



Impact of COVID-19 on Deferred Medical Costs and Future Pent- Up Demand



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In the past months, as COVID-19 has forced the reduced activity in the U.S. economy there has been some very substantial, but varied effects on the U.S. healthcare system. While inpatient beds are being flooded by COVID-19 patients, particularly in several local hotspots, much of the remainder of the industry is experiencing a very different environment. Due to stay at home orders, conservation of critical healthcare resources, and general population fears, non-critical medical resources are seeing precipitous drops in patient volume. Most of those services are being which would be previously treated which are now being canceled or deferred with others taking place remotely.

There is a lot of potential for confusion amongst providers and patients with regards to decisions related to which services ought to be rendered and which ought to be deferred.

Two specific agencies – the Centers for Medicare and Medicaid Services (CMS), and the American College of Surgeons (ACS) have put together some guidance to add more clarity towards what types of services should be provided and what types ought to be deferred.

In addition, this paper includes a discussion on what types of services are most likely to be deferred, and which ones will accrue pent-up demand to be released when many of the deferred services become available again.

CMS Guidelines for Deferring Care

CMS' recently put out a set of recommendations to help providers navigate through which types of services to treat in person and which to defer or treat remotely. The decisions on actual courses are going to be made by state and local health officials and clinicians and realizing this, CMS will attempt to fine tune their guidance over the coming weeks. Some key considerations on these criteria include the following: ¹

- Current and projected COVID-19 cases by community and region
- Ability to implement telehealth, supply of personal protective equipment (PPE)
- Staffing availability
- Location of care capacity
- COVID-19 virus and antibody testing capacity
- Patient comorbidities and risk factors
- Urgency of treatment

CMS put together a series of three tiers of acuity to help in these efforts. Tier 1 services consist of low acuity services that are easily postponable without significant adverse consequences. Tier 3 services consist of high acuity treatments or services which would result in patient harm if not rendered. Tier 2 services includes a broader range of services that are of higher acuity than Tier 1, but lower than Tier 3. It is worth noting that Tier 2 services require the most judgment specific to each patient's conditions in order to apply these recommendations. Tier 1 services

are recommended for postponement, while Tier 3 services are recommended for immediate care. Tier 2 service recommendations are more nuanced ranging with initial recommendations of telehealth with later telehealth follow-ups or in-person visits if conditions worsen. Table 1 below includes some key elements of CMS' different tiers along with recommendations of whether and how services should be rendered. ²

Table 1
CMS GUIDELINES FOR TRIAGING MEDICAL SERVICES DURING THE COVID-19 EPIDEMIC

Tiers	Definition	Visit Locations	Examples	Action
Tier 1	Low Acuity Treatment or Service	Doctor's Office in various locations	Routine Primary, Preventive and Wellness Care	Postpone Services and divert to telehealth or remote monitoring
Tier 2	Intermediate Acuity Treatment or Service - Not providing Service May Increase Morbidity or Mortality	Doctor's Office, Clinic, Outpatient Department, Ambulatory Surgery Center	Pediatric vaccinations, Newborn care, Follow-up of existing health condition, New symptoms in an established patient, Nonurgent COVID-19 symptoms	Initial telehealth evaluation; triage to appropriate sites as necessary, Follow-up with virtual check-in
Tier 3	High Acuity Treatment or Service - Lack of in-person treatment or service would result in patient harm	Doctor's Office, Clinic, Outpatient Department, Ambulatory Surgery Center, Emergency Department	Evaluation of new symptoms in a new patient, Severe COVID-19 symptoms	Do not postpone in-person evaluation; subsequent triage to appropriate facility/level of care

ACS Guidelines on Elective Surgeries

The ACS also provided some meaningful guidance on triaging different types of conditions with recommendations of postponement, telehealth visits, in person visits, and surgeries. In their March 17 guidance, the ACS presented a broad framework similar to that of CMS with recommendations for triaging non-emergent surgeries. It includes three tiers of categories with the same acuity as the CMS breakouts. However, they also split the categorization between 'a' and 'b' sub tiers, with 'a' representing "healthy" patients and 'b' representing unhealthy patients. Table 2 below shows the guidelines released by ACS on March 17. ³

Table 2
INITIAL AMERICAN COLLEGE OF SURGEONS GUIDELINES FOR TRIAGING SURGERIES DURING THE COVID-19 EPIDEMIC

Tiers	Definition	Visit Locations	Examples	Action
Tier 1a & 1b	Low Acuity Treatment or Service	Outpatient Hospital, Ambulatory Surgery Center, Low COVID census Hospital	Carpal Tunnel Release, Penile Prosthesis, EGD(Upper Endoscopy), Colonoscopy	Postpone Surgery or perform at Ambulatory Surgery Center
Tier 2a & 2b	Intermediate Acuity Treatment or Service - Not providing Service May Increase Morbidity or Mortality	Outpatient Hospital, Ambulatory Surgery Center, Low COVID census Hospital	Low Risk Cancer, Non-urgent spine, Ureteral Colic	Postpone Surgery if possible or perform at Ambulatory Surgery Center
Tier 3a & 3b	High Acuity Surgery	Hospital	Most Cancers, Highly Symptomatic Patients	Do not postpone

The ACS followed these guidelines up with some more detailed guidelines on additional surgeries. On March 24, the ACS published another set of more detailed guidelines on elective case triage guidelines for surgical care. This set of guidelines includes additional breakouts around types of surgeries and conditions requiring surgeries. These conditions addressed by this paper are as follows:

Cancer Surgery, Breast Cancer Surgery, Colorectal Cancer Surgery, Thoracic Cancer Surgery, Emergency General Surgery, Gynecology, Metabolic-Bariatric Surgery, Neurosurgery, Ophthalmology, Orthopaedic Procedures, Otolaryngology, Pediatric Surgery, Urology, Vascular Surgery.

Each of the conditions / surgeries listed above come with its own set of specifications. The following link leads to the website which includes this list of surgeries, with each category having a separate link of its own with additional detail. <https://www.facs.org/covid-19/clinical-guidance/elective-case> ⁴

Some of the guidance on the specified topics is more general or incomplete– such as the Cancer Surgery, Neurosurgery, Otolaryngology, and Urology links.

Other sets of guidance are very detailed oriented and provide a lot of differentiations between different conditions. These include Orthopaedic Procedures and Vascular Surgery.

Another common theme within many of these recommendations is the different guidance being offered under varying COVID-19 scenarios. The common terminology in these guidelines refers to three different phases of COVID-19 activity. Table 3 below describes some of the criteria within each phase:⁵

Table 3
ACS DESCRIPTIONS OF DIFFERENT PHASES OF THE COVID-19 EPIDEMIC

Phase	Description
Phase I	Few COVID-19 patients, hospital resources not exhausted, institution still has ICU ventilator capacity and COVID-19 trajectory not in rapid escalation phase
Phase II	Many COVID-19 patients, Intensive Care Unit (ICU) and ventilator capacity limited, Operating Room (OR) supplies limited
Phase III	Hospital resources are all routed to COVID 19 patients, no ventilator or ICU capacity, OR supplies exhausted. Patients in whom death is likely within hours if surgery deferred.

Per the ACS instructions, there is much more leeway to perform surgeries in Phase I vs. Phase II or III. In fact, Phase III hospitals will only perform surgery onsite if the alternative is for the patient to die. One of the main Phase III recommendations is to find another location for the procedure.

In addition to addressing those specific conditions, the guidelines also provide some overarching guidelines on what to expect with COVID-19 as well as how to deal with aspects of patient care and surgery that might overlap with COVID-19 both in the patient and the setting of care.

As the country moves through different phases in the COVID-19 curve, it is likely that new guidelines will emerge regarding the resumption of elective surgeries and other “non-essential” services.

Guidelines for Estimation of Deferred Services and Pent-Up Demand Caused by Temporary Restrictions on Elective Services

Due to the highly contagious and potentially deadly nature of COVID-19, public officials have put certain rules into place to curtail elective or “non-essential” care. This was done with two goals in mind; to keep the disease from spreading and to maintain hospital and provider capacity for treating the expected surge of COVID-19 patients.

Because of the nature of current medical care, it turns out that a significant portion of medical services rendered prior to COVID-19 are now on hiatus because they are elective or non-critical in nature. Once these services are allowed to resume, it is expected that there will be a level of pent-up demand associated with their resumption as well as with potentially higher acuity of many of those conditions. The impacts of the interruption and resumption of these services can vary widely by category of service.

Service categories are often split between Inpatient Hospital, Outpatient, Professional Services, and Pharmacy. These services are likely to be impacted differently depending on the relative share of elective services within each one, as well as the resulting pent-up demand in those areas. In addition, when these elective services are allowed or capable of being performed later, some may be deferred while others may be canceled in the event that conditions may have changed along with the circumstances of impacted individuals.

We examined data from the Health Care Cost Institute (HCCI) to get a sense of what types of services would most likely be deferred as elective services as well as their likelihood of being part of the pent-up demand once those services are removed. We also looked at the impact on Medical Costs caused by Hurricane Harvey in August of 2017 for the Houston and Beaumont / Port Arthur geographical regions. We examined claims reductions by service category as well as the bounce back in pent-up demand for those different categories.

During the five-day period where Texas was shut down from Houston to the Louisiana border because of severe flooding from Hurricane Harvey, there were significant reductions in many services, particularly non-essential ones. In measuring the impacts of this event, we looked at a total reduction in claims relative to an average week of claims. Outpatient services saw the greatest reduction at 64% of one week’s worth of claims, while and Professional’s reduction was equivalent to 60% of a week of claims. Inpatient’s reduction was 52% of a week of claims while Pharmacy services dropped the least at 40% of a week of claims. Since these deferrals were over a shorter period of time, it is likely that we would see lesser declines attributable to the multi-month COVID-19 event as some of the events that were deferred for several days would not be sustainable for the members impacted. Instead, due to deteriorating conditions, those members would need to have an available outlet for treatment of their conditions. Table 4 below shows different levels of claims reductions by main service category and subcategory. In addition, it shows different levels of pent-up demand rebounds for each of the categories listed – again as a percentage of an average week of claims. ⁶

Table 4
HURRICANE HARVEY CLAIMS DEFERRALS AND PENT-UP DEMAND REBOUNDS

Service Category	Subcategory	Reduction	Rebound	Pre-Harvey	Post-Harvey
Inpatient	Birth Related	-36%	53%	1%	52%
Inpatient	Other	-54%	12%	2%	10%
Inpatient	Total	-52%	17%	2%	15%
Outpatient	ER	-22%	-8%	0%	-8%
Outpatient	Other	-77%	8%	0%	8%
Outpatient	Total	-64%	4%	0%	4%
Professional	ER	-6%	12%	9%	3%
Professional	Hospitalist	-18%	12%	8%	4%
Professional	Other	-68%	4%	1%	3%
Professional	Total	-60%	5%	2%	3%
Pharmacy	General	-40%	19%	1%	18%

On the pent-up demand rebound side, it’s worth noting that Hurricane Harvey had some increased volume in some categories prior to the Hurricane. This was due to the anticipation of a disruption and helped to mitigate some of

the later pent-up demand. In particular, Professional ER and Hospitalist visits saw higher pre-Harvey demand as physicians were able to squeeze in some last minute visits prior to the disruption. Births saw a greater level of rebound due to deferrals of services. The resulting higher costs were due to many of the births shifting from ordinary newborn to complex newborn. This and some other scenarios will likely play out differently in the current COVID-19 environment.

While the areas of Inpatient Hospital, Outpatient, and Professional services would be expected to have significant declines under COVID-19 restrictions, Pharmacy declines (if any) would be expected to be significantly smaller. Pharmacies remain open and continue to fill prescriptions, including making deliveries to high risk populations. However, there would still be an expectation of some decline in pharmacy utilization as the deferral of doctors' appointments could result in fewer diagnoses of new conditions and fewer new prescriptions. On the other hand, the use of therapeutics to treat COVID-19 could result in increased prescriptions.

Non-pharmacy services, are likely to have more similarities with the Hurricane Harvey patterns, although perhaps more muted in magnitude.

Inpatient Services would have the smallest declines and fewest deferrals in maternity categories. In addition, one would expect to modest declines in Medical services while declines in surgeries would likely be the highest due to higher volumes of elective services there. Behavioral health and substance abuse hospitalizations may increase by worsening home and work conditions for some individuals. However, these may be offset by patients' fears of being in a hospital setting as well as reduced hospital availability due to staffing and PPE constraints. Finally, hospital stays for treated conditions may be shorter than usual in the interest of freeing up resources for COVID-19.

Just like in Hurricane Harvey, Outpatient Services may experience the sharpest declines. From a subcategory perspective, Emergency Room (ER) visits will likely decline the least. Despite the disincentive of member to use the ER for less critical conditions, the ER may see some offsetting volumes of patients whose underlying conditions worsen due to the deferral of physician services or surgeries that might have alleviated some of those conditions. Non-ER services will likely have more dramatic declines as many hospital-based services are likely to be either postponed due to their more elective natures or delivered in different settings, such as physicians' offices or ambulatory surgery centers.

Professional services will likely also have relatively large drop-offs. Physician services provided in ER and Hospital settings will likely decline the least and may be at least partially offset by more COVID-19 related services in those settings. On the other hand, routine preventive care and some specialist care will likely see the sharpest declines. Some specialist (particularly Mental Health and Substance Abuse) and Primary Care Physician sick care visits will have lower declines due to services being shifted over to telehealth.

Another important aspect of these deferred services is the extent to which they may re-emerge as pent-up demand once they become available again.

In the Hurricane Harvey parallel study, there was fairly limited pent-up demand following resumption of care. While this may not apply directly to COVID-19, at a minimum it is worth noting as a possibility. During the re-opening of East Texas after Hurricane Harvey, Inpatient and Pharmacy services saw the highest level of bounce back at 10 - 20% overall, while Outpatient and Professional bounce back due to pent-up demand was below 5% in the Harvey's immediate aftermath. Although there was not an obvious change in later periods, it's possible that much of the pent-up demand was alleviated over a longer period of time so as to not be easily distinguishable from underlying trends. It's also worth noting that there was an overall 5% drop in the HCCI insured population in the month following Hurricane Harvey that may have dampened some of the commercial pent-up demand.⁷ Table 5 below

provides some detailed level of guidance by service category of what types of reductions in cost due to interruption of services and subsequent cost increases due to pent-up demand.

Table 5
 EXPECTED LEVEL OF CHANGES IN CLAIMS BY SERVICE CATEGORY DUE TO COVID-19 DISRUPTIONS

Main Category	Subcategory	Extent of Reduction	Level of Pent up Demand
Inpatient	Maternity/Newborn	Low	Low
Inpatient	Medical	Low / Moderate	Low
Inpatient	Surgery	Moderate/High	Moderate
Inpatient	Behavioral Health	Low / Moderate	Low / Moderate
Inpatient	Substance Abuse	Low	Low / Moderate
Inpatient	Skilled Nursing Facility	Moderate	Low / Moderate
Outpatient	Emergency Room	Low / Moderate	Low / Moderate
Outpatient	Observation	Moderate/High	Low
Outpatient	Diagnostic	High	Low / Moderate
Outpatient	Surgery	High	Moderate
Professional	ER & Facility	Low / Moderate	Low / Moderate
Professional	Surgery	High	Moderate
Professional	Preventive	High	Low
Professional	Diagnostic	Moderate/High	Low
Professional	Dental Services	High	Low / Moderate
Professional	Primary Care*	High	Low
Professional	Specialty Care*	High	Moderate
Pharmacy	General	Low	Low

*Some of these deferred services may be replaced by Telehealth instead

Some general guidelines for deferred services reductions are: below 20% for Low deferrals and over 50% for High deferrals. These are general guidelines which could vary significantly based on the types of restrictions imposed as well as the intensity of the COVID-19 epidemic in each location.

Regarding some of the factors presented in Table 4, it is important to note that while the deferrals in services are likely to occur fairly quickly, the pent-up demand may be released more slowly as COVID-19 restrictions begin to be eased. Services that are newly permitted will see the largest increases in pent-up demand while other services that remain restricted will continue to be deferred. It is likely that more urgent types of services will resume quickly.

On the Inpatient side, surgeries are likely to be among those that bounce back the fastest.

Outpatient and Professional Services may see some different patterns of deferred service bounce backs. Some services may be obtained through either of those channels, such as diagnostic tests or administration of drugs. These services are likely to revert more to those locations where they are more readily available resulting in potential cost shifts between those categories. In addition, if any services have been deferred for too long, they may be either replaced by more costly and high acuity services or eliminated altogether. This could mean a shifting to Emergency Room or Inpatient services in some cases. In cases cancer diagnoses, deferrals could result in costlier treatments if there is a delay in detection resulting in less favorable diagnoses. Preventive services, routine dental services, and other wellness checks are most likely to be postponed until the next regularly schedule time. The use of telehealth can help to smooth out some of those deferred services by maintaining a level of care at the present.

One of the drivers that may dampen the rebound of pent-up demand is the anticipated disruption of insurance coverage. While some of the deferred services may return later, some of them may end up being paid by a separate entity. As individuals lose their jobs, some may choose alternative forms of coverage or become uninsured. Many of the deferred services will end up being shifted from Group coverage to Individual coverage or to Medicaid. The result of this type of membership shifting may be lower claims costs as provider reimbursements through Medicaid tend to be significantly lower than those in a commercial environment.

Finally, many providers are at risk for insolvency or bankruptcy due to all of the reduced services that are currently taking place. Those that do not serve COVID-19 members are at a higher risk. Insurers may need assist some of these providers with some kind of financial rescues or interim funding to ensure network coverage for their members. Value based care arrangements may also play a role in achieving that goal or inhibiting it. Bonus payments based on lower member claims volumes would likely help those providers. Quality based incentives which require office visits and diagnostic testing will be difficult to meet and to that extend, insurers need to be ready to help make up for some of these revenue shortfalls in order to maintain provider networks for their members.

Depending on how this situation is addressed, there could be significant fallout in terms of health care supply during the period of pent-up demand rebound. If members with untreated conditions during the COVID-19 lockdown have difficulty in finding providers to treat them after restrictions are eased, this could impact the pent-up demand through the shifting of care to less appropriate settings with sub-optimal care.

Conclusion

The deferral of elective services due to the COVID-19 pandemic will have a significant impact on claims both during and after the epidemic. The reductions in claims may be offset by higher COVID-19 related costs in part. However, most expectations are for overall claims decrease. The extent of the service deferrals and claims reductions are closely tied to the extent of restrictions on elective services by local and state authorities, the volume of COVID-19 cases taking up local hospital capacity, and the impact of job losses on insurance coverage.

In examining the guidelines for deferral and triaging of services presented by CMS and the ACS, it is clear that service reductions will be significant. Increased claims following the easing of restrictions will depend on many different medical and economic factors which make it more difficult to predict. With the length of time of expected service deferrals and possible additional waves of COVID-19 still uncertain, this disruption may well continue into 2021. As additional information emerges over time, many of these impacts should become clearer allowing insurers, employers, and providers to be more prepared to handle the consequences of these events.

References

- ¹ Non-Emergent, Elective Medical Services, and Treatment Recommendations, April 7, 2020. <https://www.cms.gov/files/document/cms-non-emergent-elective-medical-recommendations.pdf>. Accessed April 20, 2020.
- ² Non-Emergent, Elective Medical Services, and Treatment Recommendations, April 7, 2020. <https://www.cms.gov/files/document/cms-non-emergent-elective-medical-recommendations.pdf>. Accessed April 20, 2020.
- ³ COVID-19: Guidance for Triage of Non-Emergent Surgical Procedures, March 17, 2020. <https://www.facs.org/covid-19/clinical-guidance/triage>. Accessed April 25, 2020.
- ⁴ COVID-19: Elective Case Triage Guidelines for Surgical Care, March 24, 2020.. <https://www.facs.org/covid-19/clinical-guidance/elective-case>. Accessed April 25, 2020.
- ⁵ COVID-19: Elective Case Triage Guidelines for Surgical Care, March 24, 2020.. <https://www.facs.org/covid-19/clinical-guidance/elective-case>. Accessed April 25, 2020.
- ⁶ Health Care Cost Institute Data: <https://healthcostinstitute.org/data>. Accessed April 22, 2020.
- ⁷ Health Care Cost Institute Data: <https://healthcostinstitute.org/data>. Accessed April 22, 2020.

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