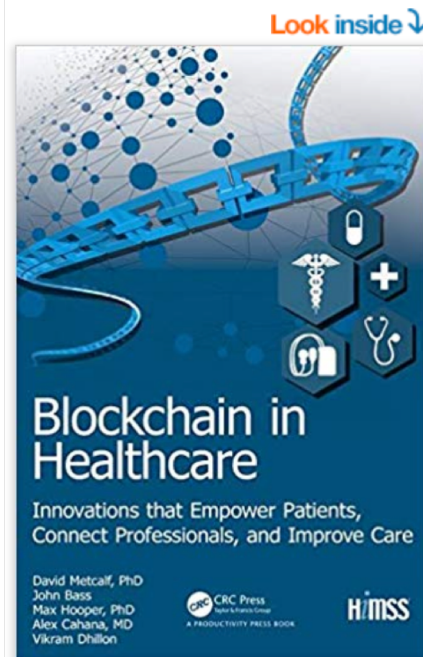
Chapter 16  
(Standards)  
contributed  
by Heather  
Flannery



## Blockchain in Healthcare: Innovations that Empower Patients, Connect Professionals and Improve Care (HIMSS Book Series) 1st Edition

by [Vikram Dhillon](#) (Author), [John Bass](#) (Author), [Max Hooper](#) (Author), [David Metcalf](#) (Author), [Alex Cahana](#) (Author)

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# Group Discussion: EMBS Engagement



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