

COVID-19 Return Stages: Deferral and Restarting of Health Care Services





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This paper was originally published in June 2020 using information and noting references that were available at that point in time. This version updates the paper to August 2020 with additional current references and recognizing new information emerging on the restarting of U.S. health care services.

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Introduction

As COVID-19 reported cases and deaths climbed swiftly in the U.S. beginning in mid-March 2020, many cities, counties and states began to implement safer-at-home orders to the public in order to prevent further transmission of the disease. Orders ranged dramatically on their length, specificity on guidelines to a variety of business sectors and how large group public gatherings should be altered or cancelled.

In the U.S. health care sector, the level of health care services that were willing and able to be offered was also dramatically affected. Beginning in the first few weeks of March 2020, some individual health care facilities within health care systems transitioned to an only-COVID focus to help concentrate efforts on effective treatments for COVID patients and reduce the overall disease transmission. Other facilities continued to offer non-COVID services but reduced patient traffic in order to limit transmission in hospital settings. In many cases, these non-COVID hospital services focused solely on emergent and life-sustaining health care services; they deferred or cancelled low intensity and elective services. Services in physician offices and laboratories were often also reduced or eliminated.

However, since not all areas in the U.S. experienced the same intensity of COVID, nor had the same levels of safer-at-home orders, some health care systems reduced their services materially less than others. On March 23, 2020, less than ten states had statewide safer-at-home orders in place. As March turned into early April, more states began to follow suit. By April 7, 2020, all but eight states had statewide safer-at-home orders.¹

As March turned into April, less-impacted jurisdictions began to phase out safer-at-home orders. On April 16, national guidelines were released highlighting recommendations for jurisdictions to consider for returning back to more typical business and social activities.² Key items to be considered included downward trajectories of symptoms of influenza-like and COVID-like illnesses over a 14-day period, downward trajectories of positive COVID tests and documented cases over a 14-day period and for hospitals to be able to treat all patients without crisis care and testing programs in place for at-risk health care workers. Shortly after these guidelines were issued, the Centers for Medicare & Medicaid Services (CMS) also issued updated guidance on providing essential non-COVID care to patients without symptoms of COVID-19 in regions with low and stable incidence of the virus. The CMS guidelines indicated that when a state has passed specified criteria health care organizations would be able to restart health care services postponed due to COVID-19 in coordination with local and state public health officials.³

Since there are a wide range of health care insurance rating areas, and correspondingly a unique set of paths each area might have followed in March through July 2020, it becomes important to study how health care services have been deferred and potentially restarted. The issue becomes ever more important as actuaries at health carriers begin to consider rate filings for insured plans in 2021. With an unknown path of what level of health care services may play out over the second half of 2020 and into 2021, it can be helpful to additionally create a stage system to map current business, social and health care activities to each stage for a common discussion vocabulary and health care cost analysis.

Return Stage Definitions

As part of an upcoming Society of Actuaries (SOA) research release to model health care costs in 2020 and 2021, a set of “Return Stages” were created in order to define the various level of activities being observed, as well as to contemplate the ways these stages may progress as various cities, counties and states release their own phasing processes for returning their jurisdictions to normal. Examples of these phasing

processes included the “Restore Illinois” Public Health plan,⁴ the “Open Texas” plan⁵ and California’s Pandemic Resilience Roadmap.⁶

The SOA Return Stage categories were designed to incorporate various aspects and activities of the wide range of U.S. federal, state and local plans into a common set of descriptions. The SOA Return Stages range from numerical values 1 to 10, with Return Stage 1 representing the most constricted business, social and health care activities. At the other end of the spectrum, Return Stage 10 represents a return to fully normal activities. Of course, the future definition of “normal” activities should be considered carefully as the types and levels of health care services in a future Return Stage 10 may look notably different in some cases from what had been commonly presumed in the past.

The main indicators that help define the Return Stages fall into the following categories:

COVID-19 CASE COUNT TRENDS

The framework recognizes what the recent trends are for potential COVID-19 case counts. Sources of current and past trends of reported case counts for COVID-19 are available down to specific geographies. Common sources include:

- o The John Hopkins University of Medicine Coronavirus Resource Center, located at <https://coronavirus.jhu.edu/map.html>
- o The City of New York Department of Health COVID-19 Data Center, located at <https://www1.nyc.gov/site/doh/covid/covid-19-data.page>

HEALTH CARE SYSTEM ACTIVITY

The level of activity at a range of local health care facilities is important to evaluate to help define Return Stages. In some cases, data available to assess current statistics such as Bed Occupancy Rate may be lagged but comparisons may be made to available hospital beds and anticipated hospitalizations such as in <https://www.healthaffairs.org/doi/10.1377/hblog20200317.457910/full/> and data examples from the American Hospital Association (AHA) Annual Survey at <https://www.aha.org/statistics/fast-facts-us-hospitals>. An overview of recommended levels of activity and phased approaches for non-COVID activity can be identified by the Centers for Disease Control and Prevention at <https://www.cdc.gov/coronavirus/2019-ncov/hcp/non-covid-19-client-interaction.html>

SOCIAL DISTANCING AND PUBLIC ACTIVITIES

Group activity levels and recommended personal protection equipment utilization for the public can help define Return Stages, as these steps have some impact on disease transmission but also contribute to what actions people are taking in making personal health care decisions. A variety of sources have evolved for the current environment to identify current recommendations from local and state governments including the New York Time Reopen Map at <https://www.nytimes.com/interactive/2020/us/states-reopen-map-coronavirus.html>

BUSINESS AND RECREATIONAL ACTIVITY

Health care systems are part of the integrated business community, so identifying the types of businesses that are operating, and the range of business, retail and recreational activity that is occurring can help define the Return Stage. Mobility data is a new type of technology that also helps in this way, and an example of this type of data is the Google COVID-19 Community Mobility Reports at <https://www.google.com/covid19/mobility/>. The retail and recreational mobility trends compared to a baseline for the community being measured highlights mobility trends for places like restaurants, cafes, shopping centers, theme parks, museums, libraries, and movie theaters. As some locations experience a range of mobility activities and also have increases or decreases in COVID-19 case activity some variability

in the correlation of mobility to case trends may occur. Users of this data should consider mobility data among other local activities to define Return Stage.

Definitions of these Return Stages are intended to be general and informative for use and should not be viewed as all specific criteria must be exactly met.

The SOA Research Brief Return Stages are described in Table 1.

Table 1
SOCIETY OF ACTUARIES RESEARCH BRIEF RETURN STAGES

Return Stage Number	Description	COVID-19 Case Count Trends	Health Care System	Social Distancing and Public Activities	Business Activity
1	Full Local Pandemic	New case count rate growing	COVID hospitals at capacity or strained; Non-COVID hospitals closed or only accepting emergent cases; Medical and surgical centers closed; No elective or non-essential services; Lack of in-person treatment or service would result in patient harm.	No public interaction; No public activities; Face covering required; No public travel; Schools closed	Essential business activity only; Retail and recreation mobility down 70% or more from baseline normal
2	Wide Spread	New case count rate growing	COVID hospitals at capacity or strained; Non-COVID hospitals with minimal activity and accepting emergent cases; Medical and surgical centers with minimal activity; Minimal elective or non-essential services; Lack of in-person treatment or service would result in patient harm.	No public interaction; No public activities; Face covering required; No public travel; Schools closed	Essential business activity only; Retail and recreation mobility down 60% from baseline normal
3	Early Flattening	New case count rate slowing	COVID hospitals at capacity but not strained; Small non-COVID hospitals, medical center and physician office activity; Lack of in-person treatment or service would result in patient harm.	Individual and family socially distanced activities; Face covering as standard norm; Restrictions in travel; Schools closed	Non-essential business activity through pick-up and delivery; Remote work for office buildings; Retail and recreation mobility down 50% from baseline normal
4	Continue Flattening	New case count rate slowing	COVID hospitals at capacity but not strained; Small non-COVID hospitals, medical center and physician office activity; Lack of in-person treatment or service would result in patient harm.	Individual and family socially distanced activities; Face covering as standard norm; Restrictions in travel; Schools closed	Non-essential business activity through pick-up and delivery; Remote work for office buildings; Retail and recreation mobility down 40% from baseline normal
5	Recovery	Minimal new cases	All hospitals with capacity; Medical center and physician office activity through safety precautions; Intermediate acuity treatment or service; Not providing the service has the potential for increasing morbidity or mortality	Gatherings of 10 or fewer people; Face covering as standard norm; Restrictions in travel; Schools closed	Manufacturing, office buildings, retail, personal services activity through safety precautions; Retail and recreation mobility down 30% from baseline normal

SOCIETY OF ACTUARIES RETURN STAGES (Continued)

Return Stage Number	Description	COVID-19 Case Count Trends	Health Care System	Social Distancing and Public Activities	Business Activity
6	Recovery	Minimal new cases	All hospitals with capacity; Medical center and physician office activity through safety precautions; Intermediate acuity treatment or service; Follow-up visits for management of existing medical or mental/behavioral health condition; Evaluation of new symptoms in an established patient	Gatherings of 10 or fewer people; Face covering as standard norm; Restrictions in travel; Schools closed	Manufacturing, office buildings, retail, personal services activity through safety precautions; Retail and recreation mobility down 25% from baseline normal
7	Revitalization	Minimal new cases	All hospitals with capacity; Medical center and physician office activity through safety precautions; Provisions for low acuity treatments or services; Routine primary or specialty care	Gatherings of 50 or fewer people; Face covering encouraged; Travel permitted; Schools open	All business activity available through safety precautions; Retail and recreation mobility down 20% from baseline normal
8	Stabilization	Minimal new cases	All hospitals with capacity; Medical center and physician office activity through safety precautions; Routine primary or specialty care; Preventive care visits and screenings	Gatherings of 50 or fewer people; Face covering encouraged; Travel permitted; Schools open	All business activity available through safety precautions; Retail and recreation mobility down 15% from baseline normal
9	Restoration	No new cases	All hospitals with capacity; Normal medical center and physician office activity	No restrictions—Conventions, concerts, festivals, large events allowed; No face covering; Travel permitted; Schools Open	Fully open; Retail and recreation mobility down 10% from baseline normal
10	Fully Restored	No new cases	All hospitals with capacity; Normal medical center and physician office activity	No restrictions—Conventions, concerts, festivals, large events allowed; No face covering; Travel permitted; Schools Open	Fully open; No change in retail and recreation mobility from baseline normal

Emerging Research Literature on Return Stage Observations

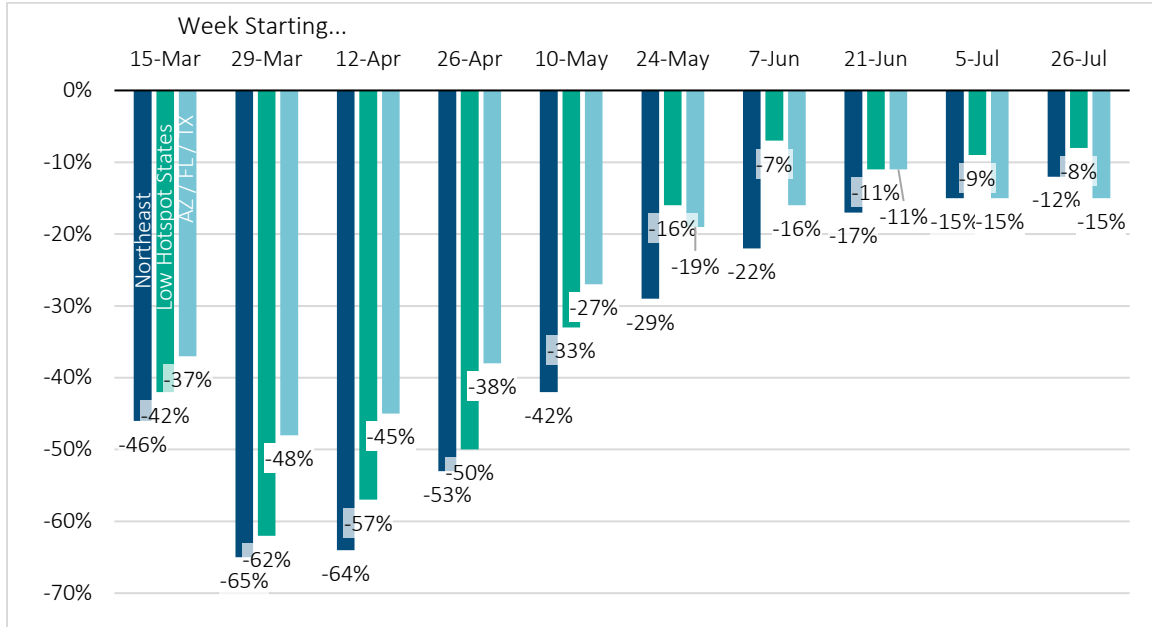
As business and social activity occurred through a variety of public orders and Return Stages in May and June 2020, data on the past and emerging level of health care services became further available. These reports allowed researchers to establish the shift in current health care services, and further establish the level of deferred services that have occurred and may be accumulating. Data from these studies provided helpful initial empirical evidence to inform on deferral and recoupment factors to be used in forecasting future health care costs under Return Stage scenarios.

OUTPATIENT SERVICE LEVELS BY GEOGRAPHY, MARCH THROUGH JULY 2020

In an updated study from The Commonwealth Fund on August 13, 2020, researchers from Harvard University and Phreesia, a company that focuses on health care software and service scheduling applications, analyzed data on changes in outpatient patient visit volume for ambulatory care. The study included information for more than 50,000 providers that are Phreesia clients.⁷ Results from the study showed the data in Table 2 by geographic region over recent weekly time periods.

Figure 1
PERCENTAGE CHANGE IN OUTPATIENT VISITS, USING WEEK STARTING MARCH 1, 2020, AS A BASELINE

Northeast; Low Hotspot States; Arizona / Florida / Texas



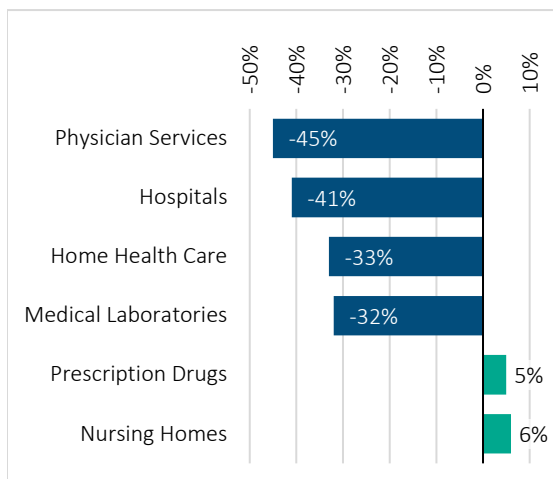
Data source: Ateev Mehrotra et al, The Commonwealth Fund.

Through March and early April, New England and Mid-Atlantic states were among the regions hardest hit with COVID-19 outbreaks, with cities such as New York City having some of the highest reported case levels. These areas also showed the highest level of reduction or deferral of health care services, reaching reductions between 60% and 70% at their peak. Other locations that were exhibiting less severe Return Stages still had noticeable reductions in outpatient services but at lesser levels. Outpatient visits began to recover in mid to late April into early June.

INSURER HEALTH CARE SERVICE UTILIZATION, APRIL 2020 COMPARED TO APRIL 2019

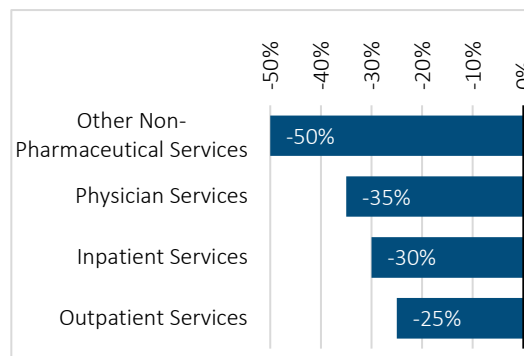
Additional observations come from following data through the Bureau of Economic Analysis and from health care service firms at their first quarter earnings calls. The Peterson-Kaiser Family Foundation Health Service Tracker analyzed current data sets from these types of sources and highlighted emerging and unprecedented trends when comparing April 2020 to one year prior.⁸ Figure 2 and Figure 3 identify the percentage change seen in health care service expenditures from April 2019 to April 2020. Member utilization comes from data provided at the CVS Health Corporation’s first quarter 2020 earnings call.⁹

Figure 2
CHANGE IN PERSONAL CONSUMPTION
EXPENDITURES, MAY 2019 TO APRIL 2020



Data source: Kaiser Family Foundation

Figure 3
REPORTED CHANGES IN MEMBER UTILIZATION OF
SERVICES, APRIL 2019 TO APRIL 2020



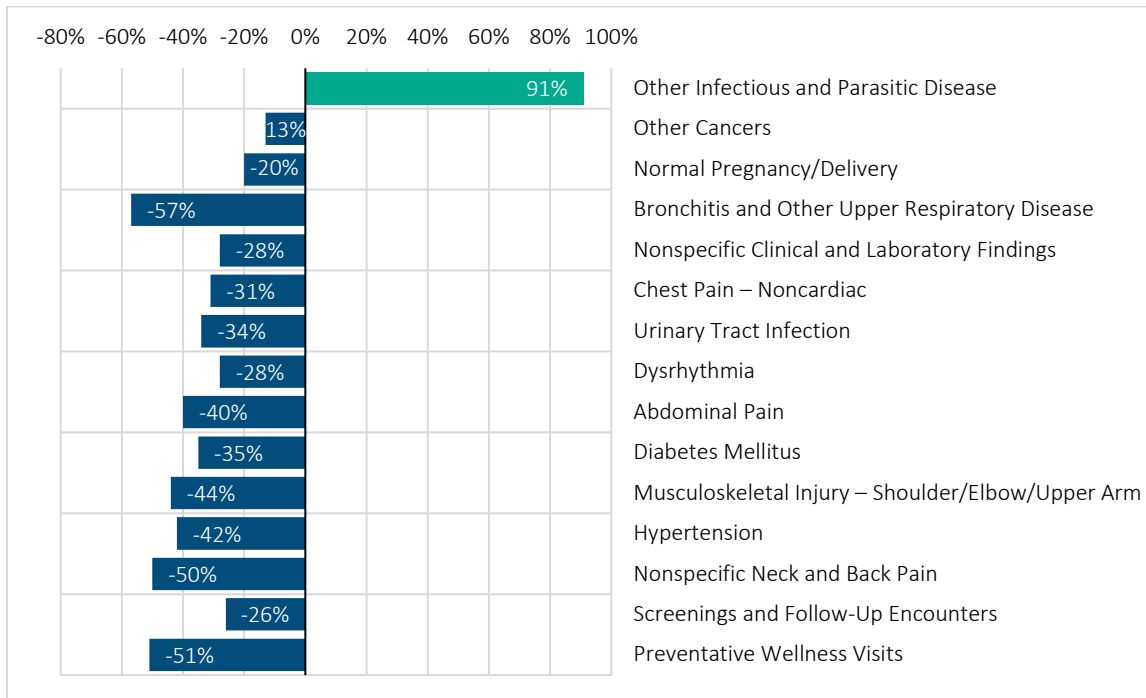
Data source: Motley Fool Transcribers

These data observations continue to reaffirm the drop off in service levels for many major health care service categories, with the main exception of pharmaceuticals.

IMPACT ON TOP 15 HOSPITAL VISIT SERVICES, MARCH THROUGH JULY 2020

In a recent release from Strata Decision Technology, a health care technology firm that provides solutions for health care system tracking and financial planning, a focus was to study changes in health service categories by looking at comparable dates from March 1 through July 4 of 2019 and 2020.¹⁰ The study looked at data from over 200 hospitals in 40 states, who serve more than 65 million patients. 225 common procedure types were evaluated for matching timeframes in 2019 and 2020. Of note was the change in service levels for the Top 15 most common hospital visit categories, with many seeing significant drops in activity. Infectious diseases, which includes COVID-19, was the only set of top care categories that saw increased volume over 2019 (Figure 4).

Figure 4
CHANGES IN UTILIZATION OF SERVICES, MARCH 1–JULY 4, 2019 TO MARCH 1–JULY 4, 2020



Data source: Strata Decision Technology

Deferral and Restarting of Health Care Services by Return Stage

The Society of Actuaries is in the process of creating and releasing a health care cost model that will look to inform users of the potential path of health care costs as rating areas move through their current and future Return Stages. An important part of this model will be modelling the deferral and return of health care services as rating areas move through a variety of potential Return Stage paths. The model will be designed so that users can choose Return Stage progressions to follow over time, and presumably at some point in the future revert back to an ultimate level of Return Stage 10. In any type of model that uses projected Return Stages, a user will need to make assumptions about the trajectory of return stages over the time period for which costs are being developed. Forecasts will clearly be subject to uncertainty but developing a range of scenarios and with potential probability estimates can be helpful.

The model will look to incorporate the following key features of the emerging data seen in the literature to date:

- Deferred services will happen, and with larger intensity when Return Stages are at low numerical values.
- Some deferred services may never be recouped or restarted back in to the system and would be eliminated from future health care costs. Hospice services that are deferred may not have the opportunity to restart back in to the health care system due to the death of the individual. Other services deferred may be decided by the patient that they were not needed, or the individual patient may have reluctance to enter back to receive health care service.

- Deferred service levels will vary greatly by the health care service type. Pharmaceutical services will have the smallest impact from progressing through Return Stages and the ability to have prescription drugs mailed, delivered or picked up with minimal interaction has become very common. Service levels for other categories, such as inpatient, outpatient and physician office visits will be more impacted, though with some diagnosis types and some service categories being more heavily impacted. Preventative and wellness services are likely among the most heavily impacted, and high intensity emergent services less impacted.
- Restarting and re-emergence of deferred health care services will be a function of the Return Stage, as the ability for society to move around with confidence and the opening of health care service centers to enable capacity for services are key drivers.
- There is a maximum amount of how much recoupment of services that have been deferred can be performed in a given time period. The accumulated level of deferred services may grow, especially if rating areas are presumed to stay in low Return Stages for long periods of time. The accumulation, however, is likely to only be absorbed back into the system at a certain rate. The number of hours available to perform additional services in a stated time period are limited by the length of time and by the availability of human resources.

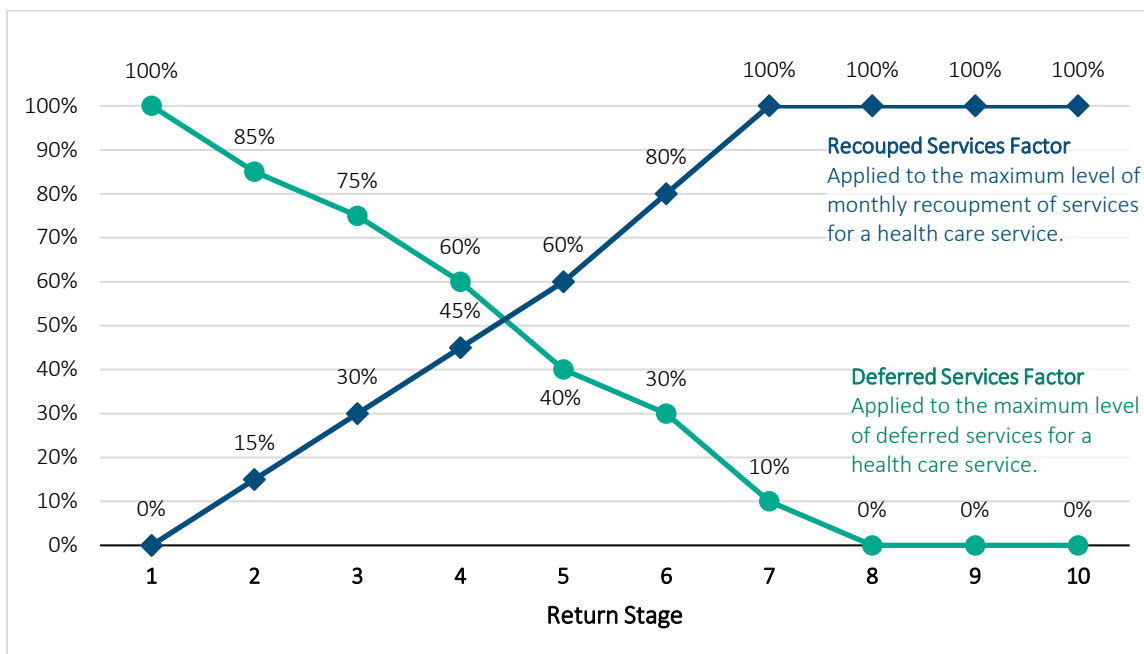
As the SOA model of health care services emerges, initial values of how much deferral and recoupment of health care services by Return Stage have been studied. In the model, it is likely that two values will be established for each type of health care service:

- The **Maximum Amount of Deferral** that will happen for the health care service for the month during the defined monthly Return Stage
- The **Maximum Amount of Recoupment** that will happen for the health care service for the month during the defined monthly Return Stage

Values for these Maximum Deferral and Maximum Recoupment will vary greatly by the type of service. Values for deferral have been seen to be very low for pharmaceutical services, and highest for outpatient services.

By using these variables and setting levels as a percentage of these maximums for deferral and recoupment of services, a forward-looking health care cost model can simulate how health care costs may emerge under Return Stage scenarios. An initial array of values for these variables as they apply to health care service costs across Return Stages is shown in Figure 5.

Figure 5
RETURN STAGE FACTORS FOR DEFERRED AND RECOUPED SERVICES



RETURN STAGE SIMULATION EXAMPLE

As an example, consider a single outpatient health care service that has the following assumptions:

- A Return Stage scenario for January – May 2020 along this path
 - January – February: Return Stage 10
 - March – April: Return Stage 1
 - May: Return Stage 2
- A maximum amount of outpatient service deferral of 70% of one month’s services
- An elimination of 10% of any deferrals that will never be recouped
- A maximum amount of recoupment of 25% of one-month services of any accumulated deferrals
- A Per Member Per Month health care service cost of \$7.00

A simulation of the outpatient service costs under this Return Stage scenario would play out as follows in Table 2.

Table 2
RETURN STAGE SIMULATION EXAMPLE FOR AN OUTPATIENT SERVICE COST

	Jan	Feb	Mar	Apr	May
Simulation Return Stage	10	10	1	1	2
(A) Base Cost	\$7.00	\$7.00	\$7.00	\$7.00	\$7.00
(B) Maximum Deferral	70%	70%	70%	70%	70%
(C) Deferral Factor for Return Stage	0%	0%	100%	100%	85%
(D) Total Deferral Factor = (B) x (C)	0%	0%	70%	70%	59.5%
(E) Costs Deferred Before Elimination = (A) x (D)	\$0.00	\$0.00	\$4.90	\$4.90	\$4.17
(F) Elimination Factor for Deferrals	10%	10%	10%	10%	10%
(G) Eliminated Costs = (E) x (F)	\$0.00	\$0.00	\$0.49	\$0.49	\$0.42
(H) Net Deferred Costs = (E) – (G)	\$0.00	\$0.00	\$4.41	\$4.41	\$3.75
(I) Maximum Monthly Recoupment	25%	25%	25%	25%	25%
(J) Recoupment Factor for Return Stage	100%	100%	0%	0%	15%
(K) Total Monthly Recoupment Factor = (I) x (J)	25%	25%	0%	0%	3.75%
(L) Total Accumulated Deferred Costs at Start of Month; Begins at \$0.00 and accumulates each month	\$0.00	\$0.00	\$0.00	\$4.41	\$8.82
(M) Recouped Costs = (K) x (L)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.33
(N) Net Cost = (A) – (E) + (M)	\$7.00	\$7.00	\$2.10	\$2.10	\$3.16
(O) Total Accumulated Deferred Costs at End of Month = (L) + (H) – (M)	\$0.00	\$0.00	\$4.41	\$8.82	\$12.24

Endnotes

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About The Society of Actuaries

With roots dating back to 1889, the *Society of Actuaries* (SOA) is the world's largest actuarial professional organizations with more than 31,000 members. Through research and education, the SOA's mission is to advance actuarial knowledge and to enhance the ability of actuaries to provide expert advice and relevant solutions for financial, business and societal challenges. The SOA's vision is for actuaries to be the leading professionals in the measurement and management of risk.

The SOA supports actuaries and advances knowledge through research and education. As part of its work, the SOA seeks to inform public policy development and public understanding through research. The SOA aspires to be a trusted source of objective, data-driven research and analysis with an actuarial perspective for its members, industry, policymakers and the public. This distinct perspective comes from the SOA as an association of actuaries, who have a rigorous formal education and direct experience as practitioners as they perform applied research. The SOA also welcomes the opportunity to partner with other organizations in our work where appropriate.

The SOA has a history of working with public policymakers and regulators in developing historical experience studies and projection techniques as well as individual reports on health care, retirement and other topics. The SOA's research is intended to aid the work of policymakers and regulators and follow certain core principles:

Objectivity: The SOA's research informs and provides analysis that can be relied upon by other individuals or organizations involved in public policy discussions. The SOA does not take advocacy positions or lobby specific policy proposals.

Quality: The SOA aspires to the highest ethical and quality standards in all of its research and analysis. Our research process is overseen by experienced actuaries and nonactuaries from a range of industry sectors and organizations. A rigorous peer-review process ensures the quality and integrity of our work.

Relevance: The SOA provides timely research on public policy issues. Our research advances actuarial knowledge while providing critical insights on key policy issues, and thereby provides value to stakeholders and decision makers.

Quantification: The SOA leverages the diverse skill sets of actuaries to provide research and findings that are driven by the best available data and methods. Actuaries use detailed modeling to analyze financial risk and provide distinct insight and quantification. Further, actuarial standards require transparency and the disclosure of the assumptions and analytic approach underlying the work.

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