

Changing Healthcare Landscape:

Role of the Actuary

Dan Rachfalski, FSA, MAAA

*Senior Vice President, Chief Actuary
Aetna, CVS Health*

May 21, 2024



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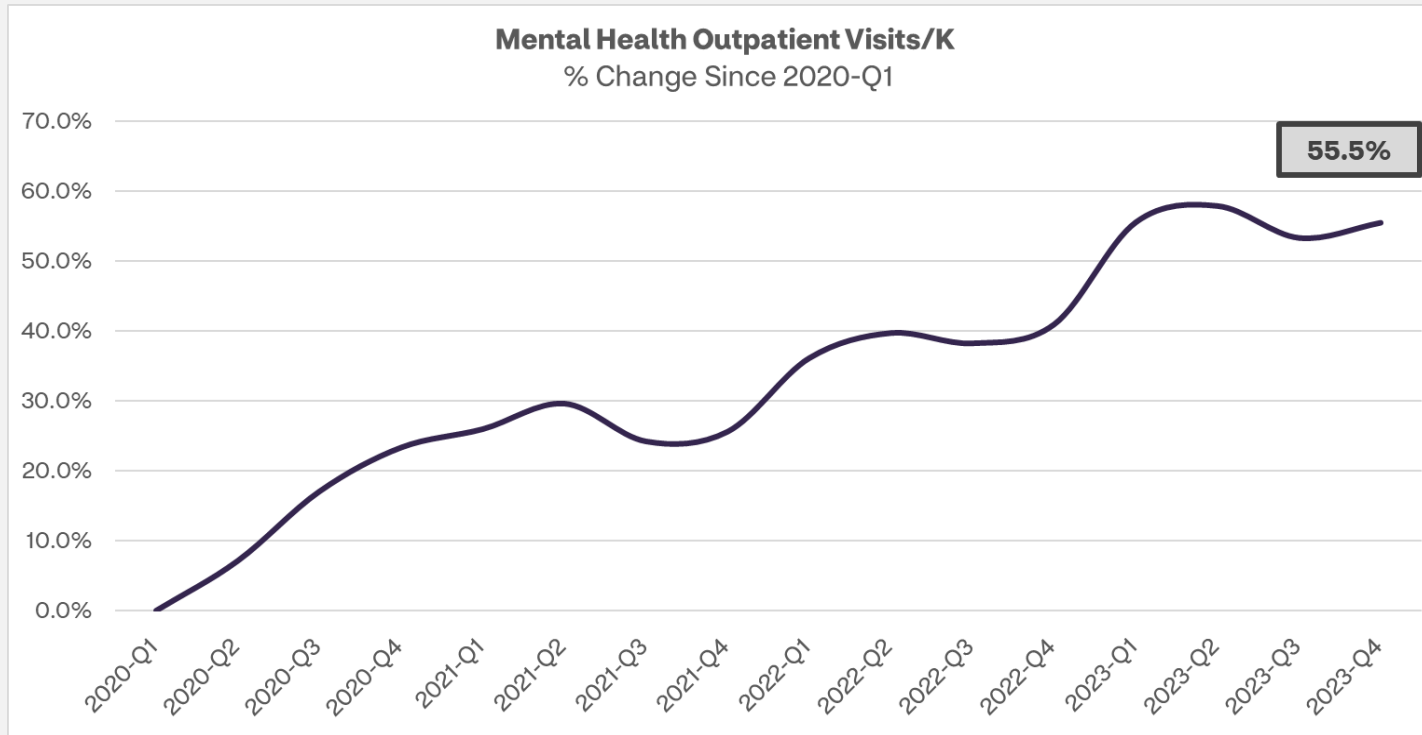
A myriad of factors are impacting the healthcare landscape, we are going to focus on the following....



Consumer Behavior & Site of Care

Mental Health Outpatient Utilization

Commercial

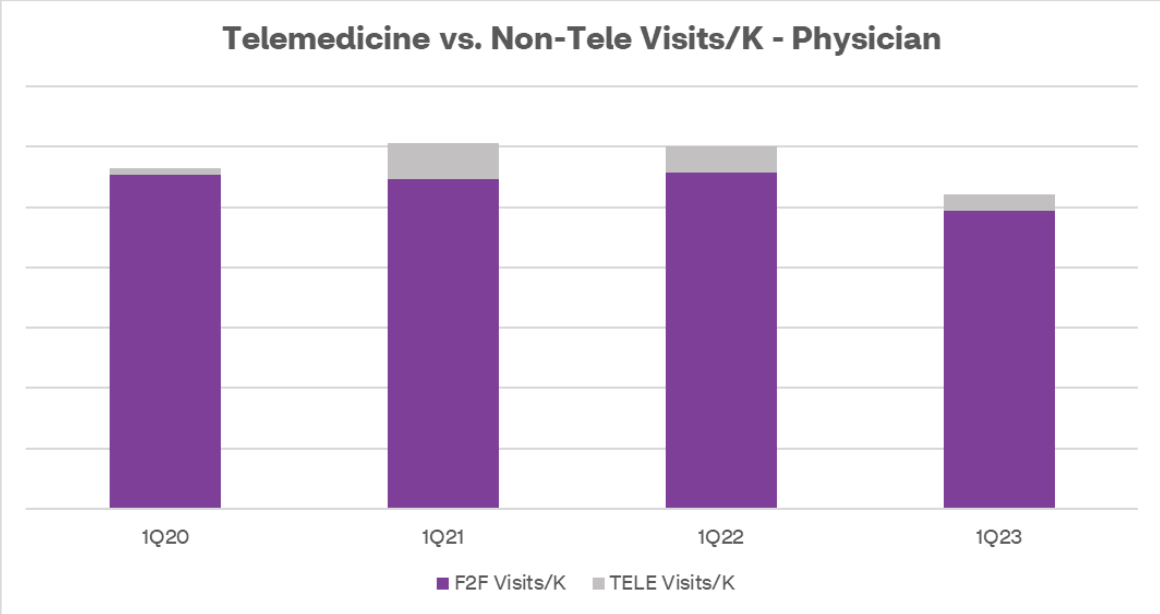
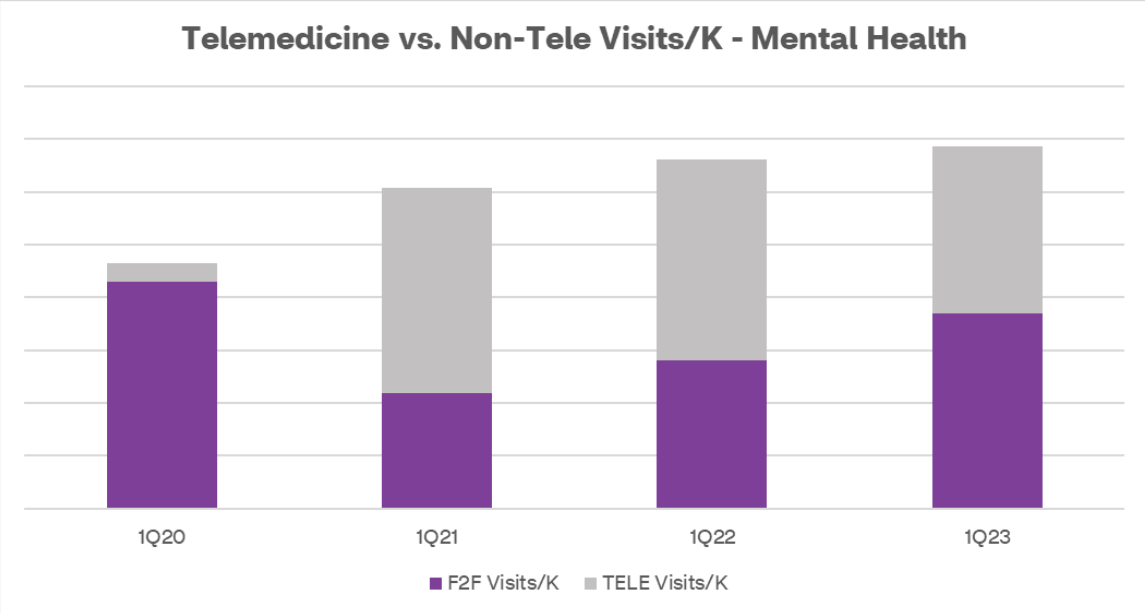


Diagnosis Group	% Change 1Q20-4Q23
anxiety/personality/eating/other depression	87.9%
adjustment reaction	40.1%
childhood/adolescent disorders	61.6%
alcohol/substance use disorders	51.9%
bipolar disorders	-4.2%
Grand Total	55.5%

Age Group	% Change 1Q20-4Q23
0-12	41.6%
13-17	22.3%
18-26	58.8%
27-44	75.4%
45-54	42.4%
55+	26.0%
Grand Total	55.5%

- **Mental Health Outpatient utilization has increased rapidly since the start of the pandemic**
 - Utilization trends were highest in 2021, stabilized in 2022, and have increased again in 2023
- **Trends are highest for Anxiety, Adjustment Reaction, and Childhood Adolescent Disorders**
 - Alcohol/Substance Use utilization remains low in outpatient setting
- **All age groups have seen increases in Mental Health Outpatient utilization**
 - 27-44 Age Group has had the largest increases in OP Visits/K since 1Q20

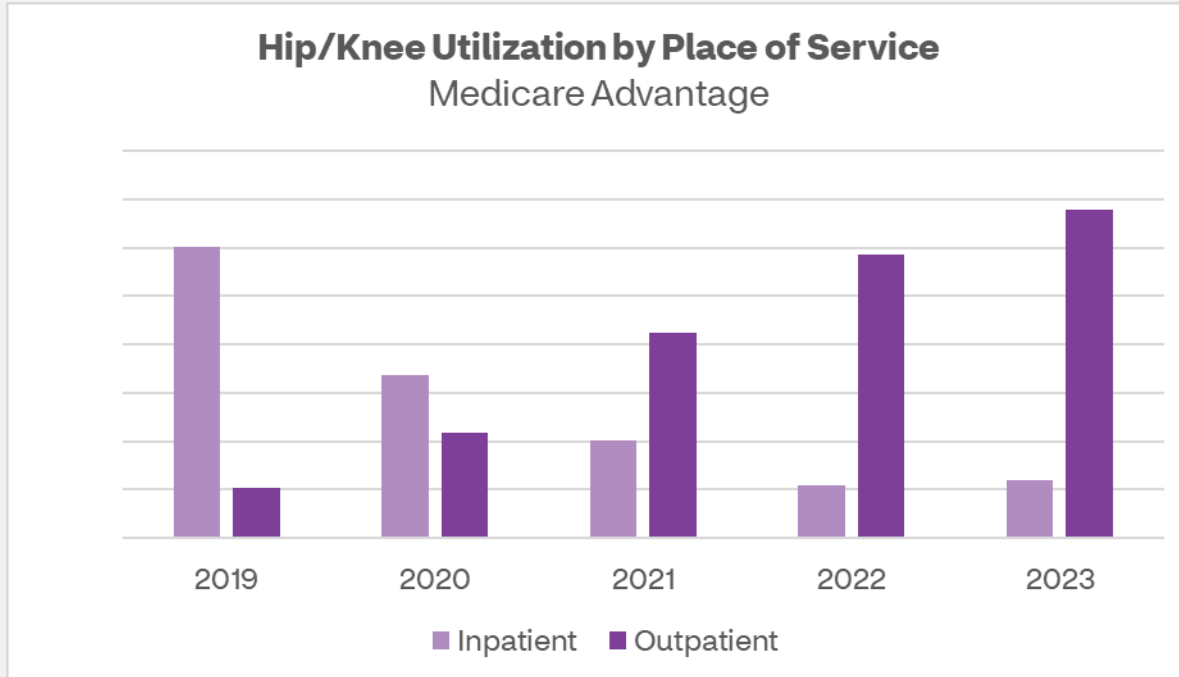
Telehealth Utilization Over Time – Mental Health and Physician Commercial



- **Telehealth visits for Physician have remained relatively consistent** at 5% to 7% since May 2021 (compared to ~20% in Mar-May 2020)
- **Mental Health utilization, in total, remains elevated** relative to pre-pandemic level, fueled by telehealth adoption (~60% of all MH visits remain in a virtual setting)

	Jan 20-Feb 20	Mar 20 - May 20	Jun 20 - June 21	Jul 21 - Present
Mental Health	1%	50%	60%	55%
PCP + Specialist	0%	20%	10%	6%

Site of Care for Hip/Knee Surgeries Medicare



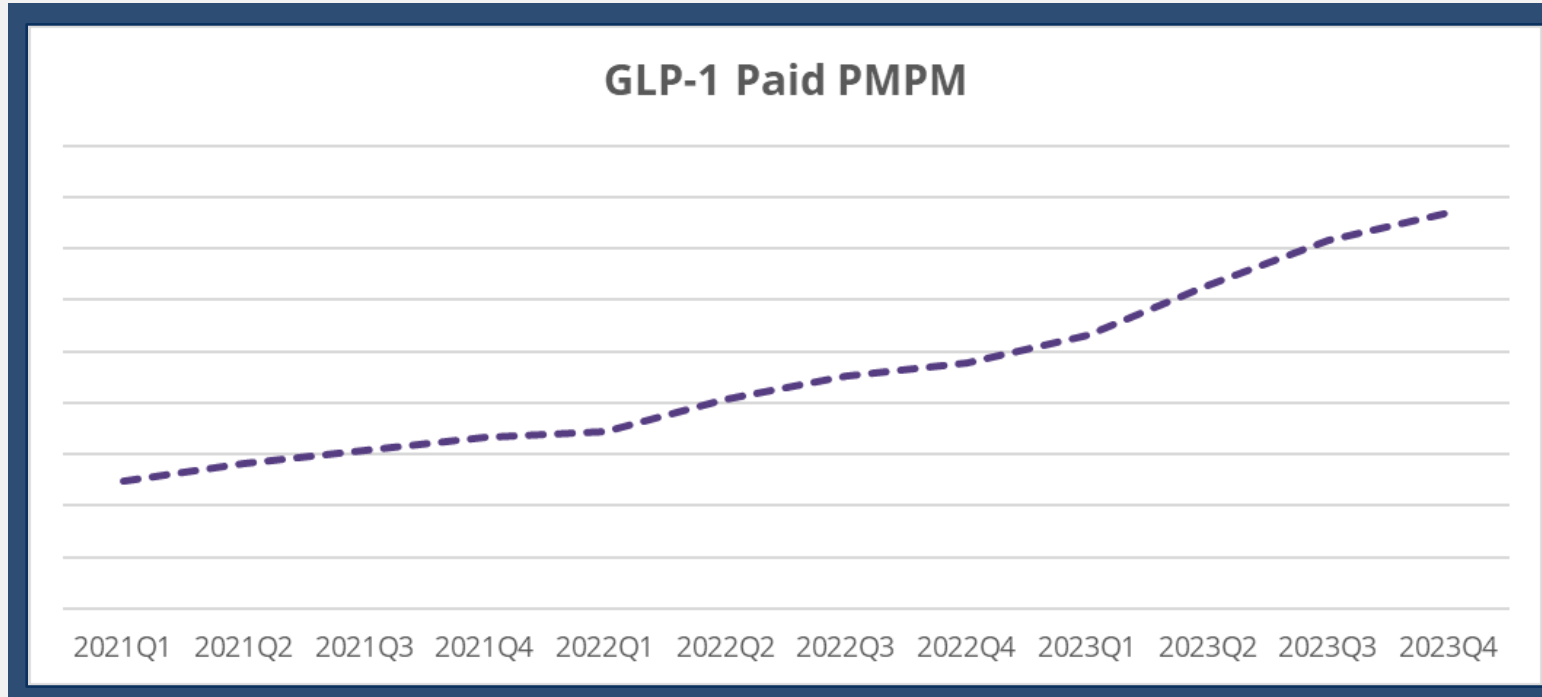
- In 2019, only ~15% of hip/knee surgeries took place in an Outpatient setting.
- In 2022 and 2023, this has increased to over 80%
- Shift accelerated by CMS removing procedures from Inpatient-only list

Year	Utilization/K	Distribution	
		Inpatient %	Outpatient %
2019	14.1	85.2%	14.8%
2020	11.1	60.9%	39.1%
2021	12.5	32.3%	67.7%
2022	13.9	15.6%	84.4%
2023	16.0	15.0%	85.0%

Pharmacy GLP-1s & High-Cost Therapies

Weight Loss Drugs & GLP-1s

Commercial



- **GLP-1 spend (e.g. Ozempic) has been increasing dramatically over the last 3 years as GLP-1 class gains more popularity**
 - Controls are in place where permissible to require a diabetes diagnosis for GLP-1 class of drugs, preventing off-label use

High-Cost Therapies Pipeline

Recently Approved:

Therapy	Approval Date	Estimated Cost for Course of Treatment	Indications
Hemgenix*	Approved 11/22/22	\$3.5M	Moderate to severe hemophilia B
Leqembi (Lecanemab**)	Approved 1/6/23	\$28K	Early Alzheimer's
Qalsody (Tofersen)	Approved 4/28/23	\$250K	ALS in adults
Vyjuvek	Approved 5/19/23	\$100K	Dystrophic Epidermolysis Bullosa
Elevidys (Delandistrogene Moxeparvovec)	Approved 6/22/23	\$3.2M	Duchene's Muscular Dystrophy
Roctavian (Valoctocogene roxaparvovec)	Approved 6/29/23	\$2.5M	Severe hemophilia A
Lyfgenia (Lovo-cel)	Approved 12/8/23	\$3.2M	Severe Sickle Cell
Casgevy (Exa-cel)	Approved 12/8/23	\$2.1M	Severe Sickle Cell
Amtagvi (Lifileucel)	Approved 2/19/24	\$0.5M	melanoma
Lenmeldy (Atidarsagene autotemcel)	Approved 3/18/24	\$4.25M	Metachromatic Leukodystrophy

Pending Approval:

Therapy	Estimated Cost for Course of Treatment	Indication
Donenemab	\$26.5K	Early Alzheimer's
Upstaza	\$3.7M	decarboxylase deficiency
UX111	\$3M	Mucopolysaccharidosis type IIIA
Engensis	TBD	Peripheral neuropathy
RP-L201	\$3M	Deficiency
Renexus	TBD	Macular telangiectasia type 2
RP-L102	\$3M	Fanconi Anemia

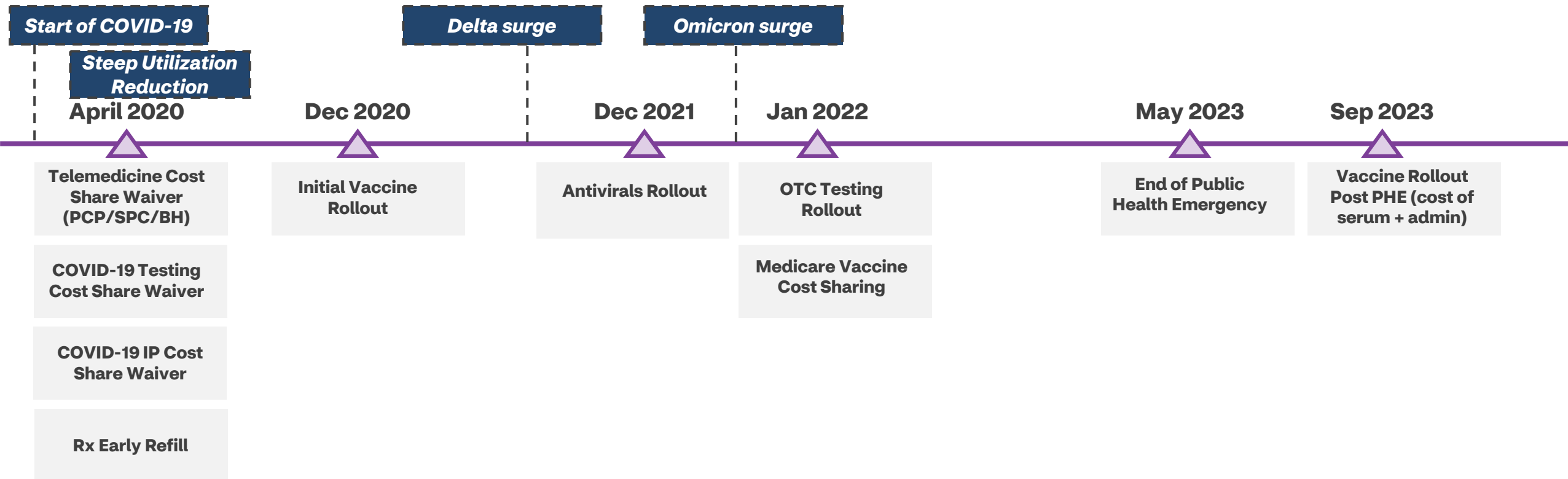
COVID-19

COVID-19 presented many challenges

Benefit Liberalizations, Vaccines, Treatment, Testing

COVID-19 presented many challenges for actuaries responsible for accurate projections and pricing, including the need to:

- understand the impact of cost share waivers early on,
- estimate the cost impact of the deferral of care, new vaccines, antivirals, testing, etc.,
- anticipate new variants and future surges in COVID cases

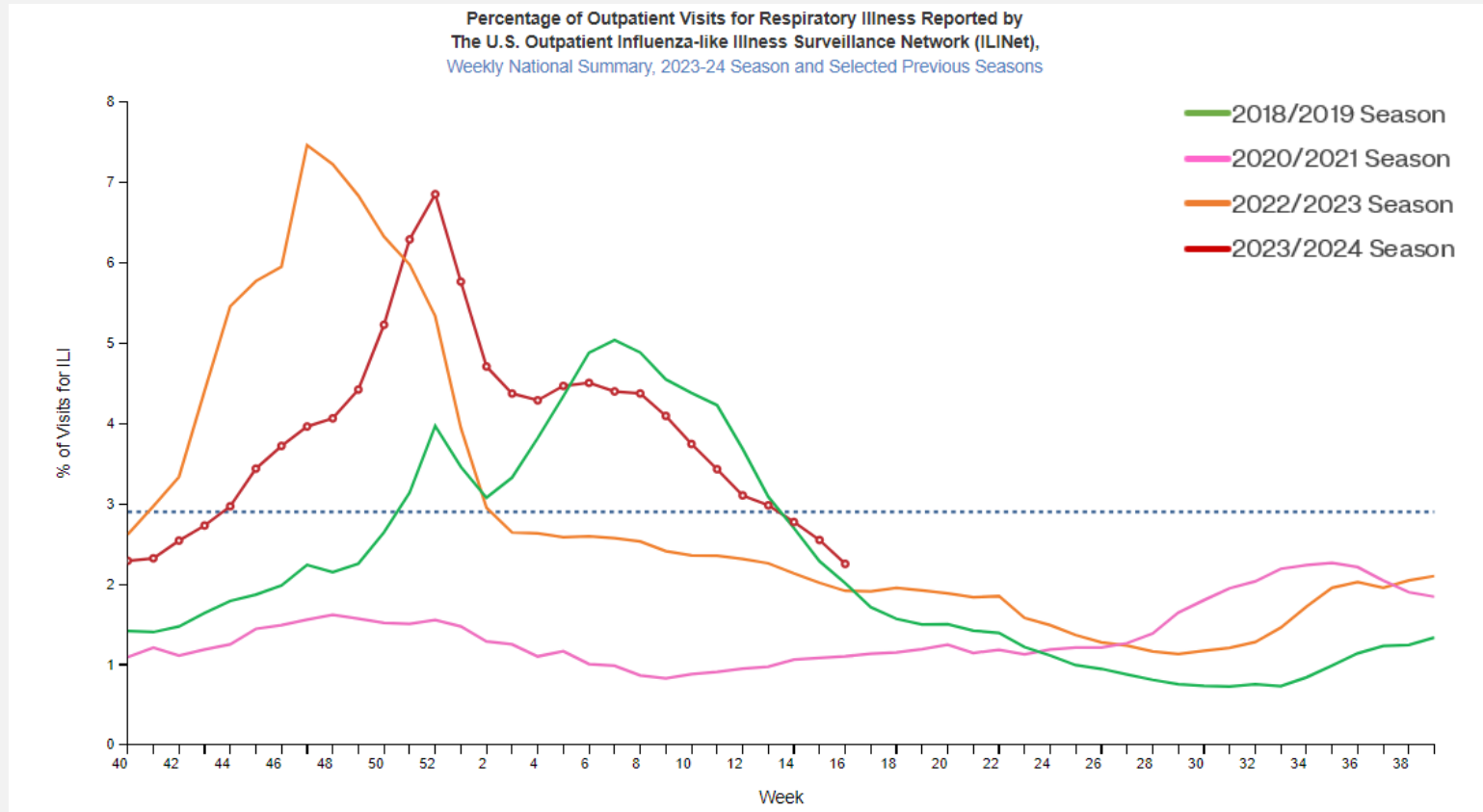


How has COVID-19 shaped our work as actuaries?

Required more frequent monitoring of data and trends	Influenced how we approached analytics	Required collaboration with our clinical partners more than ever before	Challenged our ability to target members for care interventions due to deferred care	Disrupted our ability to fully rely on historical data in post-pandemic era
<ul style="list-style-type: none">• Tracking of COVID cases and emerging new variants• Monitoring the spend and utilization of testing and vaccines• Keeping up with new treatments, testing, and vaccines/boosters	<ul style="list-style-type: none">• Created the need to perform analytics in real time vs. waiting for data to mature• Created challenges getting data given multiple sites of vaccine distribution	<ul style="list-style-type: none">• Led to strengthened partnerships with clinical teams going forward	<ul style="list-style-type: none">• Created limitations in targeting members for utilization management and care management initiatives (e.g., avoidable ER)	<ul style="list-style-type: none">• 2020-2022 data is heavily impacted by COVID; includes the impact of deferred care, spend associated with COVID testing, vaccines, inpatient stays, etc.• Created challenges in understanding and projecting claim seasonality (e.g., impact of future Flu seasons)• Caused the need to leverage non-traditional sources of data (e.g., Australian Flu Data)

Flu Seasonality Considerations

Fluctuations observed in flu-related outpatient visits during recent years

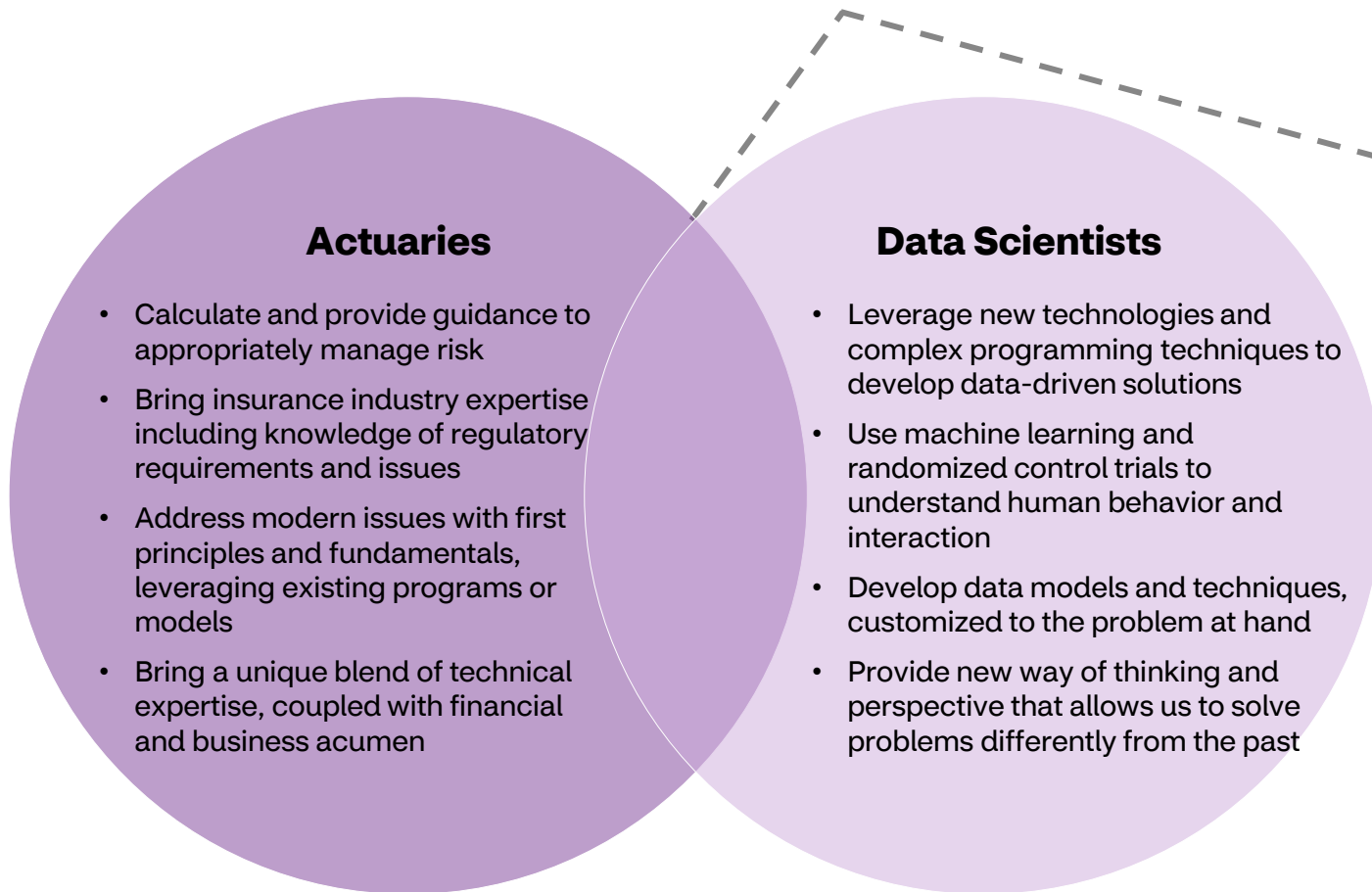


- Historically, the flu has peaked in January/February
- During the pandemic, flu was essentially non-existent (20/21 and 21/22 seasons)
- Last season, flu peaked much earlier in November/December
- This season, flu peaked later than last season, but still earlier than pre-pandemic seasons

Source: <https://www.cdc.gov/flu/weekly/index.htm>

Data Science Influence: Predictive Analytics & Artificial Intelligence

Actuarial and Data Science Collaboration



Collaboration between Actuaries and Data Scientists will improve our ability to effectively navigate the healthcare system

The complementary skill set of data scientists and actuaries enhances our ability to solve complex business problems...

Collaboration in Action:

1 Site of Care Program

Problem: Initial program focused on targeting providers, not successful due network and member abrasion

Solution: Actuarial collaborated with data science to transform it to a member campaign, using randomized control trials to identify eligible population, and conduct outreach to educate members on low acuity services

2 Vitamin D Testing

Problem: Testing exceeding clinically appropriate benchmarks. Initially addressed by claim editing, which significantly increased appeals and eroded savings

Solution: Data scientists helped transform into a provider campaign by identifying providers for outreach that were billing at a higher rate than peers

3 Provider Contracting

Problem: Identify contracting opportunities for Network Team

Solution: Data scientists created easily consumable data format; Med Econ refined unit cost relativity tool to meet Network's needs and align with negotiation process; Opportunity parameters established based on prior negotiations and market dynamics

Looking Forward : The Role of the Actuary

Analytical Capabilities

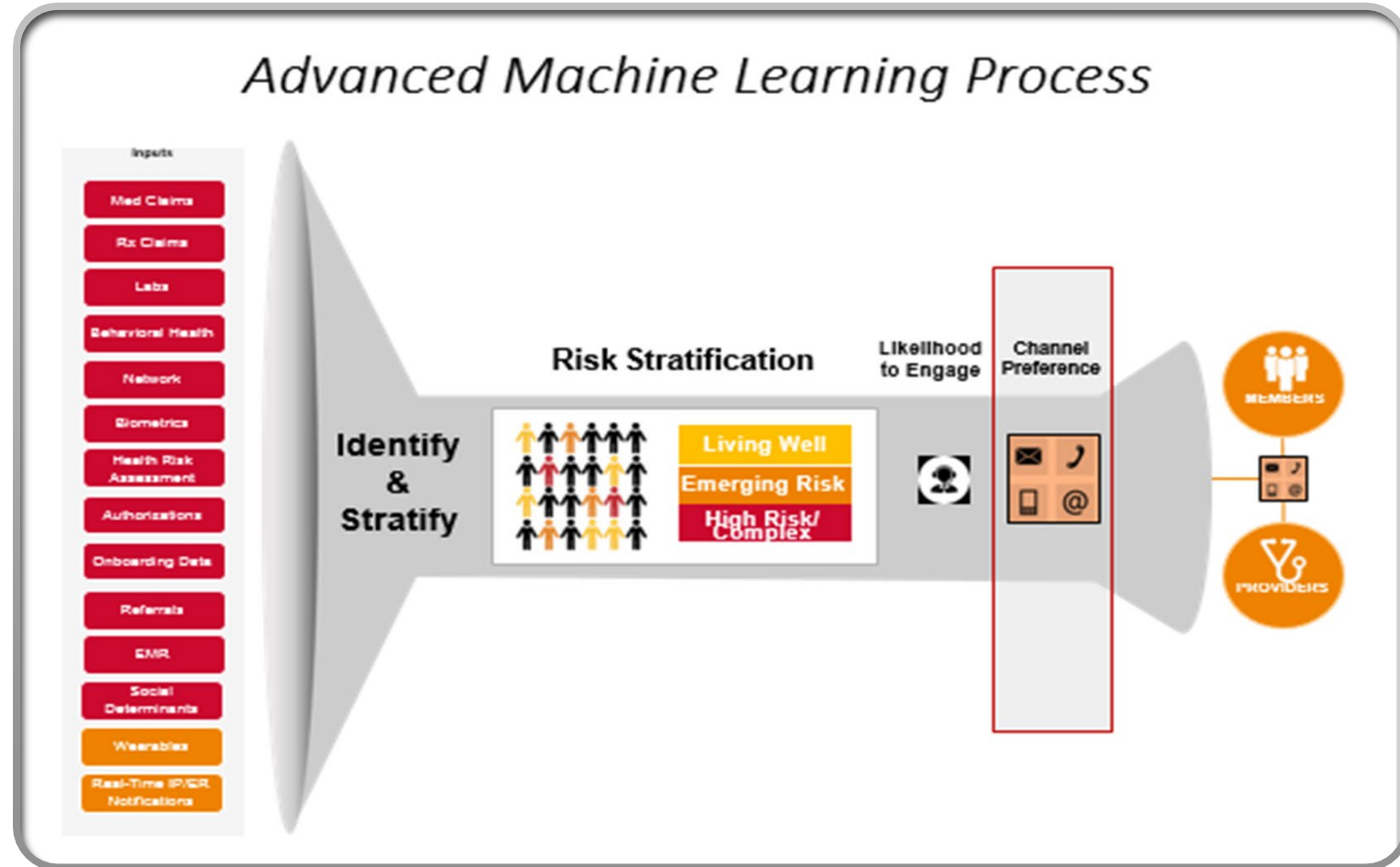
Health care actuaries must evolve their analytical capabilities to keep pace...

Traditional Health Care Actuarial practices still apply:

- Claims utilization
- Membership data
- Provider contracting rates

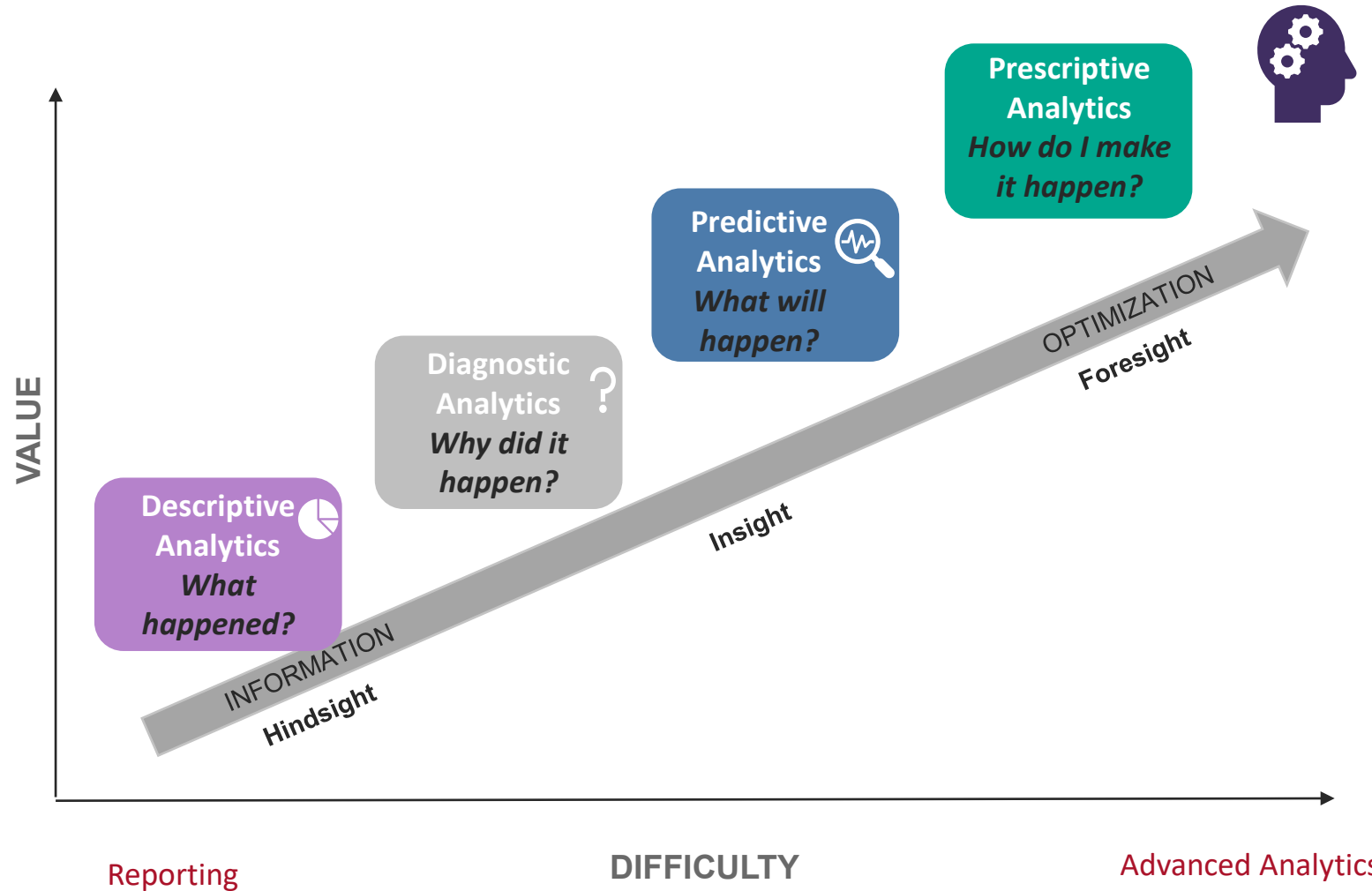
But need to be coupled with:

- Member level health outlook
- Social Determinants of Health
- Consumer Behavior



Analytics Maturity Model

...allowing value of the analysis to provide insight and foresight.



The Role of the Actuary

To optimize the analytics in your organization, the health care actuary will need to:



Coordinate with healthcare analytics and data scientists to improve predictive modeling and analytical capabilities



Acquire and incorporate Social Determinants into analysis



Understand Consumer Behavior and how choices are made



Balance law of large numbers with less credible data projections



Solution for member-centric impacts

