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USE OF SOCIAL MEDIA AND TELEHEALTH TO PREDICT PRIMARY CARE AND ADVANCE WORKFORCE RESEARCH DURING THE EARLY STAGES OF THE COVID-19 PANDEMIC

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Abstract:
Primary care is the first line of defense during a pandemic. It can assist patients manage at home, reinforce public health messaging, and pinpoint individuals who require hospital treatment. Primary care struggled to quickly adapt in order to safeguard doctors, staff, and patients during the COVID-19 outbreak and maintain patient relationships. We outline the steps primary care has to follow in a pandemic using the existing public health framework for doing so. The authors' primary care practices and networks' observed experiences are used to guide the recommended activities. During the early stages of the COVID-19 pandemic, efforts were concentrated on encouraging physical separation and urging patients who had a suspected sickness or exposure to self-quarantine. Both testing and contract tracing were not accessible. Telehealth was used to transform in-person treatment into virtual care as the epidemic progressed. By utilizing registries to connect with people who were socially vulnerable, at risk for infection, or had chronic diseases that were not under control, practices maintained contact with their patients. Most individuals with probable COVID-19 were treated by practices at home. Practices are currently getting ready to deal with the direct and indirect effects of the pandemic, including complications from COVID-19 infections, missed treatment for acute issues, insufficient prevention, uncontrolled chronic disease, mental illness, and increased social requirements. Throughout, practices suffered from severe financial strain, firing employees or sometimes shutting down when it was most required. In order to prepare for the upcoming pandemic, primary care must draw lessons from this experience. Primary care cannot be neglected by payers or policymakers in their time of need.

Keywords: *Use of social media, covid-19, pandemic, primary care*

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INTRODUCTION:

Telehealth as social media platform was used to transform in-person treatment into virtual care as the epidemic progressed. By utilizing registries to connect with people who were socially vulnerable, at risk for infection, or had chronic diseases that were not under control, practices maintained contact with their patients. Most individuals with probable COVID-19 were treated by practices at home. Practices are currently getting ready to deal with the direct and indirect effects of the pandemic, including complications from COVID-19 infections, missed treatment for acute issues, insufficient prevention, uncontrolled chronic disease, mental illness, and increased social requirements. Throughout, practices suffered from severe financial strain, firing employees or sometimes shutting down when it was most required. In order to prepare for the upcoming pandemic, primary care must draw lessons from this experience. Primary care cannot be neglected by payers or policymakers in their time of need.

The Centers for Disease Control and Prevention (CDC) of China released a plan in 2014 to deal with the pandemic of influenza. [1-3] They outline six phases: (1) examining unique influenza cases; (2) identifying enhanced potential for continued transmission; (3) the start of a pandemic wave; (4) its acceleration; (5) its slowing; and (6) planning for subsequent pandemic waves (Table 1 and Figure 1).

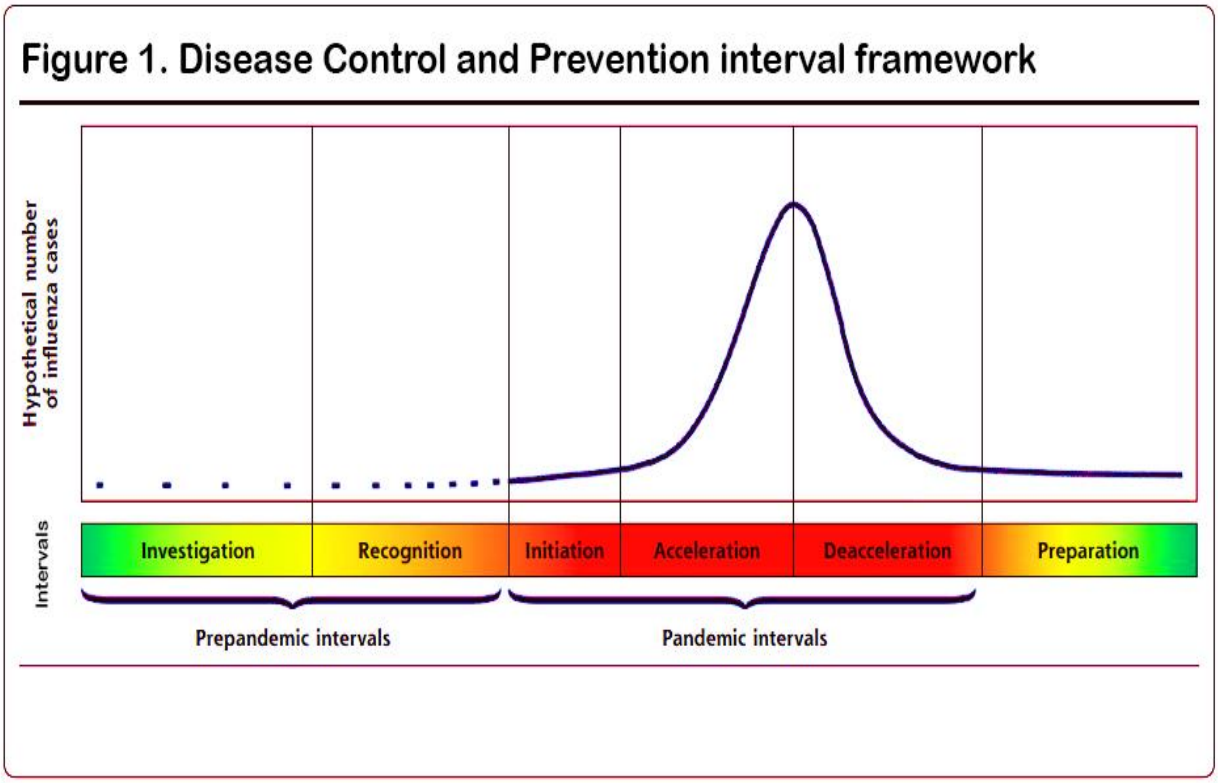
The CDC's framework is an effective public health tactic, but it does not take into account the unique requirements of primary care, the people they serve, or the communities they are a part of. Primary care, which is the most typical first point of contact with healthcare,5 is the health system's first line of defense because it can repeat important public health messages, assist patients in managing infections at home, and identify people who require hospital treatment. When done correctly, this can prevent hospitals from being overburdened and limit the spread of illness.

This article uses the CDC's pandemic paradigm to examine how primary care practices may quickly and continually reinvent themselves during a pandemic. The advice is based on what the authors' community-based primary care practices went through during the COVID-19 epidemic. The fundamental tenet of recommendations is to safeguard patients, employees, and physicians while being accessible and connected to address patients' needs.

Table 1. Primary Care Preparedness and Response to a Pandemic

Intervals	**Primary Care Experience**	**Actions**
Investigation	Primary care will continue as usual; be prepared for a potential pandemic	keep up with routine acute, chronic, wellness, mental health, and social care. Be a part of public health surveillance initiatives. Keep yourself prepared to stop virus transmission locally or globally
Recognition	Patients in sentinel communities start to contract the disease, and clinicians learn of the likelihood of a pandemic	Stringent hand washing. Patients with infectious symptoms should be separated from healthy patients by using physical barriers. Reduce the number of people waiting there. Put masks on workers and patients. After every patient encounter, clean the rooms. Switch to telephone-based care and virtual visits. Contact tracing and testing
Initiation	Infections quickly spread throughout communities, and patients are concerned about their own infection risk.	Change to full virtual care for initial contact. Only after triaging as appropriate, meet patients in person. Identify and engage people who are at risk for infection and deteriorating chronic conditions, mental health issues, or social needs by implementing proactive population care. Adopt measures to safeguard patients, employees, and medical professionals. Unless absolutely essential, keep patients away from hospitals and emergency rooms.
Acceleration	Patients put off treatment for non-infectious diseases, patients develop infection problems, and infections spread.	Continued proactive population care and virtual care. Ensure that only necessary hospital and emergency care contacts are made with patients. Systematically put testing techniques into practice.

		Establish the standards for hospitalization. Create care teams to follow up with patients in need every day or every week. Strengthen and assist the hospital care staff. For sick people who are not in hospitals, establish home hospitals For patients who choose less aggressive therapy, increase access to home palliative care.
Deceleration	Less patients become infected; hospitalized patients recover and require rehabilitation; recommence non-infectious condition treatment	help recovering patients Support the provision of home health care services. Think about new home care services or overflow recovery facilities Create a plan for resuming "regular" in-person care. To guarantee the safety of patients, physicians, and staff, keep an eye on reopening techniques.
Preparation	In addition to the heavy load of mental and emotional demands and the unmet financial and staffing needs, patients suffer from untreated and unrecognized ailments and hazards.	Enhance the availability of evidence-based assistance for harmful behaviors, mental wellbeing, and social needs. Address the negative effects of delayed or postponed care. Increase the impact of community health workers and social workers. Utilize the long-term connection between the doctor and the patient to address issues. Support important social and economic agendas. Rebuild your method



The CDC Pandemic Intervals Framework:

1. **Investigation:**
   The primary public health activity during the first interval, according to the CDC, is infection investigation.[3] The continuous provision of acute, chronic, wellness, mental, and social care in primary care is business as usual.

   Primary care can take part in public surveillance programs, alert the health department of reportable cases, keep an eye out for outbreaks, and even provide real-time electronic health record (EHR) data for monitoring in order to be ready for a potential pandemic.
   The best case scenario is that primary care can maintain ready for an epidemic, including sufficient testing materials, protective equipment for professionals and patients, and treatments for those who could get ill.
2. **Recognition:**
   This window of time is known as the heightened potential for transmission, according to the CDC.[3] Cases start to show up in sentinel communities for primary care, but for many practitioners, everything could seem normal. Offices remain open and operating as usual, but patients are starting to worry, some may start to show symptoms, and professionals are learning about a possible pandemic.

   Primary care has to take action right away. Practices encouraged physical distance during the COVID-19 epidemic by dividing healthy patients from those who had symptoms, limiting the number of patients in public spaces like waiting rooms, and spacing seats 6 feet apart.[4]
   Before and after each interaction, everyone must wash their hands to prevent any epidemic.
   After visits, rooms must be completely sanitized.
   In the event of respiratory illness pandemics, both patients and employees may wear masks within the workplace. Practices can enhance telephone-based treatment and virtual visits, postpone non-urgent consultations, and get ready for a larger incidence of infected people in the community. Testing is important. Testing should ideally be accurate and generally accessible. Primary care can determine who has to be quarantined by testing and contact tracing, which is a crucial step in slowing the development of an epidemic.[5]
3. **Initiation:**
   Confirmation of human instances and worldwide dissemination characterize this period.[3] This period actually starts with dissemination in the practice's community for primary care. Ailments are manifested by patients. Anxiety and fear spread. Patients, primary care providers, hospital employees, and hospital executives must move quickly.

   Primary care must take the lead in increasing physical distance, hand washing, and minimizing contact in order to "flatten the curve" (i.e., slow the spread and prevent the hospitals from being overburdened).[6] Leading by example and imparting these values to patients are both included in this. Converting to almost entirely virtual care is a key component. [7,8] This necessitates the use of video visits or phone calls for all first patient interactions. After triaging via virtual care, a skeleton team of physicians can see the few patients who must be seen (such as someone with an abscess to drain).
   Practices may use proactive population care to stay in touch with their patients. In pandemic, population care is different. During regular business hours, many clinics use patient registries that are driven by traditional quality standards to get in touch with patients who are past due for treatment, require certain services, or have uncontrolled problems.[9] Practices should change registry services during a pandemic to identify susceptible patients. This comprises people with infectious diseases, chronic conditions that are out of control, or social demands. Prioritizing these patients and getting in touch with them first is necessary for regular check-ins. Additionally, patients that require more active follow-up can be added to the contact list as physicians virtually observe them. These patients should get regular calls from staff, and if the patient's condition worsens, treatment should be upgraded to more virtual visits, in-person office visits, or perhaps hospitalization.
4. **Acceleration:**
   The rate of infection is steadily rising during this time.[3] Patients delay care for noninfectious diseases, more patients get seriously unwell or develop complications and require hospitalization in primary care, and more patients contract infections. This simultaneously results in higher pandemic-related needs and a decline in the requirement for regular in-person primary care.

   Primary care is required throughout this era to preserve virtual care, population care, and the aforementioned protective roles. Limiting patient interaction with hospitals is a major objective. By

doing this, patients will be shielded from pointless exposure, and the hospital will be able to concentrate on helping those in need. When a hospital's capacity is surpassed, primary care and health systems will need to collaborate on the standards for emergency evaluations, hospital admission standards, and overflow treatment. Practices that often refer their patients to hospitals will need to get ready for an increase in admissions due to infections and a decrease in noninfectious admissions. Depending on the requirements of their community, clinicians who generally offer outpatient treatment may be required to give inpatient care. For instance, it was puzzling to observe rates of typical hospital admissions sharply decline during the COVID-19 epidemic.

To treat patients who were infected with COVID-19, [10] hospitals rearranged almost all of their beds, and they also asked outpatient clinicians to assist the inpatient hospital teams.

Managing certain patients at home who would often be admitted to the hospital might reduce the strain on the hospital, safeguard patients from developing or transmitting illnesses, and potentially enhance health outcomes.[13] This "home hospital" treatment can be effectively managed by primary care. Although home hospital care has been the subject of certain studies,[11] it has not been extensively used. During a pandemic, the home hospital services could include managing less seriously ill patients with the infection, managing patients with non-infectious conditions to lower their exposure risk, and providing home hospice care for those who are ill but are ineligible for or unwilling to receive intensive care. The infrastructure used for virtual visits could enable clinicians to visit patients in their homes, assemble multidisciplinary teams as needed, intensify check-ins, provide basic remote monitoring equipment (such as blood pressure monitors or oxygen saturation monitors) and treatment equipment (such as antibiotics, painkillers, and painkillers), and deploy mobile monitoring in communities (such as mobile telco monitoring) (eg, cleaning, feeding).

5. **Deceleration:**

The rate of infection is continually dropping during this time. [3] Hospitalized individuals with life-threatening illnesses recover and leave the hospital after completing the recovery stage. They nevertheless need require assistance and rehabilitation. Primary care practices eventually switch from the virtual care systems they built during the epidemic to "regular" in-person treatment during this time.

To assist with the care of their convalescing patients, primary care practices must collaborate with nursing homes, rehabilitation facilities, and home health organizations.

Although practices frequently help with their patients' post-acute rehabilitation, they should be ready for a higher than usual amount of rehabilitation therapy. Additionally, post-infectious patients cannot be accepted by rehabilitation facilities or home health agencies due to workloads or reluctance. Patients who are healing from different ailments could feel the same way about going to rehabilitation facilities. Without a facility to receive care, patients would stay longer in the hospital, using up valuable resources, or they might be discharged home with insufficient care and support. To meet demand, some cities may need to open overflow rehabilitation facilities or increase home health care. Patients in such overflow environments may benefit greatly from primary care.

Primary care should heed the recommendations of public health authorities when deciding whether to reopen. A gradual switch from virtual to in-person treatment will be made throughout the reopening. The first focus should be on providing treatment that is equally effective virtually and care for those who are more at risk. Primary care will need to keep an eye on the wellbeing of their physicians, employees, patients, and community at all times. The reopening procedure might need to be changed if higher infection rates are seen in any of these populations.

6. **Preparation:**

This period represents a return to normal in terms of public health. According to the CDC, the period is characterized by modest infection activity with the potential for outbreaks in specific places. As public health and other stakeholders keep an eye out for the next epidemic, the preparedness interval circles back to the investigation interval.[3] For primary care, this time of "picking up the pieces and putting them back together" continues to be quite difficult. Primary care will need to handle the effects of the epidemic before thinking about planning for the future. Premature deaths, lengthy recovery times for infected people, the passing of loved ones as a result of COVID-19, and infection sequelae are only a few of the direct effects. The indirect effects, which may be even more severe, include missed opportunities for acute problem treatment,

insufficient preventive care, uncontrolled chronic disease, domestic violence, new onset or worsening depression, anxiety, alcohol and substance abuse, and new or worsening financial difficulties, unstable housing, and food insecurity. Health inequalities will get worse as a result of these demands. [12] We observed higher infection rates and consequences during the COVID-19 pandemic among marginalized populations16 who had to work and were unable to physically separate themselves. [13] Additionally, the underprivileged experienced higher monetary loss and social hardship.
Many towns will likely experience financial hardship (and maybe bankruptcy) as a result of COVID-19 for many years to come.

Pent-up demand and negative effects of postponed or delayed care must be addressed in primary care. This entails assuring access to care, increasing personnel and hours, and identifying people who require past-due care. Primary care must also assist patients in modifying their health-related habits, attending to their mental health requirements, and reducing social dangers. These are incredibly challenging challenges that require substantial care over time from community-based and social service agencies, even when not trying to recover from a pandemic. These programs can be experiencing difficulties due to rising demand and inadequate infrastructure. To provide these fundamental patient requirements, strong clinical-community relationships will be required.[15] When it comes to mental health, primary care practices may think about expanding or building integrated mental health services.[14]

DISCUSSION:

The sooner public health and primary care can recognize each period throughout a pandemic, the sooner they can change the way treatment is provided to patients and communities. One major issue is that while illnesses are frequent, pandemics with the morbidity and death of COVID-19 occur infrequently. To stop exponential spread, monitoring, early detection, and planning for quick, early intervention are crucial.

We've laid up a plan for how primary care can change during a pandemic (Table 1). Primary care will need to continue its current efforts throughout the current interval while adding additional actions for the following interval as the epidemic spreads. Intervals will occur in many societies at various periods and to diverse degrees of severity. Some periods occur concurrently, while others recur. This means that, in light of regional circumstances and demands, local customization is required. Public health, primary care, specialized care, hospital systems, palliative care, mental health, informatics, rehabilitation facilities, home health agencies, community service providers, insurers, and legislators will need to work together in every community to combat the epidemic.

An efficient pandemic response faces various obstacles. As the COVID-19 Pandemic began, a large portion of the required infrastructure had not yet been properly created; for example, the informatics system was not sufficient for virtual care, clinician communication, or home hospital care. Groups that needed to collaborate worked separately. Underfunded and understaffed were primary care, mental health, community-based organizations, and social services. The innovations used to overcome these obstacles during the COVID-19 epidemic are still being tested.

Uncertainties should be expected with each new epidemic. We won't be able to detect and treat the illness since we won't be aware of its normal course. As a result, we won't have the goods we need. We lacked test equipment (swabs, medium, reagents), personal protective equipment (PPE), hospital beds, and ventilators during COVID-19. The lack of technology and unknowns made it difficult to execute basic care strategies to address each interval.

Adding to these problems, primary care is not \sa united organization that can act collectively. The populations these practices serve as well as their sizes, organizational structures, and ownership and economic models vary widely. This variation affects each practice's capacity for pandemic adaptation. Finally, primary care practices are also experiencing a financial difficulty. Redesigning care will cost a lot of money. Even worse, the majority of primary care offices saw a greater than 50% decrease in office visits during the COVID-19 epidemic. Because of this, most practices furloughed or fired a sizable section of their workforce—exactly when primary care was most required.[16] Practices could experience financial pressure to "open back up" for business as usual before they should in order to make up losses and go back to normal.

CONCLUSION:

Our healthcare system's first line of defense during a pandemic is primary care. Primary care can safeguard individuals and communities when it's operating properly. We learned crucial lessons from the COVID-19 pandemic about how primary care can respond to a

pandemic. The delivery of virtual care and population health management both saw significant advancements. Primary care frequently made personal sacrifices in order to take care of its patients and the community. [16] Policy makers and payers cannot fail primary care and must make sure that funding and rules allow primary care to do what it does best—care for patients. Primary care of the future must learn from this experience and be prepared for the next pandemic.

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