Only 3% mentioned just the harms, and only 1 in 3 stories presented both. While pretty much every story presented at least some benefits, of the 37% of stories that mentioned harms at all, more than a quarter of them downplayed their seriousness. Overdiagnosis, a major harm of early detection testing, was mentioned in only 5% of the stories.

Evidence has long suggested that screening for disease in adults with no symptoms is associated with reduced mortality rates far more rarely than many assume.[2] Because of this, the US Preventive Services Task Force (USPSTF) recommends against many screenings. Routine mammography serves as a good example: The USPSTF does not recommend routine mammography for women between the ages of 40 and 49 years because evidence suggests that the risks outweigh the benefits.[3] The harms include false-positive results, unnecessary biopsies, and overdiagnosis and treatment of breast cancer that would not have become a health threat if left undetected. Mammography Saves Lives, a coalition of medical associations representing breast cancer care experts, is a rather misleading slogan, given that mammograms have not been proved to reduce mortality. A 2012 analysis[4] reported that screening has not lowered the rate of advanced cancer, concluding that the risk of becoming a patient with breast cancer can be reduced by one-third simply by avoiding screening mammography.

None of this is to say that mammograms are not important in the detection of breast cancer. They absolutely are. But they have downsides as well as upsides, and we do not serve patients and the public well by focusing only on the latter or overstating the former.

False-positive results, a predictable consequence of the indiscriminate ordering of tests, cause real harm. It is often difficult for patients and physicians to ignore an abnormal result, so the more likely path is more testing, which costs more money, causes more psychological stress, and may even cause physical harm via related, unnecessary procedures.

Owing in part to the biased news they hear about screening tests, patients often overestimate how much risk reduction is associated with them and generally opt to receive them.[5] This high-benefit, low-harm perception is often the opposite of reality. O'Keeffe and colleagues' study[1] provides evidence of how news stories contribute to this problem. This is significant because, as the authors point out, stories about health and medicine are a substantial portion of the news.

Such biases are not confined to stories about screening, unfortunately. This unrealistic coverage of risks and benefits is in line with previous research on media representation[6] and can have serious downstream effects. Biases can be influenced by financial interests. This study[1] also showed that more than half of the examined news stories cited commenters with a conflict of interest. Only about a tenth of those explicitly noted those conflicts so that readers might be aware of them. It would be better to avoid them altogether.

The media can be an excellent public health tool. We know that news coverage can influence anything from individual health behaviors to health care practice and policy, and we know that the associations can be positive.[7] An open discussion with journalists on the data behind early screening tests, specifically on the need to focus on a risk-to-benefit ratio, may assist in disseminating a more informed message on the use of such interventions and more. Encouraging disclosure or avoidance of conflicts of interest may help to increase public trust in the reliability of news stories on public health.

To optimally aid medical decision-making and maximize public health benefit, we should work to make patient expectations realistic rather than overly optimistic. Few interventions are without harm; informing the public of that fact in general would go a long way to tempering enthusiasm for questionable medical treatment. Including clear information about harms and helping people to understand how to weigh benefits and harms in making individual medical decisions would be of immense value to public health.

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LESS IS MORE

Assessment of Outpatient Dispensing of Products Proposed for Treatment or Prevention of COVID-19 by US Retail Pharmacies During the Pandemic

Prior to November 2020, there were no US Food and Drug Administration-authorized products for outpatient coronavirus disease 2019 (COVID-19) prevention or treatment. There

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Table. Estimated Increases in Dispensed Retail Prescriptions for Selected Products Proposed to Treat or Prevent COVID-19—United States, March-December 2020 vs 2019[a]

Treatment[b]	Baseline No. of prescriptions dispensed per week[c]	Peak week, 2020 (end date)[d]	Peak No. of prescriptions dispensed per week, 2020[d]	No. of prescriptions dispensed above baseline in peak week, 2020	Increase in prescriptions dispensed above baseline in peak week, 2020, %	Weeks >50% above baseline, 2020, No.
Ivermectin	3589	Dec 18, 2020	24 528	20 939	583.4	12
Chloroquine	499	Mar 20, 2020	2966	2467	494.4	2
Zinc[e]	1810	Dec 11, 2020	9110	7300	403.3	32
Hydroxychloroquine	93 640	Mar 20, 2020	267 308	173 668	185.5	4
Vitamin C[f]	9331	Dec 11, 2020	21 020	11 689	125.3	30
Dexamethasone	57 178	Dec 18, 2020	123 829	66 651	116.6	6
Lopinavir-ritonavir	492	Mar 20, 2020	954	462	93.8	1
Famotidine[g]	253 684	Dec 18, 2020	365 699	112 015	44.2	0
Tocilizumab	293	Dec 4, 2020	400	107	36.4	0
Sarilumab	123	Aug 14, 2020	154	31	25.2	0
Janus kinase inhibitors	2171	Dec 4, 2020	2960	789	36.4	0
Tyrosine kinase inhibitors	1770	Mar 20, 2020	1966	196	11.1	0
Azithromycin[h]	860 605	Mar 20, 2020	953 074	92 469	10.7	0
Colchicine	54 564	Mar 20, 2020	60 294	5730	10.5	0
Vitamin D[i]	568 481	Mar 20, 2020	624 726	56 245	9.9	0
Interferons	703	Mar 20, 2020	742	39	5.5	0
Nitazoxanide	577	Mar 20, 2020	593	16	2.8	0

Abbreviation: COVID-19, coronavirus disease 2019.

[a] Nationally projected data for prescriptions dispensed from US retail pharmacies based on IQVIA National Prescription Audit Weekly; sample included 48 900 US retail pharmacies, representing over 3.5 billion transactions annually and covering 92% of retail prescription activity. Data included prescriptions and refills paid for by commercial third parties, Medicaid, Medicare Part D, or cash.

[b] Systemic dosage forms only.

[c] Weekly average of the 52-week period preceding the declaration of a national emergency due to COVID-19, March 13, 2020; exceptions are famotidine and azithromycin.

[d] Peak estimate in the period after national emergency declaration on March 13, 2020, to the most recent week available at analysis (ending December 18, 2020).

[e] Zinc (single-ingredient product) dispensed by a pharmacy; does not include over-the-counter sales.

[f] Ascorbic acid (single-ingredient product) dispensed by a pharmacy; does not include over-the-counter sales.

[g] Famotidine dispensed by a pharmacy; does not include over-the-counter sales. Baseline used was the weekly average of the 26-week period (rather than the 52-week period) preceding the declaration of a national emergency due to COVID-19, as increased dispensing of famotidine was observed after US Food and Drug Administration warning of impurities in ranitidine in September 2019.

[h] Baseline used was the week ending March 22, 2019, because azithromycin prescribing has significant seasonal variation.

[i] Includes ergocalciferol and calciferol (single-ingredient products) dispensed by a pharmacy; does not include over-the-counter sales.

have been surges in prescriptions for products (such as hydroxychloroquine[1]) proposed to treat COVID-19, but only approved for other conditions. We sought to determine if outpatient retail dispensing frequency of proposed treatments for COVID-19 increased since the March 13, 2020, declaration of a national emergency due to COVID-19.

Methods | We used IQVIA National Prescription Audit Weekly nationally projected data for prescriptions dispensed from US retail pharmacies for 17 systemically administered potential treatments selected from the National Institutes of Health *COVID-19 Treatment Guidelines*,[2] and the American Society of Health-System Pharmacists *Assessment of Evidence for COVID-19-Related Treatments*.[3] The National Prescription Audit Weekly aggregates prescription data from 48 900 retail pharmacies across the US, representing approximately 92% of all retail prescription activity, and uses a proprietary algorithm to project national-level estimates of dispensed prescriptions. We compared weekly numbers of dispensed prescriptions in the period March 14 to December 18, 2020, to prepandemic baselines. For treatments with dispensed prescriptions of 50% or more above baseline, we used piecewise (segmented) regression[4] to identify inflection points and calculate average changes in weekly dispensing for the 52-week period ending December 18, 2020. Analyses were conducted as part of public health surveillance activities and determined exempt from human subjects approval by the US Centers for Disease Control and Prevention (CDC). This report complies with the STROBE reporting guideline for cross-sectional studies.

Results | Peak dispensing occurred the week ending March 20, 2020, for 9 of 17 proposed treatments (**Table**). Estimates of weekly national retail dispensing increased 50% or more above prepandemic baselines for ivermectin, chloroquine, zinc, hydroxychloroquine, vitamin C, dexamethasone, and lopinavir-ritonavir.

Based on segmented regression, dispensing of hydroxychloroquine peaked the week ending March 20, 2020 (**Figure**, A). In 2020, ivermectin dispensing peaked the week ending July 24 and rose again through December 18 (Figure, B). In

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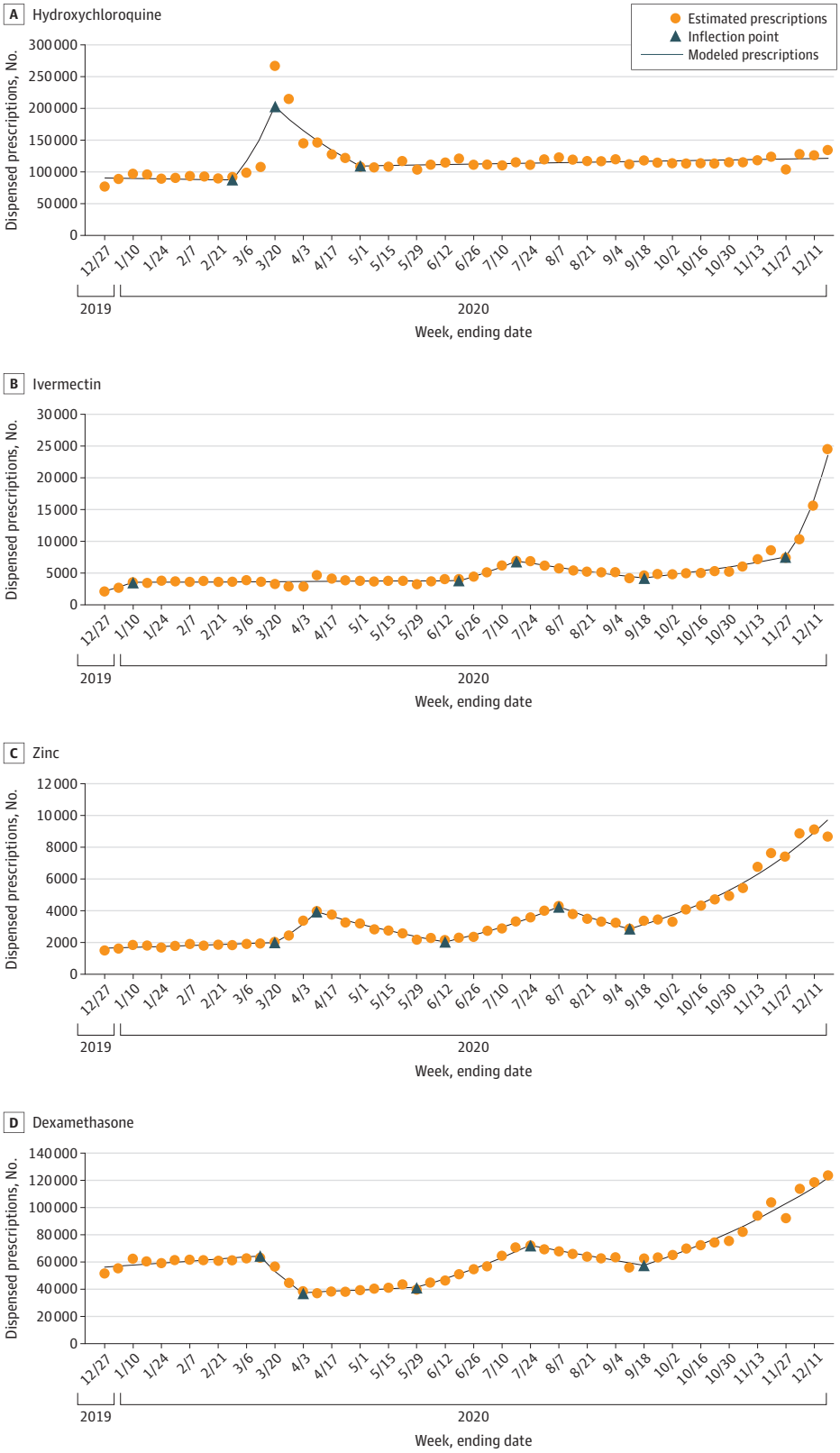
Figure. Retail Dispensing Trends for Selected Products Proposed for Treatment or Prevention of COVID-19, December 21, 2019-December 18, 2020



COVID-19 indicates coronavirus disease 2019. Projected weekly numbers of prescriptions dispensed from US retail pharmacies in the 52-week period December 21, 2019, to December 18, 2020. Data are from IQVIA National Prescription Audit Weekly, accessed on December 28, 2020. National estimates of weekly prescriptions indicated by scatter plot; modeled projections indicated by a solid line; and inflection points indicated by a triangle.

A, Four hydroxychloroquine segments were identified, with average percentage change as follows: −0.3% (95% CI, −1.9% to 1.2%), 32.5 (95% CI, 11.9 to 56.9), −9.8% (95% CI, −13.2% to −6.4%), and 0.3% (95% CI, 0.1% to 0.5%). B, Six ivermectin segments were identified, with average percentage change as follows: 27.0% (95% CI, −4.2% to 68.4%), 0.4% (95% CI, −0.3% to 1.0%), 16.0% (95% CI, 0.8% to 33.6%), −5.3% (95% CI, −8.2% to −2.3%), 5.8% (95% CI, 3.1% to 8.6%), and 46.6% (95% CI, 27.3% to 68.8%). C, Six zinc segments were identified, with average percentage change as follows: 1.7% (95% CI, 0.7% to 2.7%), 25.6% (95% CI, 7.0% 47.5%), −7.0% (95% CI, −8.7% to −5.4%), 9.7% (95% CI, 7.3% to 12.0%), −7.7% (95% CI, −12.3% to −2.9%), and 9.2% (95% CI, 8.3% to 10.0%). D, Six dexamethasone segments were identified, with average percentage change as follows: 1.3% (95% CI, 0.5% to 2.1%), −16.6% (95% CI, −26.0% to −6.0%), 1.3% (95% CI, −0.3% to 2.9%), 7.3% (95% CI, 5.6% to 9.0%), −2.8% (95% CI, −4.3% to −1.2%), and 5.9% (95% CI, 5.2% to 6.6%).

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2020, zinc dispensing peaked the weeks ending April 10 and August 7, and rose again through December 11 (Figure, C). In 2020, dexamethasone dispensing decreased starting the week ending March 13, reaching a nadir the week ending April 3, before increasing to a peak 25% above baseline the week ending July 24, and rising over 50% above baseline through December 18 (Figure, D).

Discussion | After the national emergency declaration of March 2020, retail dispensing of 7 proposed COVID-19 treatment products significantly increased above prepandemic baselines.

Single peaks in hydroxychloroquine, chloroquine, and lopinavir-ritonavir dispensing in March to April, 2020, coincided with increases in cases, and did not recur as evidence of lack of efficacy in treating or preventing COVID-19 accumulated. Although the National Institutes of Health COVID-19 Treatment Guidelines Panel has not recommended outpatient use of ivermectin, zinc, or dexamethasone for treatment or prevention of COVID-19, increased dispensing of each of these products has coincided with a national increase in COVID-19 cases beginning in July 2020 and another national increase in the fall which continued into December 2020.[5]

Limitations of these data include lack of prescribing indication and incomplete capture of products purchased over the counter (eg, famotidine, vitamin C, zinc). These trends in prescribing practices suggest that clinicians consider the most recent recommendations from the National Institutes of Health and the US Food and Drug Administration before prescribing unproven therapies for COVID-19 to outpatients outside of clinical trials. With availability of newly authorized treatments and COVID-19 vaccines,[6] it is particularly important to emphasize to patients the benefits of therapies demonstrated in randomized clinical trials compared with medications with uncertain benefits. National monitoring of outpatient dispensing of proposed products for treatment of COVID-19 should continue, particularly for medications with risk for serious adverse events (eg, hydroxychloroquine, dexamethasone) and without established efficacy for COVID-19 treatment in outpatients (eg, ivermectin).

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Drafting of the manuscript: Geller.
Critical revision of the manuscript for important intellectual content: All authors.
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Differences in Administration of Influenza Vaccine to Elderly Adults by Physician Sex, 2006-2016

Female physicians spend more time with patients during outpatient visits than their male counterparts.[1] Some of this difference may be due to differences by physician sex in time spent on patient counseling,[2] including discussions about vaccinations, such as influenza vaccination. The influenza vaccination rate among minority patients, particularly Black patients, is significantly lower than among White patients,[3] and more time may be needed with minority patients to discuss vaccine concerns. Using nationwide Medicare data, this study estimated differences in influenza vaccination rates by patient race and sex between patients of female and male physicians working in the same outpatient practice.

Supplemental content

Methods | This study used 2006 through 2016 claims data for a 20% sample of traditional Medicare beneficiaries 65 years and older. Patients were assigned to an outpatient physician each year according to previously used algorithms based on plurality of outpatient evaluation and management visits.[4] Because influenza vaccinations were studied, each year was defined as spanning from September to the following August. Beneficiaries continually enrolled during a year were included. This study examined the binary outcome of influenza vaccination, defined by claims with a corresponding Current Procedural Terminology (CPT) code (eTable 1 in the Supplement). A total of 8 patient race-sex subgroups were

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