connections.” To study how they drive an epidemic, the researchers dusted 3 species of bats hibernating in 8 abandoned mines in Michigan and Wisconsin. Over 5 winters they documented how the bats mingled within and outside of their own species as well as groups that hibernated together. By tracking their dust marks, which served as surrogates of the bats’ interactions, the researchers analyzed how the bats’ interactions might transmit white-nose syndrome, a fungal infection that has killed ~6.7 million bats in North America since 2006.

Dust-spot patterns observed before any bats were infected suggested that the fungus would spread rapidly in some species but not others. When the fungus arrived, that’s what happened. In the first year that infections occurred, the mean prevalence was 84% in 2 species but below 25% in another. Analysis of the dust spots showed that transmission rates were better explained by the total number of contacts among bats, especially their extensive cryptic connections, than by contacts within species or hibernating groups.

“Cryptic connections not only link social groups within species but also create bridges among species, resulting in highly connected communities and explosive epidemics,” such as the 2014 Ebola epidemic in West Africa and Nipah virus transmission in Bangladesh in 2004, the authors wrote.

**Birds as a Bioreactor**

Researchers in the United Kingdom reported in *BMC Biotechnology* that they’ve genetically modified chickens to produce eggs containing human proteins that could aid in developing cost-effective therapeutic antibodies.

The investigators focused on 2 proteins: human interferon-α 2a, a cytokine used to treat hepatitis and various cancers, and colony-stimulating factor 1 (CSF1), a cytokine involved in macrophage differentiation, proliferation, and function that’s considered a therapeutic candidate in regenerative medicine. They used lentivirus vectors to create lines of transgenic hens that produced eggs containing human interferon-α 2a as well as human and pig versions of CSF1.

The egg-derived proteins exhibited purity and bioactivity equal to or better than those generated by traditional cell culture or *Escherichia coli* systems. The hens experienced no ill effects.

Traditional therapeutic protein production methods—including those in milk from transgenic sheep, goats, and cows—are often expensive, complex, or can cause adverse effects in the animals involved, according to the investigators.

However, chickens’ upkeep is relatively inexpensive, they reproduce quickly, and their eggs’ protein yield is high—an average-size egg contains 3.5 g of protein per egg white. Given the demand for protein-based therapeutics and their significant cost, the investigators wrote that their research “could lead to more affordable treatments and wider markets, including in developing countries and for animal health applications.”

**Note:** Source references are available through embedded hyperlinks in the article text online.

**The JAMA Forum**

**Democrats Ponder Options: Medicare for All, Medicare for More, or Strengthening the ACA**

Gail Wilensky, PhD

How far the country—or at least the Democratic Party—has shifted “left” over the past decade is reflected in the increasing attention being given to proposals for “Medicare for all.” Although the specifics vary with individual proponents, Medicare for all is a single-payer system that would have been unimaginable as the mantra for Democrats running for president a decade ago. All of the 20 or so Democrats who are potentially seeking their party’s nomination in 2020 have embraced some form of a Medicare-for-all or other type of universal coverage program—although sometimes it depends on which of their positions is being considered.

**Where Do Candidates Stand?**

The difficulty of knowing where some of the Democratic candidates actually stand is illustrated by the varied stances taken by Beto O’Rourke. In a 2017 Facebook post, he wrote that the country needs a single-payer health system but backed off that position during his Senate race against Sen Ted Cruz (R, Texas), when he called for achieving universal coverage but without any specifics about how to get there. In mid-March, he indicated he supports letting people buy into Medicare and likes a Medicare for America bill introduced by Reps Jan Schakowsky (D, Illinois) and Rosa DeLauro (D, Connecticut) which leans toward the “Medicare for more” camp as opposed to Medicare for all.

This legislation would expand government-funded insurance, while keeping employer-sponsored insurance plans. It would also repeal the federal tax cut from 2017, reinstating deductions for state and local tax deduction and reducing the standard deduction. It has a key twist in it: it would enroll newborns in a government health plan, which would eventually result in a Medicare-for-all world. But because the bill would retain private insurance, at least for the near-term, it is shunned by the Democratic party’s progressive wing.
View of Progressive Caucus

There is little question about where the Democratic Party’s Congressional Progressive Caucus stands. Rep Pramila Jayapal (D, Washington) who cochairs the caucus, introduced a bill with sponsorship from 100 progressives in the House. Her bill provides coverage-for-all health care (including long-term care and dental care) and has no premiums, deductibles, or copayments, features similar to those in a bill proposed by Sen Bernie Sanders (I, Vermont) in 2017. (Sanders, who caucuses with the Democrats, has just unveiled a new version of his Medicare-for-all plan, which also includes coverage for long-term care services.) Jayapal’s bill has no estimated cost attached to it, and because there is no existing universal health care system in any other country that is structured like this, it is difficult to known how much it might cost or how challenging it might be to implement. Whether individuals would be better off relative to their current positions depends on the kind of coverage they currently have, how much it costs them, and how much they spend outside of their insurance coverage.

It seems likely that Rep Nancy Pelosi (D, California) as the newly elected Speaker of the House, would not want to put moderate freshmen who were elected in the 2018 election in a difficult position of having to vote on a Medicare-for-all bill. Pelosi believes the country can get to universal coverage by building on the Affordable Care Act (ACA). Her position is that extending the ACA would be far less disruptive and could provide universal coverage at a more manageable cost than the Medicare-for-all proposals.

Other centrist Democrats, especially those from swing districts that Trump won in 2016, also favor strengthening the ACA over Medicare-for-all legislation. This includes promoting state-based reinsurance programs that help people pay large insurance claims, which would reduce exchange plan premiums; reducing out-of-pocket costs for prescription drugs; eliminating the short-term limited duration health plans that have been permitted by the Trump administration; and letting people buy into Medicare after the age of 50 or 55 years.

Public Support

The position of the public on health care coverage, at least as shown in some of the polling, can easily lead politicians astray. As usual, it depends on exactly how the question is asked and how much additional explanatory information is provided. According to a January 2019 Kaiser Family Foundation poll, 56% of respondents somewhat or strongly favor Medicare-for-all legislation, although only 37% support Medicare-for-all legislation if it means eliminating private insurance—which it does, eventually if not immediately.

Interestingly, most US consumers believe their own coverage wouldn’t be affected under Medicare-for-all legislation. Some politicians seem to have little recollection of how much push-back occurred when the ACA forced individuals to buy different individual insurance, either because their insurance didn’t meet ACA standards or because the insurance companies stopped making it available after the ACA was fully implemented. Because some individuals had been satisfied with their existing individual insurance and were getting small or no subsidies under the ACA, President Obama’s promise to the public that “if you like your insurance, you can keep your insurance” (and “if you like your physician, you can keep your physician”) came back to haunt him.

Public support for Medicare-for-all legislation also drops if they hear any suggestion that tax increases would be needed to support the legislation. As I explained above, estimating whether particular individuals would be better off with Medicare-for-all legislation is complicated because it depends on the coverage they currently have and who pays for it. The issues the public remains focused on are making sure that people with preexisting conditions are protected and that prescription drug costs are lowered. Those issues have been important for some time, as Republicans found out when they introduced various versions of legislation to “repeal and replace” the ACA.

There has been some speculation that the promotion of Medicare for all is really a strategy to help put in place a public option—a government program—an option that moderate Democrats forced their party to drop when the ACA was being drafted. That might be the outcome of the current flirtation with Medicare-for-all legislation, but it seems unlikely to me that it is actually their strategy. If it is, it’s a very clever and Machiavellian one, indeed.

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