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What Patients Want: The Beginning of a Revolution in Care Delivery

A comprehensive look at the benefits of Remote Patient Monitoring (RPM) on patient outcomes and cost of care, the reimbursement landscape for providers, and the patient perspective—with real patient insights from a leading health system.

RPM Tips and Best Practices

As healthcare shifts from a fee-for-service to a value-based care approach, care delivery is shifting from an in-clinic, episodic, reactive model of care to one that is continuous, proactive, and a blend of in-clinic and remote. Remote Patient Monitoring (RPM) is an effective way to ensure the growing population of people with chronic conditions are getting the continuous, proactive care their condition requires. RPM refers to the use of digital technology like connected health devices to collect patient data remotely and securely send it to their doctors.

Data continues to show that both patients and providers have an appetite for RPM. The Public Health Emergency has accelerated adoption of platforms and devices that enable RPM programs, and industry stakeholders believe that payer coverage for RPM will continue to strengthen after the pandemic. With an influx of new RPM solutions, it's important to choose one that can support your needs beyond COVID-19.

As you search for the right solution, consider asking these questions:

✓ **Which conditions does your RPM solution support?**
The RPM market currently consists of a fragmented landscape of point solutions that ultimately add more cost and data silos. Look for a solution that addresses all comorbidities and can expand to other use-cases.

✓ **Is the RPM data you provide easily actionable?**
Clinicians are already tasked with looking at an overwhelming amount of siloed patient data. RPM solutions will not work if they provide clinicians with more data without distilling it down to specific, actionable, personalized steps. Look for solutions that offer clinical decision support based off of clinical guidelines as well as your clinic protocols, enabling more productive face-to-face visits and real-time alerts to improve patient outcomes and prevent costly interventions.

✓ **Does your RPM solution integrate with my EMR?**
Look for solutions that integrate directly with your EMR and enhance the clinical workflow rather than add to it. Single sign-on and two-way data exchange make integrated RPM platforms more secure, efficient and scalable within your organization. Thankfully, the 21st Century Cures Act will make data sharing and collaboration between third party solutions and EMRs much easier.

✓ **What does the patient-facing technology look like?**
Recognizing that not all patients have internet access or smart phones, it's important to ask how data is transmitted from the patient to the provider-facing solution. Cellular-enabled devices, for example, require little patient involvement. Platforms that integrate with cellular-enabled devices enable data to be transmitted without complicated syncing and pairing for the patient. No phone, hub or app is required.

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The Case for Remote Patient Monitoring: Health Care Spending vs. Outcomes in the U.S.

The U.S. reached $3.8 trillion on health care spending in 2019, an astounding $11,582 per person, and nearing 20% of gross domestic product (GDP). [1] Yet, compared to other developed countries who spend far less per capita, the U.S. has poorer health outcomes, and lower life expectancy. [2]

These out-of-control costs and poor outcomes are largely driven by a high prevalence of chronic conditions, and a focus on transactional visits and intervention rather than prevention and management. Six in 10 adult Americans have at least one chronic condition, and four in 10 have two or more, [3] and according to the Centers for Disease Control and Prevention (CDC), 90% of the total health care spend can be attributed to people with chronic and mental health conditions.

This isn't a new problem. For over a decade, the healthcare industry has been trying to remedy the discrepancy in cost and outcomes by shifting from volume-based, or fee-for-service care, to value-based care. As health systems ready their organizations for a more outcomes-focused financial model, it's hard to know where to begin. Proponents of value-based care are advocates for more widespread adoption of technology that enables virtualized, patient-centric care. The COVID-19 pandemic laid bare this need and underscored that the challenges of managing this acute crisis and managing prevalent chronic conditions like heart disease and diabetes are completely intertwined.

Life expectancy vs. health expenditure, 1970 to 2015

Health financing is reported as the annual per capita health expenditure and is adjusted for inflation and price level differences between countries (measured in 2010 international dollars).
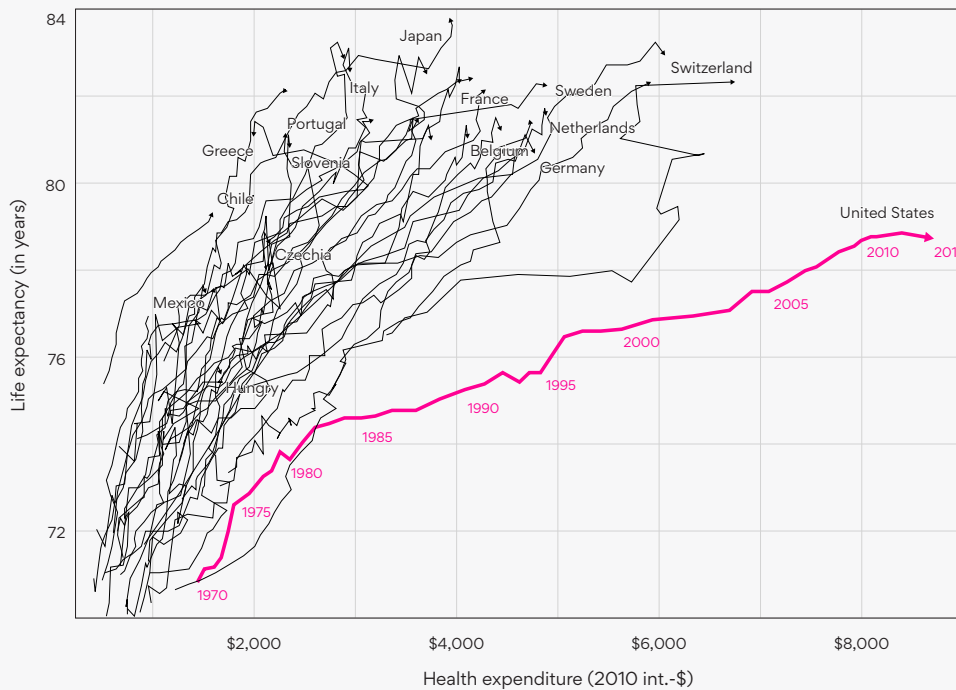
Source: World Bank, Health Expenditure and Financing - OECDstat (2017), Population (Gapminder, HYDE(2016) & UN (2019)), Our World In Data
Link: OurWorldInData.org/the-link-between-life-expectancy-and-health-spending-us-focus

Remote Patient Monitoring Reimbursement

RPM was gaining steam prior to the pandemic because of new reimbursement codes from the Centers for Medi-care and Medicaid Services (CMS) that were introduced over the past four years. The figure below provides an over-view of the current reimbursement codes related to RPM.

2021 Average Reimbursement Rates for Remote Patient Monitoring

CPT Code
99091

Clinician Interpretation of Remotely Generated Data

$59
per patient, per month

Unbundled in 2018, this code reimburses for time spent on collection and interpretation of health data that is generated by a patient remotely, digitally stored and transmitted to the provider, at a minimum of 30 minutes of time per month.

CPT Code
99453

Device Set-up and Patient Onboarding

$19
per patient, per device, one time

Added in 2019, this code covers set up of connected devices like glucometers, blood pressure cuffs and scales, and educating patients on how to use them.

CPT Code
99454

Remote Monitoring of Physiologic Parameters

$62
per patient, per month

Added in 2019, this code covers initial device supply and daily recording or programmed alerts transmission.

CPT Code
99457

Remote Monitoring and Treatment Management (first 20 minutes)

$52
per patient, per month

Added in 2019, this code covers the first 20 minutes in a calendar month of a Qualified Healthcare Professional (QHCP) or clinical staff monitoring, evaluating data, and intervening.

CPT Code
99458

Remote Monitoring and Treatment Management (each additional 20 minutes)

$42
per patient, per month

New in 2020, 99458 was added to account for additional time spent on remote monitoring and treatment management.

*Rates provided in figure are based off of national reimbursement rates. Rates for specific locations can be found via the Physician Fee Schedule Search tool on CMS.gov.

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Remote Patient Monitoring During COVID and Beyond
As the COVID-19 pandemic raged, telehealth and virtual care services including RPM became essential, both to manage the novel virus and to ensure care for the millions of Americans with chronic conditions continued. At the beginning of the pandemic, The Department of Health and Human Services (HHS) and the Centers for Medicare and Medicaid Services (CMS) released an Interim Final Rule to give providers more flexibility to furnish services using remote care technology for the duration of the Public Health Emergency (PHE). [4]

It is currently unclear how long the PHE will last; however, several key provisions in the Interim Final Rule were addressed in the 2021 Physician Fee Schedule (PFS). The chart below provides an overview of policies affecting Remote Patient Monitoring:

RPM Policy Overview

RPM Rule	Public Health Emergency	2021 Physician Fee Schedule
Patient Copays	During the PHE, patient copays for telehealth services including RPM were suspended, eliminating—temporarily at least—a perceived barrier to RPM adoption.	Patient co-pays are not addressed in the PFS. It will likely take an act of Congress to permanently waive patient copays for telehealth services and cannot be addressed in the PFS.
New vs. Established Patients	The interim rule enabled healthcare providers to provide RPM to new patients, not just established patients.	Once PHE expires, RPM services are limited to existing patients. However, CMS generally defers to state laws on valid doctor-patient relationships, and currently state laws allow doctors to use telehealth to create a valid doctor-patient relationship for new patients.
Patient Consent	The interim rule allowed for consent to be obtained at the time RPM services are furnished, and that consent could be virtual.	CMS clarified that this provision will remain the rule after the PHE ends.
Acute and Chronic Conditions	In the interim fee schedule, CMS clarified that while RPM is typically used for chronic conditions (high blood pressure, diabetes), it can also be used for other conditions—like an acute respiratory virus for example.	CMS further clarified that RPM services can be furnished both for patients with chronic conditions and acute conditions. This was a clarification, not a temporary measure tied to the PHE.
Minimum Days of Data Collection	The PHE reduced the minimum number of days per month that data must be collected and transmitted from 16/30 to 2/30 to meet billing requirements for CPT codes 99453 and 99454.	The 2021 PFS clarified that after the COVID-19 PHE ends, 16 days of data each 30 days must be collected and transmitted to meet the requirements to bill CPT codes 99453 and 99454.

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Additional 2021 PFS Rules for RPM

Additionally, CMS is proposing to make permanent that auxiliary personnel, including contractors, can furnish CPT codes 99453 and 99454 services under a physician's supervision. CMS is also clarifying that "interactive communication" for purposes of CPT codes 99457 and 99458 involves, at a minimum, a real-time synchronous, two-way audio interaction that is capable of being enhanced with video or other kinds of data transmission.

Are FQHCs and RHCs reimbursed for Remote patient Monitoring?

COVID-19 has also exposed something that public health experts have lamented for years: healthcare is inequitable. Race, ethnicity, socio-economic status and geography all play a role in whether an individual has adequate access to healthcare, and there are higher rates of chronic disease in minority and rural communities. Federally Qualified Health Centers (FQHCs) and Rural Health Centers (RHCs) are crucial components for ensuring providers can reach and improve care in underserved populations through greater adoption of such virtual care models.

Few state Medicaid programs currently reimburse for RPM [5]. However, during the pandemic, several grant opportunities from the Federal Communications Commission (FCC) and other government entities have helped providers—including FQHCs and RHCs—initiate new digital health programs.

RPM and Value-Based Care

In the coming years, experts believe funding and reimbursement for Remote Patient Monitoring and other virtual models of care will continue to grow. In fact, the RPM market is expected to double in the next five years. In a recent Consumer Technology Association (CTA) survey, 68% of physicians said they strongly intend to use RPM in the future.

Beyond the reimbursement opportunity, RPM constitutes a core capability essential to making the shift to value-based care and to achieving the quadruple aim of healthcare: improved patient outcomes, lower cost, and improved patient and provider satisfaction. Embracing a more continuous model of patient care, including remote physiologic monitoring and telemedicine, had been difficult for many practices until these reimbursement pathways were introduced, essentially providing an on ramp to more proactive, holistic care.

Despite RPM's infancy, both anecdotal feedback and quantitative results from providers have been positive. In the CTA survey, physicians perceived the top benefits of RPM to be improved patient outcomes, improved compliance rates, and patients taking more ownership of their health. In a 2018 KLAS research report, the majority of study participants surveyed were pleased with the success of their RPM programs—especially when it comes to reducing costly encounters like hospital admissions, readmissions, and ER visits. [6]

Rimidi's platform-based approach is designed to support quality improvement, workflow optimization, and patient engagement objectives all within the existing EMR workflow.

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**How Satisfied are Patients with RPM?**
The Public Health Emergency served as a catalyst for providers to adopt and see the benefits of Remote Patient Monitoring on quality of care and patient outcomes, and boosted awareness about opportunities for reimbursement. But has RPM been embraced by patients?

Rimidi and Desert Oasis Healthcare (DOHC) surveyed over 250 patients who are remotely monitored for diabetes, cardiovascular disease, heart failure and obesity. The patients are given a cellular-enabled connected device—glucometer, blood pressure cuff, and/or scale depending on their needs. As cellular-enabled devices, there is no complicated syncing or pairing for the patient; the device works out of the box and is already set up to transmit the patient-generated data to Rimidi's platform.
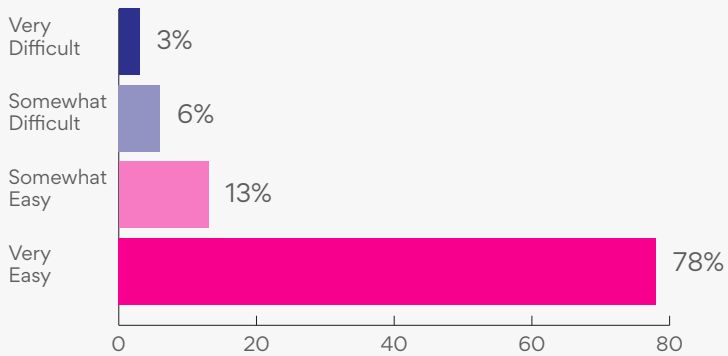
A majority of the patients surveyed were over 65 and Medicare beneficiaries, and the results indicated that they found RPM extremely beneficial. In fact, 70% of respondents believed RPM enabled them to better manage their health conditions. Further, 90% said that the addition of remote monitoring supplements their face-to-face appointments, making these visits more valuable, and in some cases, replaces the need for frequent in-person appointments altogether.

The vast majority of respondents also reported that glucometers, scales and blood pressure cuffs are easy to use at home, and more than two-thirds said they felt more connected to their provider since beginning the RPM program.

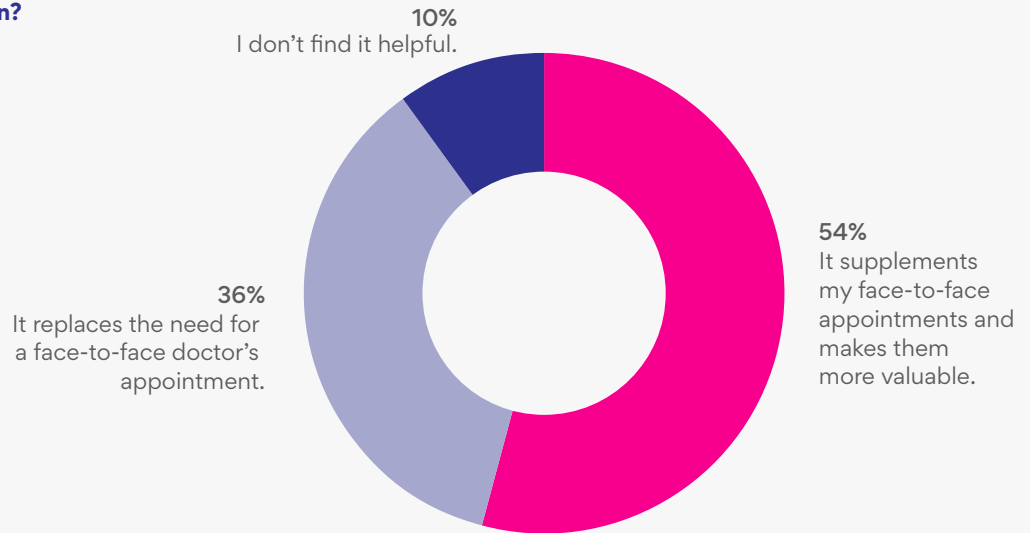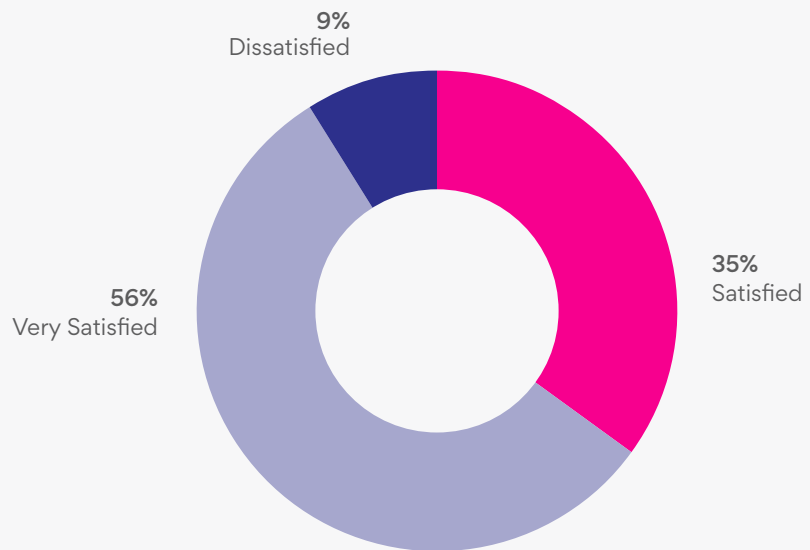**How do you feel about your ability to manage your healthcare condition?**

Worse	3%
About the Same	28%
Better	70%
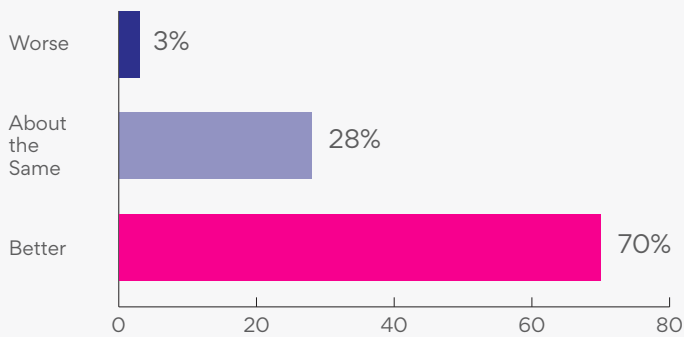
How easy are the devices to use?

Very Difficult	3%
Somewhat Difficult	6%
Somewhat Easy	13%
Very Easy	78%

How easy is it to do the number of glucose, blood pressure, and/or weight tests your doctor recommends?

Very Difficult	3%
Somewhat Difficult	6%
Somewhat Easy	28%
Very Easy	64%
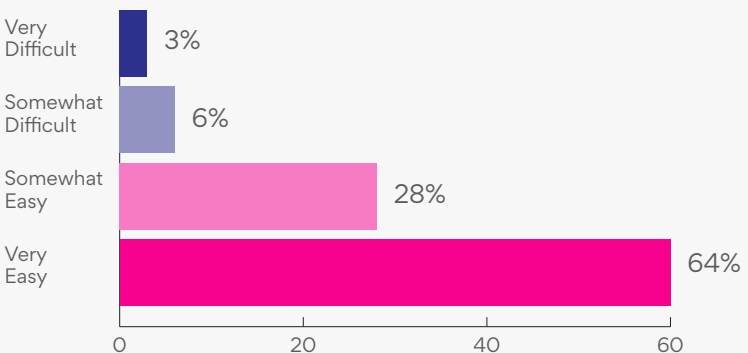
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What response best describes how you feel having your healthcare provider remotely monitor your condition?

10%
I don't find it helpful.

54%
It supplements my face-to-face appointments and makes them more valuable.

36%
It replaces the need for a face-to-face doctor's appointment.

Overall, how satisfied are you with remote monitoring?

9%
Dissatisfied

35%
Satisfied

56%
Very Satisfied

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**Provider Experience with the Rimidi Platform**

Rimidi's platform-based approach is designed to support quality improvement, workflow optimization, and patient engagement objectives all within the existing EMR workflow. Providers who use Rimidi's clinical management platform have also seen measurable success with their RPM programs.

For example, in a 12-week period, working with Desert Oasis Health Care's (DOHC's) medication management team, Rimidi demonstrated both qualitative and quantitative success in improving patient and provider experience, as well as having a measurable impact on patient outcomes – specifically lowering Hemoglobin A1C and improving LDL cholesterol in high-risk patients with Type 2 Diabetes. In DOHC's fully-capitated integrated delivery network, Rimidi demonstrated a 2.8 percentage point improvement in hemoglobin A1c in a randomized controlled study of patients with Type 2 diabetes. Studies have shown that a 1 percentage point reduction in A1C yields substantial savings, estimated at $100 per patient, per month. [7]

In retrospective review of hospitalizations with the medical group, we observed fewer acute admissions and fewer acute bed days in patients with diabetes that were using remote monitoring devices versus those without connected devices. Average acute admissions fell from 0.31 to 0.24 per patient per year; and acute bed days per patient per year fell from 0.96 to 0.65.

With over 850 alerts addressed each month, Rimidi enables DOHC's clinical teams to efficiently and proactively manage chronic disease across their high risk patient population.

Improved Hemoglobin A1c (12 Weeks)
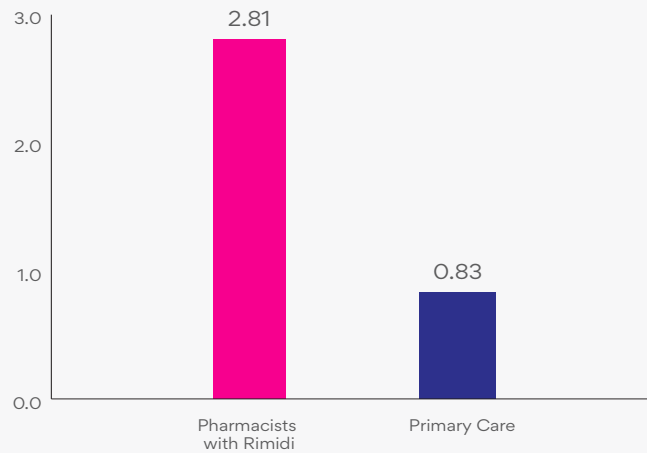
2019 Utilization for Diabetes Management Participants
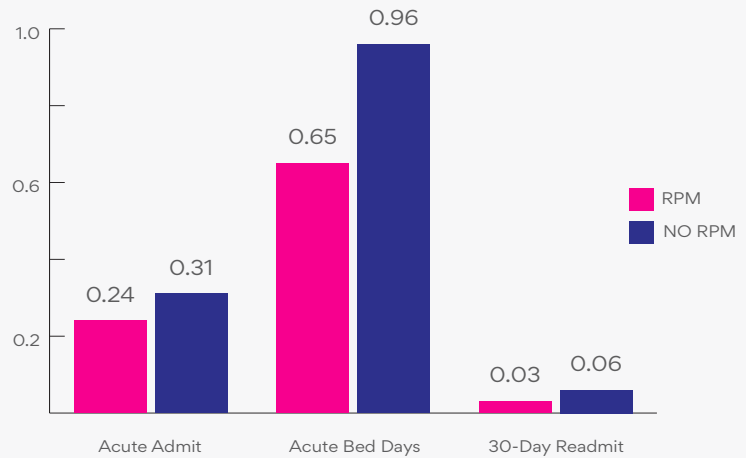
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About Rimidi

Rimidi is a cloud-based software platform that enables personalized management of health conditions across populations. Created by doctors, Rimidi avoids the disconnect in connected care by combining patient-generated health data with clinical data from the EHR to drive patient-specific clinical insights and actions. The net effect is a better health system with optimized clinical workflows that enable better decisions, better relationships, better outcomes and ultimately a better healthcare system.

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3. Buttorff C, Ruder T, Bauman M. Multiple Chronic Conditions in the United States pdf icon[PDF – 392 KB]external icon. Santa Monica, CA: Rand Corp.; 2017.

4. Centers for Medicare and Medicaid Services (March 30, 2020), Medicare IFC: Revisions in Response to the COVID-19 Public Health Emergency (CMS-1744-IFC). https://www.cms.gov/about-cms/emergency-preparedness-response-operations/current-emergencies/coronavirus-waivers

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