Life Insurance & Financial Planning Committee
Thursday, December 12, 2019

InsurTech & Future Trends in Life Insurance Underwriting
NCOIL 2019 Annual Meeting

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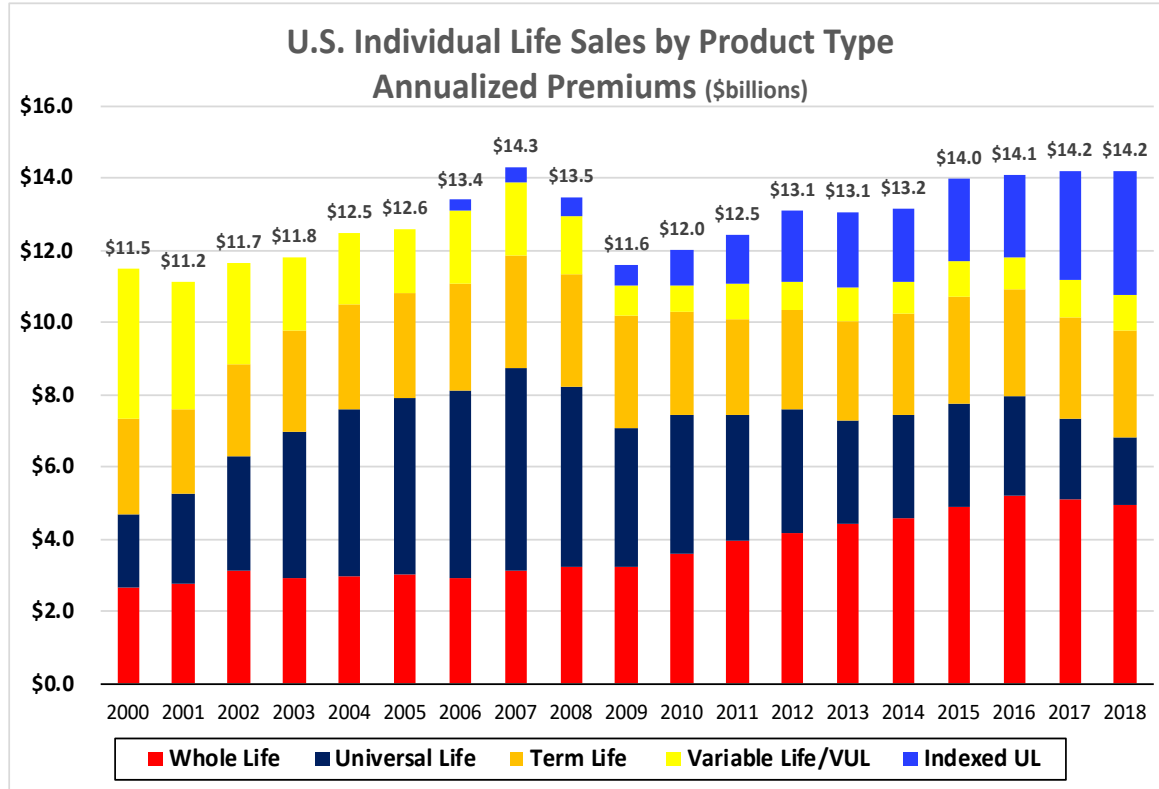colin.devine@cdevineassociates.com

Dec. 12, 2019

How Are Life Insurance Sales?

Growth remains a major challenge

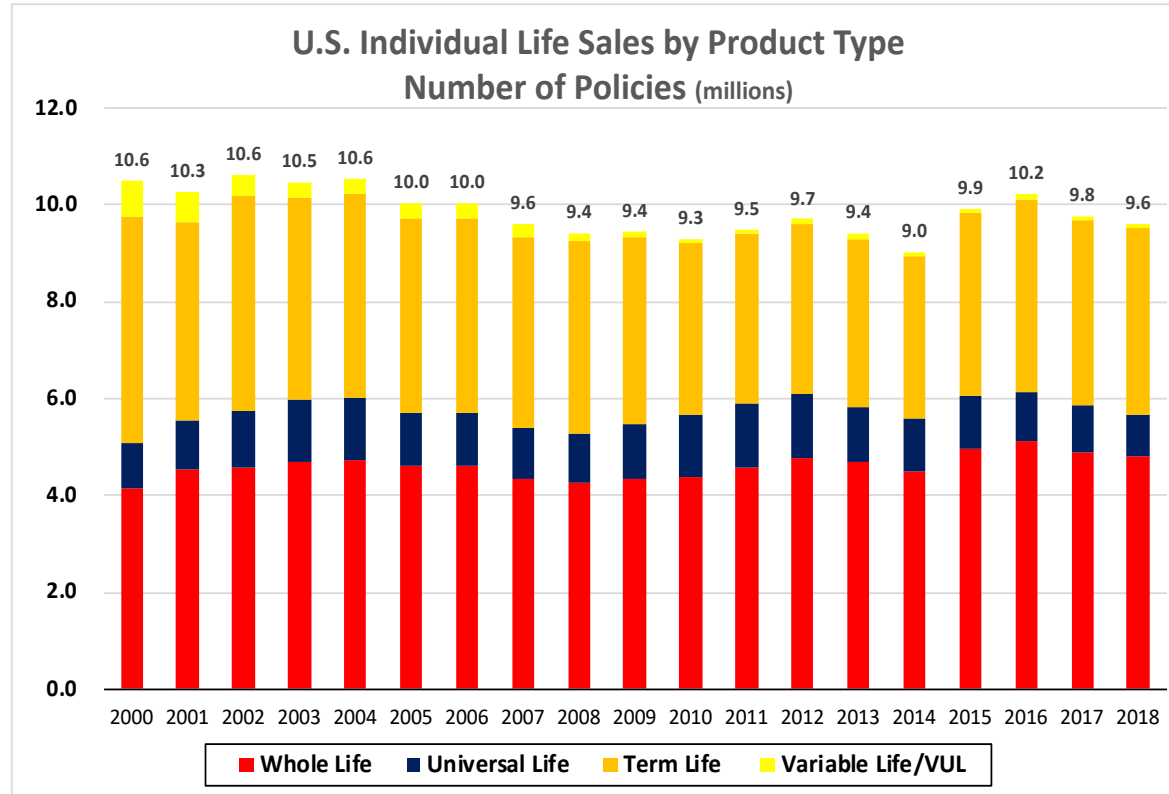On inflation adjusted basis sales have been flat for over a decade and policy counts slipping.

- *Demographics still favorable – Flexibility of life insurance for multiple uses should support steady sales growth.*

- *Legacy liabilities and low interest rates remain a factor –* Continued source of risk and may see increased visibility from new Long Duration accounting standard 2018-12.

- *Life sales flat in 2019 –* Annualized premiums for 9M19 unchanged Y-O-Y however policy count down 4%.

- *Recruiting increasingly industry concern –* With demise of career agency forces, where will new agents come from?

Life Insurance Sales - Premiums

U.S. Individual Life Sales by Product Type
Annualized Premiums ($billions)

Legend: ■ Whole Life ■ Universal Life ■ Term Life ■ Variable Life/VUL ■ Indexed UL

Year	Total
2000	$11.5
2001	$11.2
2002	$11.7
2003	$11.8
2004	$12.5
2005	$12.6
2006	$13.4
2007	$14.3
2008	$13.5
2009	$11.6
2010	$12.0
2011	$12.5
2012	$13.1
2013	$13.1
2014	$13.2
2015	$14.0
2016	$14.1
2017	$14.2
2018	$14.2

Source: Industry Reports and LIMRA.

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Life Insurance Sales - Policies

U.S. Individual Life Sales by Product Type
Number of Policies (millions)

Legend: ■ Whole Life ■ Universal Life ■ Term Life ■ Variable Life/VUL

Year	Total
2000	10.6
2001	10.3
2002	10.6
2003	10.5
2004	10.6
2005	10.0
2006	10.0
2007	9.6
2008	9.4
2009	9.4
2010	9.3
2011	9.5
2012	9.7
2013	9.4
2014	9.0
2015	9.9
2016	10.2
2017	9.8
2018	9.6

Source: Industry Reports and LIMRA.

Its All About Underwriting

How do life insurers make money?

Four Basic Pricing Assumptions

1. *Mortality* – Trends have generally been favorable for decades although beginning to change in some cohorts.

2. *Long-term Interest Rates* – Low rates in their 12th year and Federal Reserve now signaling long pause.

3. *Lapses* – Pricing makes on some product types growing source of strain.

4. *Operating Expenses* – Adverse experience on other assumptions causing insurers to consider all options to improve operating efficiencies.

InsurTech an Enabler and Disruptor

Technology can help revitalize life sales

Electronic Medical Records (EMRs) a keystone

- *Health and Life Insurance re-converging* – Medical data is fundamental requirement of the life underwriting process. It has been the slowest part of life insurers to evolve.

- *Should not take 3 months to issue a policy* – Only about 10 hours is spent underwriting. Remainder devoted to obtaining medical records and scheduling para-med exam.

- *Consumers want the Amazon purchase experience* – EMRs and Big Data analytics can help deliver that *thereby making life insurance easier to buy and easier to sell*.

Embracing Technology

InsurTech innovation well underway

- Electronic Medical Records – Traditionally the "choke point" in the underwriting process but "interoperability" initiatives underway may change that materially.

- DNA testing – Is broad based testing coming? What are its implications for underwriting, improving health?

- Big Data Analytics – Potential ability to leverage experience of data within the Social Security/Medicare data base could be a game changer for underwriting older age mortality.

- Privacy/Security – Use of data key source of concern with many large tech companies

Some Insurers
Rapidly Embracing

Creating win:win for individuals & insurers

Some examples of innovation:

- *John Hancock* – Launched Vitality rewards/premium reduction program in 2015 and just introduced Aspire for diabetics.

- *Principal Financial* – My Principal Lifestyle allows policyholders to earn rewards for health activities.

- *Transamerica/Aegon* – Wealth + Health initiative provides multiple on-line resources to encourage healthy lifestyle.

- *Aetna* – Just launched Attain, a health program for individuals, making sure they keep to their goals, reach new ones, and stay healthy along the way

Wearables an example

Cardiogram - Engagement Real Time

Effectively a "Check Engine" Light

HELP UNDIAGNOSED MEMBERS TO ↓ COST AND ↑ RISK ADJUSTMENT

PREVENTS ACUTE COMPLICATION AND INCREASE RAF

Undiagnosed rate

Diabetes: 36%
Hypertension: 20%
Atrial Fibrillation: 40%
Sleep Apnea: 80%

Prevented complications / diagnosis

Diabetes: $2,800
Hypertension: $2,300
Atrial Fibrillation: $3,600
Sleep Apnea: $2,400

Risk adjustment / diagnosis / year (MA)

Diabetes (HCC 021) : $1,200
Atrial fibrillation (HCC 142) : $3,000
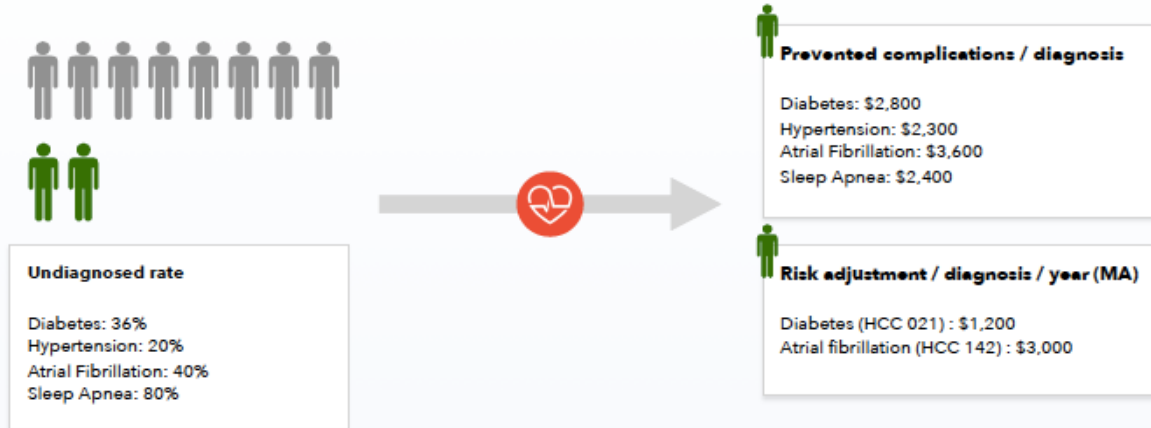
Cardiogram Intro - https://docsend.com/view/5a63k7b

One final example

Thank You

Colin W. Devine CFA, CMA, CFP®

Colin Devine provides strategic consulting services to the insurance and investment management sectors and is an Operating Partner with to Health Catalyst Capital, a venture capital fund that invests in high-growth transformative InsurTech-enabled services businesses. He is also a Research Fellow for the Alliance for Lifetime Income, a nonprofit 501(c)(6) organization focused on helping educate Americans on the risk of outliving their savings so they can enjoy their retirement.

Previously, Colin was a Managing Director with Citigroup responsible for equity research coverage of North American life insurance companies. He was on the Institutional Investor All-America Research Team for 14 straight years where he held the #1 ranking in the Life Insurance Equity Research category for six consecutive years. Colin was also named one of the "Last Honest Analysts" by Smart Money Magazine.

Patient Authorized Data Solutions for Life Insurance Underwriting
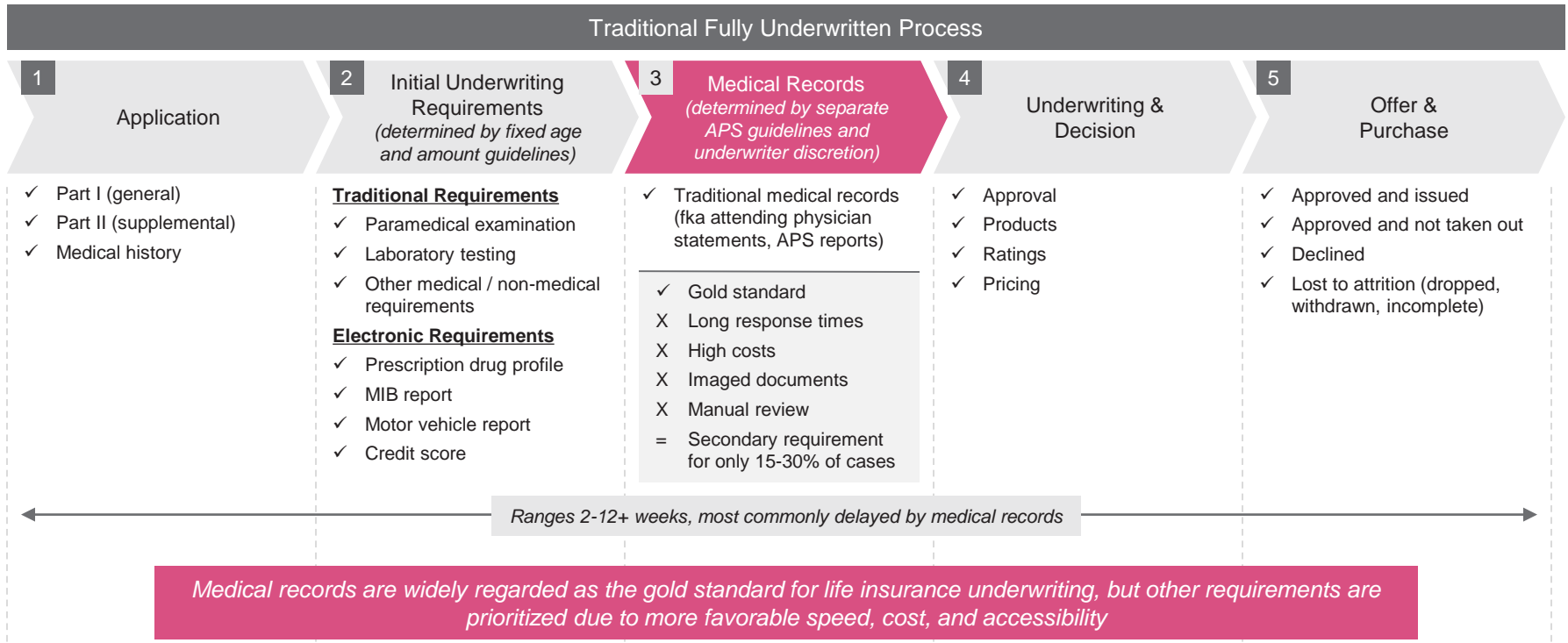
Underwriting Protocols

Life insurance carriers may use one or a combination of underwriting models, all of which have significant flaws – extending cycle times, increasing costs, and compromising protective value

Underwriting Models	Simplified Issue	Fully Underwritten	Accelerated Underwriting
Description	Shorter application, instantly available data combined with rule sets	Extensive application questions, paramed exams on most cases, and additional requirements based on age/amount or underwriter discretion	Fully underwritten setup, but a subset of cases selected by rules or predictive model waive labs and APS
Pros	✓ Speed ✓ Low Cost ✓ Simplicity Opens up Distribution Opportunities	✓ Significant Mortality History ✓ Mortality Pricing works at a Macro level ✓ Ability to stratify between classes and multiple sets of Preferred Rates ✓ Regulatory Issues settled	✓ "Winners" enjoy much faster and user friendly customer experience ✓ Underwriting expenses decreased – both requirement dollars and people time to analyze ✓ More popular with Distribution
Issues	✓ Higher Overall Mortality ✓ Uncompetitive Retail Premiums ✓ Face Amount Limits ✓ High, potentially anti-selective lapsation ✓ Inability to stratify preferred risks ✓ Subject to targeted anti-selection	✓ Cycle Time ✓ Expense – requirements plus resources to analyze ✓ Clients drop out during the lengthy process ✓ Individual Physicians requiring custom authorization ✓ Potential Distribution has disengaged	✓ Ultimate mortality experience an unknown ✓ Inability to stratify between existing preferred classes ✓ Potential for anti-selection increased ✓ Have models accounted for change in agent behavior?

The performance of all models can be improved with better access to higher quality electronic health data – and sufficient data enables development of new customized models
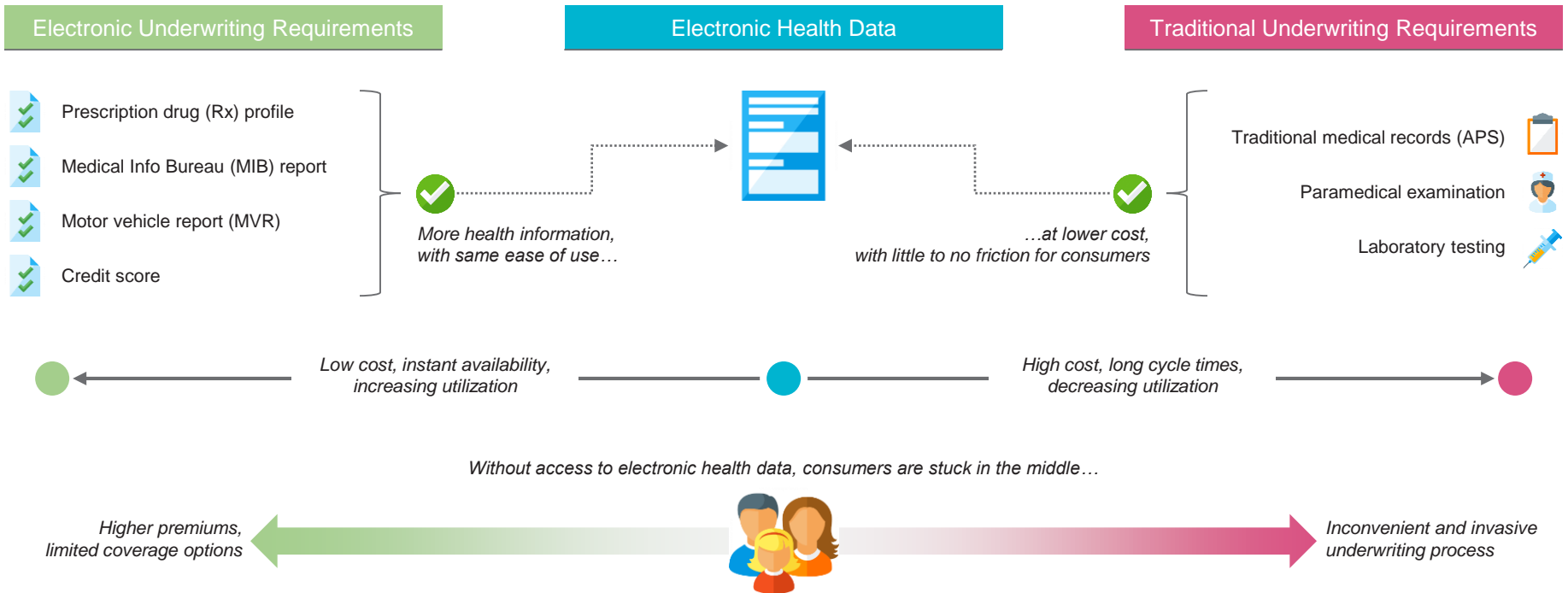
The Problem: Outdated Underwriting Process

Traditional underwriting models are burdened by high costs, long cycle times, consumer inconvenience, and incompatibility with new distribution models.

Traditional Fully Underwritten Process

1 — Application
- ✓ Part I (general)
- ✓ Part II (supplemental)
- ✓ Medical history

2 — Initial Underwriting Requirements *(determined by fixed age and amount guidelines)*

Traditional Requirements
- ✓ Paramedical examination
- ✓ Laboratory testing
- ✓ Other medical / non-medical requirements

Electronic Requirements
- ✓ Prescription drug profile
- ✓ MIB report
- ✓ Motor vehicle report
- ✓ Credit score

3 — Medical Records *(determined by separate APS guidelines and underwriter discretion)*
- ✓ Traditional medical records (fka attending physician statements, APS reports)

- ✓ Gold standard
- X Long response times
- X High costs
- X Imaged documents
- X Manual review
- = Secondary requirement for only 15-30% of cases

4 — Underwriting & Decision
- ✓ Approval
- ✓ Products
- ✓ Ratings
- ✓ Pricing

5 — Offer & Purchase
- ✓ Approved and issued
- ✓ Approved and not taken out
- ✓ Declined
- ✓ Lost to attrition (dropped, withdrawn, incomplete)

Ranges 2-12+ weeks, most commonly delayed by medical records

Medical records are widely regarded as the gold standard for life insurance underwriting, but other requirements are prioritized due to more favorable speed, cost, and accessibility
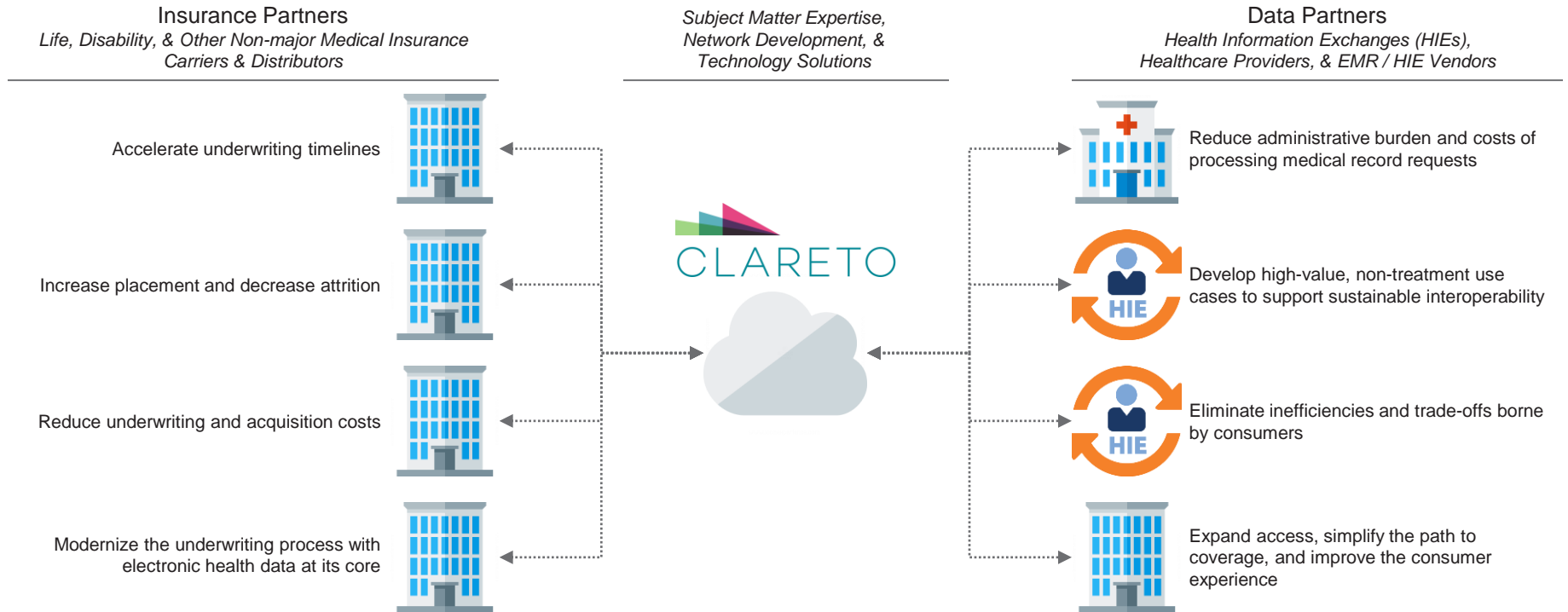
The Solution: Electronic Health Data

Electronic health data can bridge the gap on the underwriting continuum by serving as a multi-purpose screening tool between traditional and electronic requirements.

Electronic Underwriting Requirements	Electronic Health Data	Traditional Underwriting Requirements

Prescription drug (Rx) profile

Medical Info Bureau (MIB) report

Motor vehicle report (MVR)

Credit score

Traditional medical records (APS)

Paramedical examination

Laboratory testing

More health information, with same ease of use…

…at lower cost, with little to no friction for consumers

Low cost, instant availability, increasing utilization

High cost, long cycle times, decreasing utilization

Without access to electronic health data, consumers are stuck in the middle…

Higher premiums, limited coverage options

Inconvenient and invasive underwriting process

Clareto Overview

Clareto enables the exchange of electronic health data, pursuant to HIPAA-compliant authorizations, to support life insurance underwriting and related use cases.

Insurance Partners
Life, Disability, & Other Non-major Medical Insurance Carriers & Distributors

Subject Matter Expertise, Network Development, & Technology Solutions

Data Partners
Health Information Exchanges (HIEs), Healthcare Providers, & EMR / HIE Vendors

Accelerate underwriting timelines

Increase placement and decrease attrition

Reduce underwriting and acquisition costs

Modernize the underwriting process with electronic health data at its core

Reduce administrative burden and costs of processing medical record requests

Develop high-value, non-treatment use cases to support sustainable interoperability

Eliminate inefficiencies and trade-offs borne by consumers

Expand access, simplify the path to coverage, and improve the consumer experience

Introduction to Health Information Exchanges

- In existence since the 1990s
- Most operate on a state-wide or regional basis
- May be government entities, public non-profit organizations, or privately-operated by one or more healthcare providers
- Supported by legislation and nearly a billion dollars in federal, state, and local public funding for development and ongoing operations of HIEs
- Common HIE services include master patient index, query-based document exchange, encounter alerts, results routing, image sharing, prescription drug monitoring, and public health reporting
- Provide the technical infrastructure and collaborative governance necessary for hospitals, health systems, physician practices, and other health care organizations to share patient information electronically
    - Key considerations include permitted purposes for exchanging data – primarily focused on Treatment, but may also include Payment, Operations, and Public Health
    - Accessing data for life insurance underwriting requires approval of Coverage as a permitted purpose
    - National interoperability programs, including the Sequoia Project's eHealth Exchange and Carequality initiatives, permit "Uses and disclosures pursuant to an Authorization provided by the individual who is the subject of the Message or such individual's personal representative as described in 45 C.F.R. § 164.502(g) of the HIPAA Regulations" but do not require participants to exchange data for this purpose

SSA Health IT Program for Expediting Disability Determinations

The U.S. Social Security Administration ("SSA") is one of the largest disability insurers in the world, and provides a valuable proof-of-concept for utilization of electronic health data

- Requests more than 15 million medical records from 500,000 providers – at estimated costs of $500 million – to make decisions on 3 million disability claims annually

- The process of requesting and gathering medical records is the most frequent source of delay in SSA's disability determination process
  - May take weeks or months to receive records
  - Most records are received in form of faxed or scanned images

- In 2008, SSA began working with other federal and private organizations to enable the electronic exchange of health information to improve the speed and consistency of the disability determination process
  - Reduces time to request and receive records to minutes or hours
  - Enables electronic analysis of data in records

A Brief History

Clareto's experience operating MedVirginia HIE positions us to work successfully with HIEs, the national networks, and other healthcare organizations to advance interoperability.

- eHealth Exchange, the nation's largest query-based health information network, recently celebrated its 10th anniversary, marking a milestone in standards-based exchange of electronic health data.

- *"Did you know on February 28, 2009, the first data exchange on the network occurred between the Social Security Administration [SSA's Health IT Program for expediting disability determinations] and MedVirginia? Later that same year, the Veterans Health Administration and MedVirginia began sharing data, followed by a connection between the Department of Defense and Kaiser Permanente."*

Clareto is now facilitating authorized electronic release of health information with eHealth Exchange participants, including HIEs, specifically for life insurance underwriting.

Single Point Access

Single Point of Access to Electronic Health Data Sources
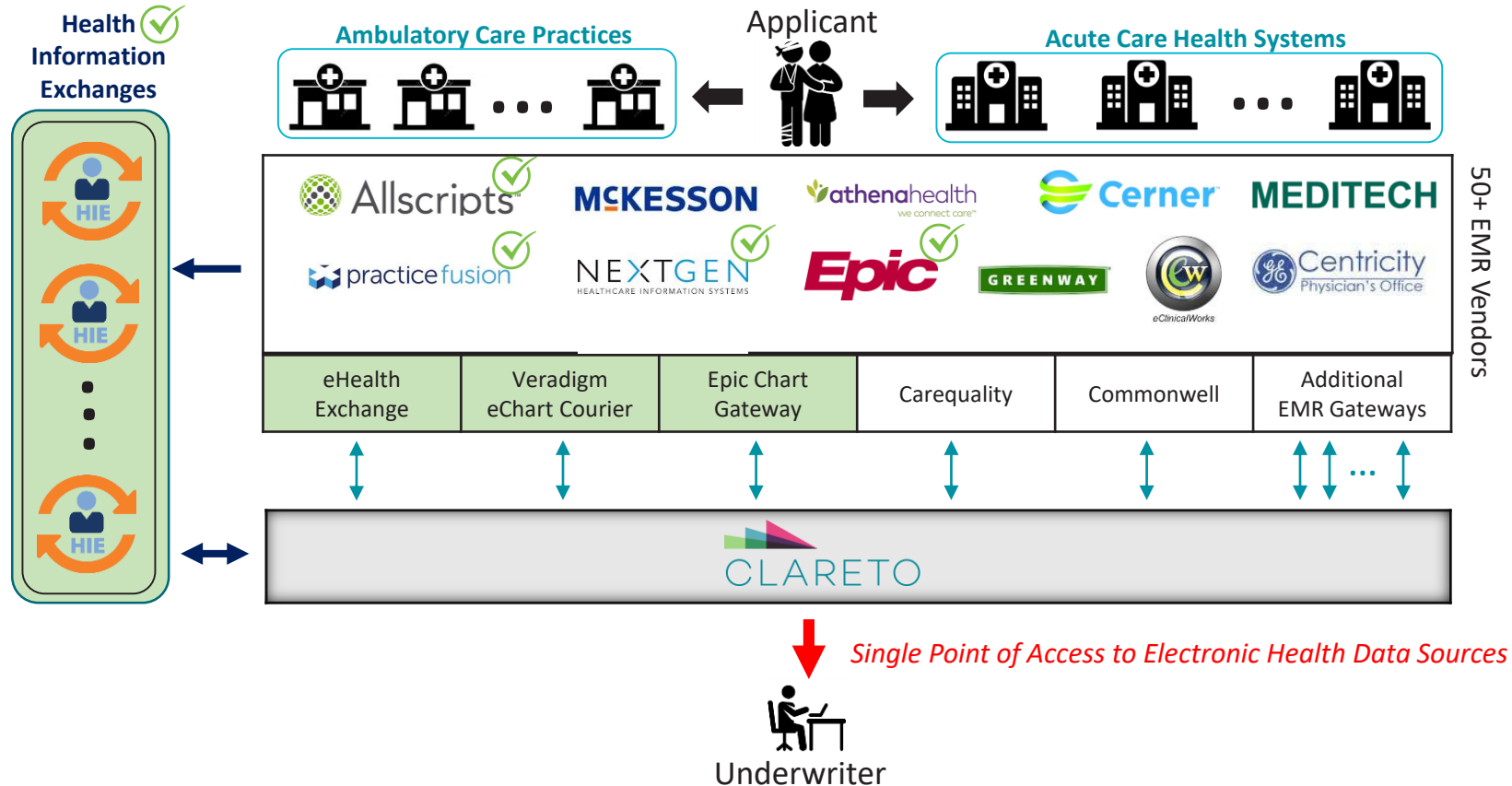
Alternative (or Additive) Data Sources

While Underwriters and Medical Directors regard Physician Reports as the "Gold Standard" in Underwriting, access to electronic health data has been limited to date

Data Sources	EMR Vendors		Healthcare Providers		Patient Portals		HIEs	
Geography / Market Coverage	X	Few large players operate nationally with meaningful market share, but limited concentration thereafter	X	Most operate regionally or locally with significant market fragmentation (but consolidation is increasing)	X	Technology tied to EMR vendors, while access may be governed by healthcare providers	✓	Operate on state-wide or regional basis (have achieved match rates of ~70% in pilot studies)
Authorization Requirements	X	Dependent on clients	X	May not accept insurer's authorization form; require PI to sign another form	X	Rely on PI to locate portal(s), activate account, provide username/password	✓	Use insurer's authorization form obtained as part of normal application process
Anti-selection Potential	X	Rely on PI to self-report where care was received	X	Rely on PI to self-report where care was received	X	Rely on PI to self-report where care was received; some portals also permit PI to filter data	✓	Search for PI within HIE; no need to specify physician or site of care; may find data from multiple providers
Strategic Alignment / Executive Attention	X	Not part of core offering; low priority within interoperability strategy	X	Afterthought to providing patient care; overseen by HIM/ROI, IT, legal, HIPAA privacy/security	X	Repurposing of vendor-specific, patient-centric solution for unintended use	✓	Aligns with data exchange focus; critical diversification opportunity; given attention by CEO and BOD
Governance / Approvals Process	X	Dependent on clients	X	Varies by provider organization	X	Varies by EMR vendor and provider organization	✓	BOD approves, pushes policy change to all participating providers
Financial Considerations	X	<5% of annual revenue; must share with clients	X	<1% of annual revenue	X	Cannibalizes existing HIM/ROI revenue	✓	May cover ~10% to 25+% of annual operating budget

Clareto pursues all sources, but prioritizes HIEs as strategic points of aggregation

Methods to source electronic health data have unique pro's and con's.

Health Information Exchange

Favorable Governance Structure
Regional Data Build
"CliffsNotes" Medical History
Breadth of data
Predictability of Obtaining Data
Authorization and Time Service

EMR Vendors

Data Quality Closest to APS
Large EMR Vendors Participating
Governance slowing roll-out
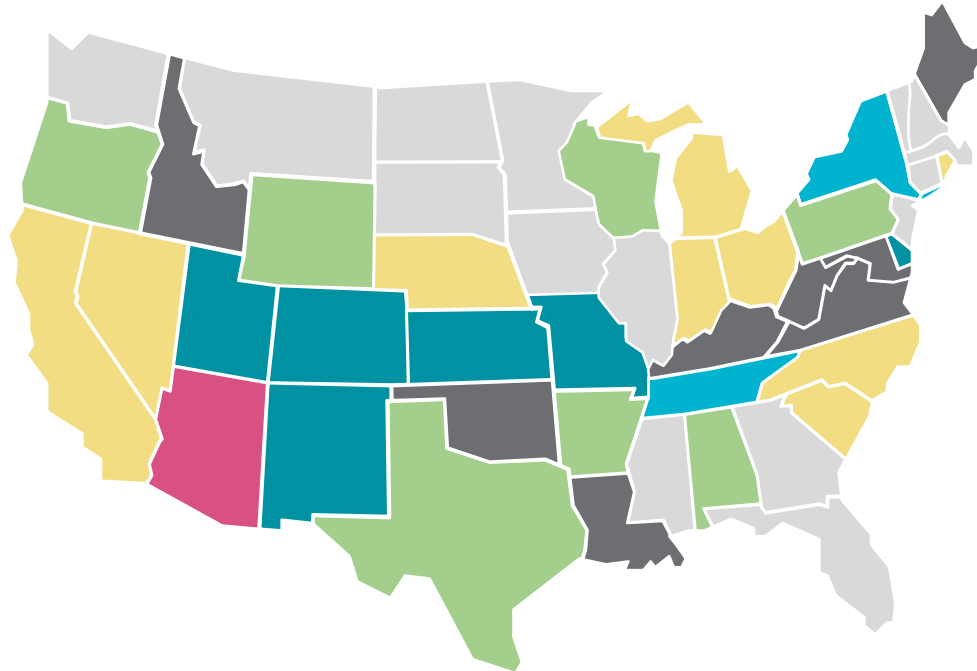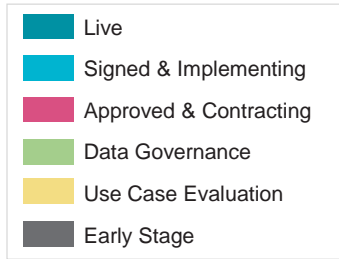Multiple Docs = Multiple Fees

Patient Portals

Unlimited Coverage Potential
Administrative Issues
Anti-Selection must be solved
Poor client experience; friction

HIE Data Pipeline

Clareto has made significant strides in building a national data network, comprising state and regional HIEs as well as national EMR vendors.

Legend:
- Live
- Signed & Implementing
- Approved & Contracting
- Data Governance
- Use Case Evaluation
- Early Stage

Clareto HIE Data Partner's Live and Exchanging

Geography	Status	Addressable Population	Market Coverage	Estimated Lives
Colorado	Live	5.1 Million	88%	4.9 Million
Missouri	Live	5.1 Million	66%	4.1 Million
NYC/Long Island	Live	20.1 Million	84%	17.1 Million
Utah	Live	3.1 Million	95%	2.9 Million
Delaware	Live	975K	99%	965K
New Mexico	Live	2.1 Million	67%	1.4 Million

Clareto HIE Data Partner Pipeline

Geography	Status	Addressable Population	Market Coverage	Estimated Lives
Eastern TN	Implementing	6.7 Million	12%	785K
Philadelphia	Pending Approval	7.1 Million	57%	4.1 Million
Indiana	Pending Approval	5.6 Million	74%	4.9 Million
Ohio	Pending Approval	11.6 Million	80%	9.3 Million
Wisconsin	Pending Approval	5.8 Million	65%	3.8 Million

Clareto HIE Data Partner Pipeline

Geography	Status	Addressable Population	Market Coverage	Estimated Lives
California	Evaluating	39M	33%	13.2 Million
Pennsylvania	Evaluating	12.8 Million	31%%	3.9 Million
Michigan	Evaluating	9.9 Million	83%	8.2 Million
New York	Evaluating	19.6 Million	54%	10.7 Million
Arkansas	Evaluating	3 Million	80%	1.9 Million
Alabama	Evaluating	4.8 Million	34%	1.7 Million
Arizona	Evaluating	7.9 Million	89%	6.2 Million

Life insurers report that Clareto HIE data is useful across multiple underwriting scenarios:

Traditional APS Replacement

Elimination of a traditional APS possible in a majority of cases studied.
Cost Benefit attractive given the significantly lower cost and near real-time availability of HIE data.

Anti-Selection Detection

Numerous carriers have discovered that HIE data enables discovery of undisclosed physicians and medical conditions on a material number of applicants.

Accelerated Underwriting Input

The depth and breadth of HIE data makes it an attractive input for determining qualification for accelerated underwriting programs.

We appreciate your consideration.

For more information, please contact:

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