Covid-19 Service Line Impact Guide

A quick-hit guide to the impact of Covid-19 on major service lines

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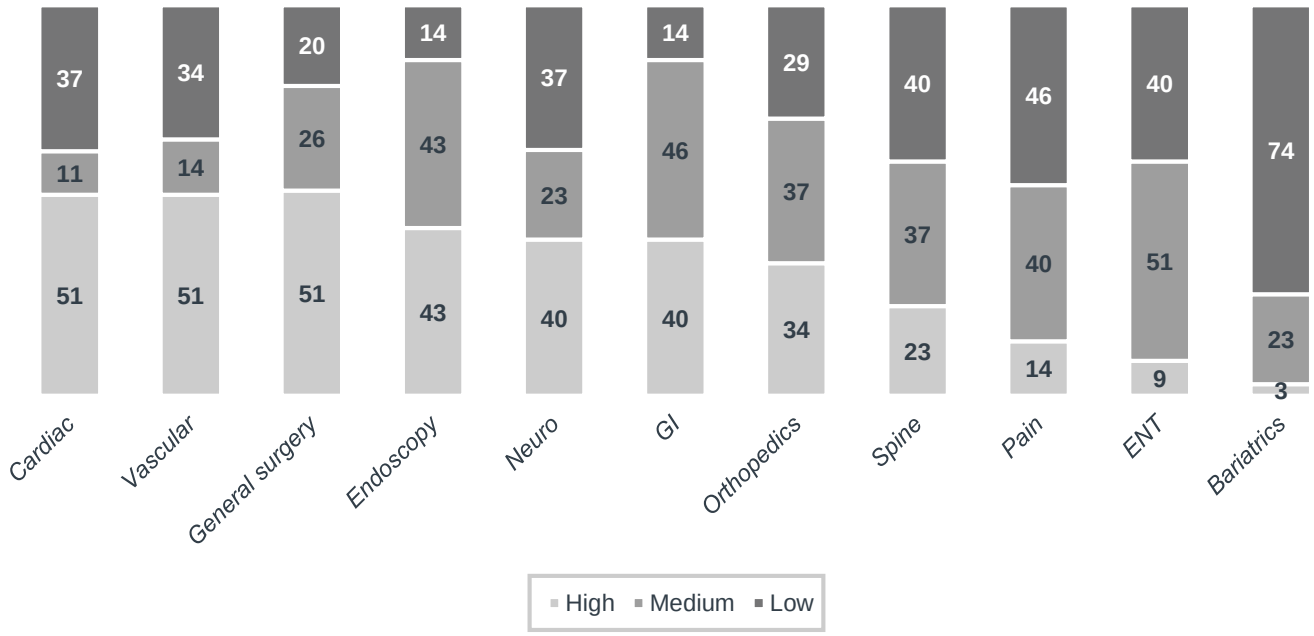
Introduction

As organizations restart elective procedures, they'll need to weigh the impacts of Covid-19 on individual service lines. While restart priorities have begun to coalesce around a few big service lines, different services will likely take different paths to volume recovery, face distinct challenges in clearing volume backlogs, and see some unique impacts to longer term demand.

Survey conducted by LEK Consulting from April 21-28 highlights priority procedure categories

Respondents' prioritization of service lines for restarting procedures; n = 100 hospital administrators and clinicians from diverse hospitals



This remainder of this report includes Advisory Board's take on the major implications for elective procedures within key service lines. Specifically, we outline the top elective procedures by volumes, recommended restart phasing based on clinical urgency, barriers to clearing the backlog, and mid- to long-term demand implications for each service line.

Source: Source: LEK Consulting Survey: Covid-19 Impact on U.S. Hospitals, April 29, 2020. Available at https://www.lek.com/insights/impact-covid-19-us-hospitals-edition-5
Service Line Strategy Advisor research and analysis.

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Cardiovascular

The following considerations can help CV leaders as they ramp back up traditional services, work through a backlog of postponed cases, and prepare for future demand changes coming out of Covid-19.

Top elective cardiovascular procedures by volumes[1,2]

- PCI
- Peripheral vascular intervention
- CABG
- Valve replacement/repair
- Carotid stenting/angioplasty

Short term considerations for restarting elective services

Phasing of elective subservice lines based on clinical urgency

Phase 1 (1-2 months)	Phase 2 (2-3 months)	Phase 3 (3+ months)
• Arterial disease • Cardiac cath • Medical cardiology • Cardiac surgery • Electrophysiology	• Medical vascular • Vascular surgery • Vascular cath • Venous disease	• N/A

Barriers to clearing backlog of cases

- The first CV patients to return to the hospital will likely have increased complexity and require more intense care, either due to new or worsened conditions from Covid-19 or delayed care. The added complexity of these patients will increase the time needed per case.
- The resources required to treat these complex patients, such as bed availability for patients who have long LOS and anesthesiologist and pulmonologist availability, will be spread thin as providers are tasked with ongoing Covid-19 response

Mid- to long-term demand impacts

- Accelerated shift from acute care settings to outpatient and freestanding sites and increased utilization of remote monitoring/telehealth as patients continue to avoid the hospital
- Increased use of medical management may reduce demand for procedural care
- Covid-19 can exacerbate heart failure and worsen blood clotting, potentially resulting in higher CV patient volumes

1. All services shown are estimated to have 50% or greater elective volumes. Any services not shown SSLs not listed are ones considered non-elective because less than 50% of their volumes are estimated to be elective. The definition of elective used is on the following page.
2. Only procedures with >90,000 national, annual volumes considered.

Source: Service Line Strategy Advisor research and analysis.

Service Line Strategy Advisor

Cardiovascular

Subservice line summary

Subservice line	Estimated percent elective	Phasing restart by clinical urgency	Estimated drop off in future demand
OP medical cardiology	90%	Phase 1	Low
OP electrophysiology	90%	Phase 1	Medium
OP cardiac cath	80%	Phase 1	Low
OP vascular surgery	80%	Phase 2	Low
OP vascular cath	80%	Phase 2	Low
OP medical vascular	80%	Phase 2	Low
IP arterial disease	70%	Phase 1	None
IP cardiac surgery	60%	Phase 1	Low
IP cardiac EP	60%	Phase 1	Medium
IP cardiac cath	50%	Phase 1	Low
IP venous disease	50%	Phase 2	Medium

DEFINITIONS

- **Estimated percent elective:** estimated portion of each subservice line that is both scheduled in advance and may be delayed for a short period of time without significant worsening of the condition.
- **Phasing restart by clinical urgency:** recommended prioritization of restarting services based solely on clinical urgency or importance for identification of higher acuity services. Services in earlier phases are more urgent. Phase 1: immediate, Phase 2: 2-3 months, Phase 3: 3+ months
- **Estimated drop off in demand:** decrease in demand over the next 1-2 years due to lingering patient fear. Low: 5-15%, Medium: 16-30%, High: 30%+, None: 0%

Source: Service Line Strategy Advisor research and analysis.

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Orthopedics and Spine

The following considerations can help orthopedics and spine leaders as they restart traditional elective procedures coming out of their COVID-19 curve and work through the backlog of cases that has accrued.

Top elective orthopedics and spine procedures by volumes[1,2]

- OP general surgical orthopedics
- OP sports medicine
- IP joint replacement
- IP fusion
- OP pain pumps and stimulators
- OP other spine procedures
- OP decompression

Short term considerations for restarting elective services

Phasing of elective subservice lines based on clinical urgency

Phase 1 (1-2 months)

- Medical trauma
- Surgical trauma
- General medical orthopedics
- Fracture/dislocation treatment

Phase 2 (2-3 months)

- Joint replacement
- Other surgical orthopedics
- Sports medicine
- Fusion
- Other surgical spine
- Decompression
- Pain pumps and stimulators
- Excision/osteotomy
- Other spine procedures

Phase 3 (3+ months)

- Foot
- Hand
- General surgical orthopedics

Barriers to clearing backlog of cases

- Working through backlog will require expanded OR hours, including weekends
- Willingness of surgeons and other staff to flex capacity beyond standard operating hours

Mid- to long-term demand impacts

- Mid-term reduction in sports medicine demand amid sporting event cancellations
- Orthopedic trauma suppressed during stay-at-home period
- ASCs may attract more elective, commercially-insured orthopedic and spine patients
- Outpatient shift of joint replacement and shift of TKAs to ASCs are likely to accelerate

1. All services shown are estimated to have 50% or greater elective volumes. Any services not shown SSLs not listed are ones considered non-elective because less than 50% of their volumes are estimated to be elective. The definition of elective used is on the following page.
2. Services are ranked from highest to lowest volume and include orthopedics and spine service lines with over 200,000 annual national volumes.

Source: Service Line Strategy Advisor research and analysis.

Orthopedics and Spine

Subservice line summary

Subservice line	Estimated percent elective	Phasing restart by clinical urgency	Estimated drop off in future demand
OP fusion	90%	Phase 2	High
OP vertebral compression fracture treatment	90%	Phase 2	Medium
OP pain pumps and stimulators	90%	Phase 2	Low
OP decompression	90%	Phase 2	High
OP excision/osteotomy	90%	Phase 2	High
OP other spine procedures	90%	Phase 2	Medium
OP foot and hand	90%	Phase 3	Medium
OP joint replacement	90%	Phase 2	Medium
IP joint replacement	80%	Phase 2	Low
IP fusion	80%	Phase 2	Low
IP other surgical spine	80%	Phase 2	Low
OP sports medicine	60%	Phase 2	Low
IP foot and hand	50%	Phase 3	Low
IP other surgical orthopedics	50%	Phase 2	Low
IP sports medicine	50%	Phase 2	Low
OP general surgical orthopedics	50%	Phase 3	Low

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Source: Service Line Strategy Advisor research and analysis.

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General Surgery & Urology

The following considerations can aid General Surgery and Urology leaders as they plan to ramp back up elective procedures coming out of their Covid-19 curve and work through a backlog of cases.

Top elective general surgery and urology procedures by volumes [1,2]

- General urology
- Urodynamics
- Breast
- Colorectal/lower GI
- Male genital system
- Prostate
- Hernia
- Urolithiasis
- Incontinence
- Bone marrow/stem cell procedures

Short term considerations for restarting elective services

Phasing of elective subservice lines based on clinical urgency

Phase 1 (1-2 months)

- IP/OP colorectal/lower GI
- IP/OP breast
- IP/OP prostate
- OP urolithiasis
- OP spleen

Phase 2 (2-3 months)

- IP/OP hernia
- OP general urology
- OP incontinence
- OP lymphatic
- OP renal procedures

Phase 3 (3+ months)

- IP/OP bariatric
- OP male genital system
- OP urodynamics
- OP abdomen
- OP bone marrow/stem cell procedures
- OP other urological diagnostic testing

Barriers to clearing backlog of cases

- Many procedures will require anesthesiologist and ventilator availability
- Physician availability may be needed for extended hours, including weekends
- PPE supply levels, as well as bed and operating room capacity, may be limiting factors to clearing procedure backlogs

Mid- to long-term demand impacts

- Availability of upstream lab, imaging, and PCP services will likely limit long-term ramp-up
- Potential increase in emergent, complex cases as delayed care and late diagnoses worsen conditions
- Potential adoption of telehealth for pre- and post-op surgical appointments

1. All services shown are estimated to have 50% or greater elective volumes. Any services not shown are ones considered non-elective because less than 50% of their volumes are estimated to be elective. The definition of elective used is on the following page.
2. Services shown are estimated to have over 500,000 annual volumes nationally.

Source: Service Line Strategy Advisor research and analysis.

General Surgery and Urology

Subservice line summary

Subservice Line	Estimated percent elective	Phasing restart by clinical urgency	Estimated drop off in future demand
IP/OP bariatric	90%	Phase 3	Medium
OP abdomen	80%	Phase 3	Medium
OP bone marrow/stem cell procedures	80%	Phase 3	Medium
OP male genital system	80%	Phase 3	Medium
OP other urological diagnostic testing	80%	Phase 3	Medium
OP urodynamics	80%	Phase 3	Medium
IP/OP prostate	70%	Phase 1	Medium
OP lymphatic	70%	Phase 2	Medium
OP general urology	70%	Phase 2	Medium
OP renal procedures	70%	Phase 2	Medium
OP urolithiasis	60%	Phase 1	Medium
OP incontinence	60%	Phase 2	Medium
IP/OP colorectal/lower GI	50%	Phase 1	Low
IP/OP breast	50%	Phase 1	Low
OP spleen	50%	Phase 1	Low
IP/OP hernia	50%	Phase 2	Low

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Source: Service Line Strategy Advisor research and analysis.

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Gastroenterology

The following considerations can help Gastroenterology leaders as they ramp back up traditional services coming out of their Covid-19 curve and work through a backlog of cases caused by postponed procedures.

Top elective gastroenterology procedures by volumes[1,2]

- Colonoscopy
- EGD
- Other GI diagnostic testing
- Other GI procedures
- Anoscopy
- Sigmoidoscopy
- Percutaneous liver biopsy
- GERD testing
- ERCP
- Enteroscopy

Short term considerations for restarting elective services

Phasing of elective subservice lines based on clinical urgency

Phase 1 (1-2 months)

- Colonoscopy
- EGD

Phase 2 (2-3 months)

- Other GI diagnostic testing
- ERCP
- Enteroscopy
- Esophagoscopy

Phase 3 (3+ months)

- Anoscopy
- GERD testing
- Percutaneous liver biopsy
- Sigmoidoscopy
- Capsule endoscopy
- Other GI procedures
- Proctosigmoidoscopy

Barriers to clearing backlog of cases

- PPE supply levels, and procedural room and physician availability may be limiting factors to clearing procedure backlogs
- More complex surgeries dependent on upstream screening services/referrals and ventilator availability[3]
- Restart date for screenings will lag behind diagnostic and therapeutic services, to the extent which they can be scheduled

Mid- to long-term demand impacts

- Patients may delay screenings and opt for at-home stool tests over the next few years
- Accelerated shift out of the hospital setting to ASCs and endoscopy centers
- Potential adoption of telehealth for medical management of chronic conditions
- Potential adoption of open access endoscopies
- Availability of upstream services like PCP referrals may limit return of volumes to pre-COVID levels

1. All services shown are estimated to have 50% or greater elective volumes. Any services not shown are ones considered non-elective because less than 50% of their volumes are estimated to be elective. The definition of elective used is on the following page.
2. Services shown estimated to have over 100,000 annual volumes nationally.
3. See General Surgery for more complex GI surgeries.

Source: Service Line Strategy Advisor research and analysis.

Gastroenterology

Subservice line summary

Subservice Line	Estimated percent elective	Phasing restart by clinical urgency	Estimated drop off in future demand
Other GI diagnostic testing	80%	Phase 2	Medium
Anoscopy	80%	Phase 3	Medium
Capsule endoscopy	80%	Phase 3	Medium
GERD testing	80%	Phase 3	Medium
Other GI procedures	80%	Phase 3	Medium
Percutaneous liver biopsy	80%	Phase 3	Medium
Proctosigmoidoscopy	80%	Phase 3	Medium
Sigmoidoscopy	80%	Phase 3	Medium
Colonoscopy	70%	Phase 1	Medium
Esophagogastro-duodenoscopy (EGD)	70%	Phase 1	Medium
Endoscopic retrograde cholangiopancreatography (ERCP)	70%	Phase 2	Medium
Enteroscopy	70%	Phase 2	Medium
Esophagoscopy	70%	Phase 2	Medium

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Source: Service Line Strategy Advisor research and analysis.

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Imaging

The following considerations can help imaging leaders as they ramp back up traditional services coming out of their Covid-19 curve and work through a backlog of exams.

Top elective imaging procedures by volumes[1,2]

- Chest X-ray
- Musculoskeletal X-ray
- Mammography
- Abdominal/pelvic CT
- Head/neck/brain CT
- Neck/spine X-ray
- Abdominal ultrasound
- Abdominal ultrasound
- Chest CT
- Abdominal X-ray
- Spine MRI
- Pelvic ultrasound
- Bone/joint MRI

Short term considerations for restarting elective services

Phasing of elective subservice lines based on clinical urgency

Phase 1 (1-2 months)

- Most advanced imaging (CT, MRI, PET)
- Diagnostic mammography
- Some ultrasound, X-ray

Phase 2 (2-3 months)

- Screening mammography for high-risk patients
- Nuclear medicine
- Rest of ultrasound, X-ray

Phase 3 (3+ months)

- Screening mammography for low-risk patients
- Lung screening
- Elective IR procedures

Barriers to clearing backlog of cases

- Increased slot times due to additional cleaning protocols between exams
- Limited waiting room and facility capacity due to social distancing guidelines
- Limited staff availability to work extended hours, weekends

Mid to long-term demand impacts

- Slight decline in “self-referred” exams such as screening mammography and low-dose lung screening
- Increased shift towards non-hospital based outpatient imaging
- Unknown impact on ordering patterns of imaging due to increased use of telehealth

1. All services shown are estimated to have 50% or greater elective volumes.
2. All services shown have greater than 8,000,000 projected national volumes in Advisory Board's Outpatient Imaging Market Estimator.

Source: Imaging Performance Partnership interviews and analysis; Outpatient Imaging Market Estimator, Advisory Board; Service Line Strategy Advisor research and analysis.

Imaging

Subservice line summary

Subservice Line	Estimated percent elective	Phasing restart by clinical urgency	Estimated drop off in future demand
Mammography	90%	Phase 2/3	Low
MRI	70%	Phase 1	Low
Nuclear Medicine	70%	Phase 2	None
CT	60%	Phase 1	Low
PET	50%	Phase 1	None
Ultrasound	50%	Phase 1/2	Low
X-ray	50%	Phase 1/2	Low

DEFINITIONS

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Source: Imaging Performance Partnership interviews and analysis; Service Line Strategy Advisor research and analysis.

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Oncology

The following considerations can help oncology leaders as they ramp back up traditional services coming out of their Covid-19 curve and work through a backlog of cases caused by postponed procedures.

Top elective oncology procedures by volumes

The vast majority of procedural oncology volumes are not elective. However, some cancer surgeries have been delayed. In an Advisory Board survey from mid-April 2020, 54% of cancer programs said they were experiencing a decrease greater than 20% in their inpatient surgery volumes. Sixty-seven percent saw a similar decline in outpatient surgery volumes. Comparatively, fewer than 2% of surveyed programs saw infusion or radiation volumes drop by more than 20%.

Short-term considerations for restarting elective services

Phasing of subservice lines based on clinical urgency[1]

Phase 1 (1-2 months)	Phase 2 (2-3 months)	Phase 3 (3+ months)
• OP[2] Chemotherapy • OP Radiation therapy • IP[3] Oncology (medical) • IP Hematology (medical) • OP/IP Cancer surgeries	• IP Radiation oncology	• N/A

Barriers to clearing backlog of cases

- Most cancer programs had steady, or only slightly lower, infusion and radiation volumes during Covid-19 surge, so there is likely no or only small backlog for these services
- Some low-risk cancer surgeries were delayed; these procedures will need to integrate with ongoing surgery schedule
- Delayed pre-treatment consults should be able to resume without major barriers

Mid- to long-term demand impacts

- Potential increase in late-stage diagnoses due to delayed screenings
- Shift to virtual for select patient management services, including follow-up consults and some support services (e.g., genetic counseling)
- Ramp up of screening services and PCP visits required for sustained treatment volumes as patients in active treatment during Covid-19 surge complete treatment

1. Unlike other service lines, all oncology services are shown, including "non-elective cases. The vast majority of oncology volumes are not elective. The definition of elective is included on the following page/.
2. Outpatient.
3. Inpatient.

Source: Service Line Strategy Advisor research and analysis.

Oncology

Subservice line summary

Subservice Line	Estimated percent elective	Phasing restart by clinical urgency	Estimated drop off in future demand
OP Chemotherapy	5%	Phase 1	Low
OP Radiation therapy	25%	Phase 1	Medium
IP Oncology (medical)	25%	Phase 1	Low
IP Radiation oncology	61%	Phase 2	Medium
IP Hematology (medical)	6%	Phase 1	Low
OP/IP Cancer surgeries	25%	Phase 1	Low

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Source: Service Line Strategy Advisor research and analysis.

Service Line Strategy Advisor

Obstetrics and Gynecology

The following considerations can help OB-GYN leaders as they ramp back up traditional services coming out of their Covid-19 curve and work through a backlog of cases caused by postponed procedures.

Top elective gynecology procedures by volumes[1,2]

- Gynecological exams
- Biopsy – gynecology
- General gynecology procedures
- Artificial insemination/in vitro fertilization
- Women's reproductive health procedures
- General surgical gynecology
- Uterine fibroid procedures
- Hysterectomy

Short term considerations for restarting elective services

Phasing of elective subservice lines based on clinical urgency

Phase 1 (1-2 months)

- Biopsy - gynecology
- Surgical gynecology, including hysterectomy (for malignant disease)

Phase 2 (2-3 months)

- General surgical gynecology (for non-malignant disease)
- Hysterectomy (for non-malignant disease)
- Uterine fibroid procedures
- Gynecological exams
- General gynecology procedures

Phase 3 (3+ months)

- Artificial insemination/in vitro fertilization
- Women's reproductive health procedures

Barriers to clearing backlog of cases

- There is likely no backlog for deliveries.
- There is potential backlog for gynecology office visits and gynecologic surgeries.
- Limiting factors to clearing these backlogs will be physician availability and willingness to extend hours for office visits and upstream screenings/referrals for surgery.

Mid- to long-term demand impacts

- Continued shift to virtual visits for gynecology and prenatal visits
- Accelerated shift to ASC for gynecologic surgeries
- Minor shift to out-of-hospital births due to fear of in-hospital infection and temporary in-hospital birthing attendant and visitor limitations

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2. Procedures ordered from highest to lowest national volumes. Only procedures with greater than 100K volumes nationally are shown.

Source: Service Line Strategy Advisor research and analysis.

Obstetrics and Gynecology

Subservice line summary

Subservice Line	Estimated percent elective	Phasing restart by clinical urgency	Estimated drop off in future demand
OP artificial insemination/in vitro fertilization	100%	Phase 3	Medium
OP gynecological exams	90%	Phase 2	Medium
OP hysterectomy[1]	80%	Phase 2	Medium
OP uterine fibroid procedures	80%	Phase 2	Medium
IP general surgical gynecology[1]	80%	Phase 2	Low
OP general gynecology procedures	80%	Phase 2	Medium
OP women's reproductive health procedures	80%	Phase 3	Medium
OP biopsy – gynecology	60%	Phase 1	Low

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Source: Service Line Strategy Advisor research and analysis.

1. Only Phase 2 when for non-malignant conditions.

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