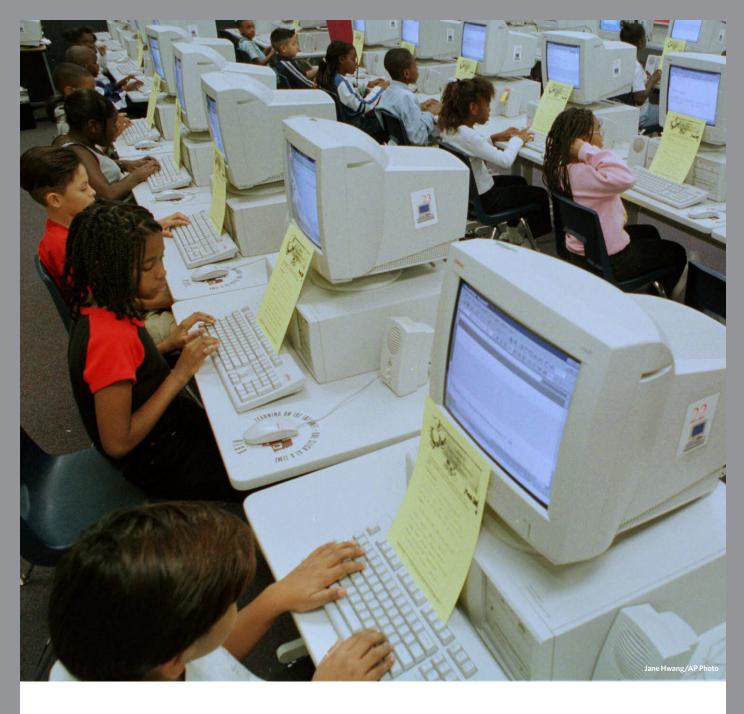
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The Pew Charitable Trusts The June 1 of the Pew Charitable Trusts The Pew Charitable Trusts





TIME CAPSULE



In 1999, The Pew Charitable Trusts created the Pew Internet & American Life Project, which tracked the evolution of the internet using surveys and qualitative research. Its early work focused on two research questions: Who was using the internet, and for what purpose? And how did people's internet use affect their families, communities, health, educational pursuits, politics, and workplace activities? The project is now part of the Pew Research Center and continues its in-depth look at how the internet is helping transform society today with studies that include how Americans used internet during the pandemic; the digital divide between urban, suburban, and rural regions; and people's views of social media organizations.

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Cover: A rendering of the Robert L.B. Tobin Land Bridge, which provides footpaths for the safe passage of people and animals over a busy highway in San Antonio, Texas. Courtesy of the Phil Hardberger Park Conservancy/
Stimson Landscape Architects



The Pew Charitable Trusts is a public charity driven by the power of knowledge to solve today's most challenging problems. Working with partners and donors, Pew conducts fact-based research and rigorous analysis to improve public policy, inform the public, and invigorate civic life.

Change for the Good



It can be difficult to measure change during challenging years such as 2021, and to know whether we came out better than before. We need only to look at the ongoing threat of COVID-19 and the millions of lives lost, or read about ongoing political debates that seem entrenched, or talk to family and friends who are struggling economically, to wonder whether we lost more than we gained.

Yet there was progress as well. Despite new virus variants, vaccination rates are increasing. Not as quickly as many of us would like, but businesses and organizations are making plans to reopen their workplaces. And throughout all these difficulties, there are examples of leaders at the federal, state, and local levels working in bipartisan ways with data to drive thoughtful policy improvements.

I'm happy and proud to note that Pew's expertise, and the support of our philanthropic partners, has helped many of those efforts. Our evidence-based research and advocacy helped to shape some of the policy advances in the bipartisan Infrastructure Investment and Jobs Act, which became law in November. The law invests \$65 billion to expand access to high-speed internet by empowering state and local governments to collect data, build partnerships, and follow best practices. Measures to support those officials closest to the problem reflect years of research by Pew and others that finds that funding alone cannot bridge the digital divide.

Similarly, Pew relied on data showing that society saves \$6 for every \$1 invested in disaster mitigation to advocate that the infrastructure bill boost funding for research focused on making communities more resilient to floods and other natural disasters. We also worked with state leaders and partners to ensure that the act addressed another serious concern: the vehicle collisions with animals that injure or kill tens of thousands of Americans each year. The infrastructure legislation includes \$350 million dedicated to building wildlife corridors that allow animals to cross highways unimpeded, saving the lives of the animals—and people. In this issue of *Trust*, you can read about these and other data-driven accomplishments—on topics from payday loans to public safety—that marked significant changes for good in 2021.

Looking back can help us measure progress. But finding a path to future success is always our priority—often in partnership with other organizations. That's what we're doing to help address the global health threat of antibiotic resistance. A recent study by Pew and the Centers for Disease Control and Prevention shows that 1 in 3 antibiotics prescribed at doctor's offices and other outpatient settings is unnecessary. The problem persists in hospitals too. This overprescribing of antibiotics is creating drug-resistant superbugs—which, as you'll read in this issue, the United Nations warns could cause 10 million deaths a year worldwide by 2050.

To help address this challenge, Pew works for the development of stewardship programs to make sure that antibiotics are the right drugs prescribed at the right dose for the right duration of time. We're also partnering with CARB-X, a global nonprofit, to spur development of new antibacterial therapies. This is critical, because preventing the overuse of current antibiotics is only half the problem. The other half is creating incentives for pharmaceutical companies to develop new antibiotics. As Kathy Talkington, who directs Pew's public health programs, explains, development of a new antibiotic can cost \$1.3 billion over 10 to 15 years for a drug that "would ideally be used only when absolutely necessary and in the smallest dose possible." That leaves drug companies with little incentive to create new ones. So that's why Pew also supports passage of the PASTEUR Act—federal legislation that would provide financial incentives to drugmakers to ensure that companies receive a sufficient return on investment while minimizing pressure to sell more than is necessary.

We understand the threat of antibiotic resistance. Other challenges come from a simple lack of understanding one another, including how religion and nationhood can be central to a person's identity. In partnership with the John Templeton Foundation, the Pew Research Center studied this issue in one of the most populous and religiously diverse countries in the world: India. It was the largest single-country survey the Center has conducted outside the United States. Among its many findings—based on face-to-face interviews with almost 30,000 adult Indians speaking 17 languages—is that religious tolerance is core to India's national identity and what it means to be "truly Indian."

Neha Sahgal, the Center's associate director of research, explains: "For Indians, being tolerant of others and valuing tolerance is not antithetical to wanting to live a religiously segregated life." This tolerant-but-separate model of pluralism is in sharp contrast to the melting pot model that has long characterized how most Americans think of pluralism. Our story, "A Tangle of Tolerance and Segregation," details the thought-provoking findings of the Center's study of India and the many ways in which the nation's numerous cultures and faiths live both separately and side by side.

Although 2021 did not bring an end to the pandemic or many other challenges, it did show that even in a disrupted and evolving America, we can make change for the good. Finding common ground, built on nonpartisan analysis and data, helps us find workable solutions for even our toughest problems and puts us on a path to even greater success.

Susan K. Urahn, President and CEO

Trust

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THE BIG PICTURE

Violinist Randall Mitsuo Goosby performs in "Cycles of My Being," a song cycle that explores what it means to be a Black man in America today, for Opera Philadelphia in 2021. The performance also appears on Opera Philadelphia's streaming channel, which launched last fall with classic and new works to engage diverse audiences and artists and broaden the appreciation of opera. Opera Philadelphia received a grant from the Pew Center for Arts & Heritage to help recover from the effects of the COVID-19 pandemic.



NOTEWORTHY



Atlantic bluefin tuna circle a school of herring as they feed in the North Sea off Norway. Marko Steffensen/BluePlanetArchive

Big Wins for Tuna and Sharks

BY JOHN BRILEY

Worldwide, tuna fisheries worth tens of billions of dollars face a slew of threats, from overfishing and illegal fishing to the incidental catch of nontarget species, which often throws ecosystems out of balance. Fortunately, fisheries managers are starting to respond: At its annual meeting in November, the International Commission for the Conservation of Atlantic Tunas (ICCAT), the world's largest regional fishery management organization, approved a slate of significant measures to protect tuna and sharks, and address illegal fishing.

Overseeing a \$5.4 billion fishery in the Atlantic Ocean and Mediterranean Sea, ICCAT adopted an innovative management approach for northern albacore tuna called a harvest strategy, which requires governments to agree on a long-term set of rules that automatically take effect based on a fish population's status. For example, if a population drops below a pre-agreed threshold, this triggers a reduction in catch quotas. The commission also committed to move toward harvest strategies for bluefin tuna, the world's most commercially valuable fish, next year.

Further, despite opposition from the longline and recreational tuna fishing industries, ICCAT agreed to a two-year ban on the taking of endangered north Atlantic shortfin make sharks, including those caught incidentally during fishing for other species. Fishing for shortfin make could resume in 2024 but only if their

total mortality from the previous year has not exceeded 250 metric tons, an amount supported by science and far less than is allowed under current practice. Like many sharks, shortfin makos are apex predators whose presence helps marine ecosystems function as they have for millennia, and protecting them is good for ocean health and fisheries.

And in a major step to combat illegal fishing, ICCAT adopted stronger controls on the transfer of fish between vessels in ports and at sea—a practice known as transshipment that historically has been poorly regulated, with ample loopholes for illicit fishers to move their catch to market. The commission also approved a requirement that ICCAT-authorized vessels have an International Maritime Organization number, a unique identifier that makes it easier for managers, authorities, and wholesale seafood buyers to trace catch. Lastly, the commission will now require that at least 10% of longline vessels fishing in ICCAT waters have onboard observers, to further increase transparency around what fish is caught where.

"Securing these wins—together, at one ICCAT meeting—was energizing," said Rachel Hopkins, who directs Pew's international fisheries work. "Each of these new measures fulfills or advances our goals to put in place a global system of rules to achieve sustainable fishing for a healthy ocean."

Dashboard Tracks Economic Recovery in Philadelphia

While Philadelphia's recovery from the economic impacts of the pandemic will be a complicated and high-stakes journey for its residents, workers, employers, and policymakers, the city's progress can be tracked by the ever-changing health of its businesses, the jobs they offer, the wages they pay, and what their customers spend.

The new interactive Business and Jobs Recovery Dashboard from Pew's Philadelphia research and policy initiative makes it easy to analyze such information by providing snapshots of local business health and job trends, starting before the pandemic-driven shutdowns in March 2020 and continuing with regular updates to the present.

Assembled from various data sources, the nine charts display key indicators such as delinquency on bills, financial stability, bankruptcy filings, consumer spending, and wages and jobs by sector. Most of the indicators can be filtered by industry type. Some can also be filtered by

ZIP code, business size (from micro with nine or fewer employees, to large with 500 or more), and gender of the owner or top executive, offering a nuanced view of recovery across the city. Users may also apply two or more filters at the same time, for finer-grained findings. And two additional reference charts provide profiles of the businesses and populations in each ZIP code area before the pandemic. The dashboard is available at pewtrusts.org/PhilaBusinessDashboard.

"The data accessible through the dashboard will help community leaders as they monitor Philadelphia's recovery from COVID-19, and help them to better allocate precious resources to help the city get back on its feet," says Elinor Haider, who directs Pew's Philadelphia research and policy initiative.

—Demetra Aposporos

Diversity and Division in Advanced Economies

Wide majorities in most of 17 advanced economies say having people of many different backgrounds improves their society. Outside of Japan and Greece, around 6 in 10 or more hold this view, and in many places—including Singapore, New Zealand, the United States, Canada, the United Kingdom, Australia, and Taiwan—at least 8 in 10 describe where they live as benefiting from people of different ethnic groups, religions, and races, according to a recent survey by the Pew Research Center.

Even in Japan and Greece, the share who think diversity makes their country better has increased by double digits since the question was last asked four years ago, and significant increases have also taken place in most other nations where trends are available.

Alongside this growing openness to diversity, however, is a recognition that societies may not be living up to these ideals: In fact, most people say racial or ethnic discrimination is a problem in their society. Half or more in almost every place surveyed describe discrimination as at least a somewhat serious problem, including around three-quarters or more who have this view in Italy, France, Sweden, the U.S., and Germany. And in eight surveyed publics, at least half describe their society as one with very strong or strong conflicts between people of different racial or ethnic groups. The U.S. is the country with the largest share of the public saying there is racial or ethnic conflict.

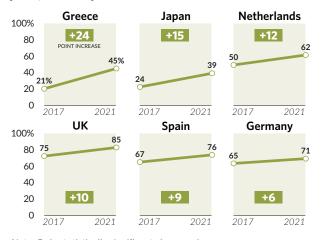
Notably, however, in most societies racial and ethnic divisions are not seen as the most salient cleavage. Rather, in the majority of places surveyed, more people identify conflicts between people who support different

political parties than conflicts between people with different ethnic or racial backgrounds. Political divisions are also seen as greater than the other two dimensions tested: between those with different religions and between urban and rural residents.

—Demetra Aposporos

Increasing shares see diversity positively

% who say having people of many different backgrounds, such as different ethnic groups, religions, and races, makes (survey public) a **better** place to live



Note: Only statistically significant changes shown.

Source: Pew Research Center







CONSUMER FINANCE

Payday loans in Hawaii once had interest rates of 460%, but legislative reforms passed in June and developed with technical assistance from Pew's consumer finance project will cap rates at 36% plus a monthly fee of \$35 or less, limit total finance charges to less than half of the loan amount, and give borrowers more time to pay. Also in June, Huntington National Bank became the third large U.S. bank to offer small-

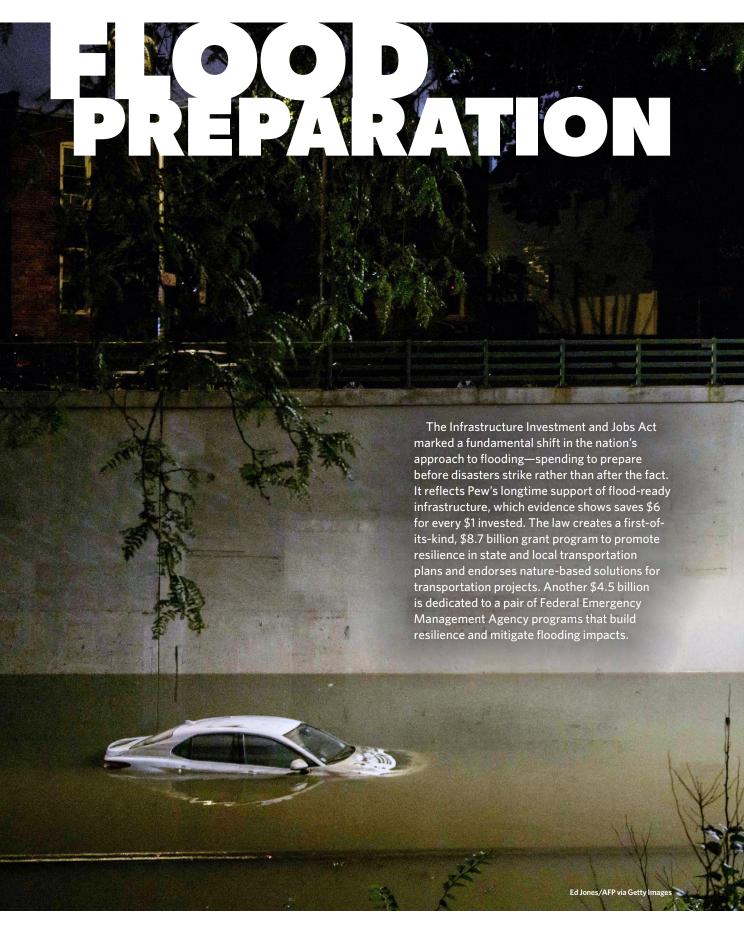
dollar loans that substantially meet Pew's published

standards for safe small-installment borrowing. Pew's project also worked at the federal level as Congress and the Biden administration acted in June to overturn rules allowing "rent-a-bank" arrangements. These partnerships between banks and nonbank lenders such as payday loan providers allowed the nonbank to lend at rates substantially higher than the bank would otherwise charge or that local laws would allow.











PUBLIC SAFETY

Michigan lawmakers adopted historic jail reforms that affect several aspects of local criminal justice systems in the state. The new laws adopted in January eliminate driver's license suspension as a penalty for infractions unrelated to dangerous driving, increase the use of interventions instead of arrest, improve probation practices, and reduce the use of jail time as punishment for many nonviolent offenses. Pew's public safety performance project provided technical assistance for the reforms, which will help keep families and communities intact and make better use of taxpayer dollars.

RETREMENTSAVINGS

More Virginia workers have access to retirement savings programs, thanks to an auto-IRA program passed into law in April. VirginiaSaves is a public-private partnership for private sector workers who do not have retirement benefits at their workplace. Workers at qualifying employers would be automatically enrolled in an individual retirement account, with a portion of their pay set aside, and they could opt out at any time or change their designation. Pew's retirement savings project worked with Virginia policymakers to enact the law and will continue efforts to expand its reach to more workers at small businesses.

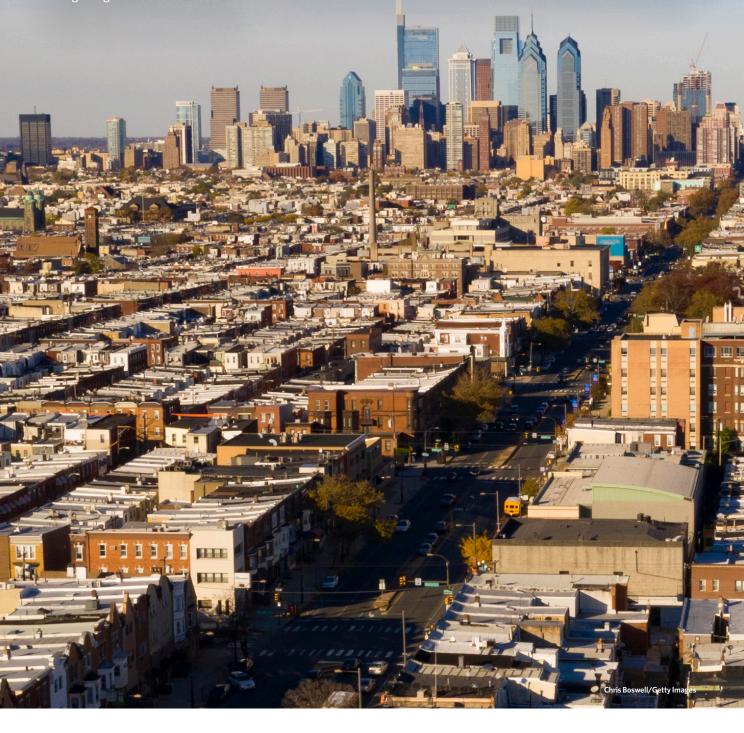


In November, the Biden administration announced that it would restore the Roadless Area Conservation Rule in Alaska's Tongass National Forest, protecting some 9 million acres that include the largest remaining tracts of old-growth forest in the country. The rule works to conserve exceptional swaths of public lands by preventing most development and prohibiting the construction of roads, which can lead to the rapid degradation of ecosystems. Pew played a major role in establishing the roadless rule in 2001 and in maintaining these safeguards in the Tongass and other national forests.

John Hyde/Design Pics via Getty Images

PHLADELPHA

Some Philadelphia residents have "tangled" home titles, with deeds carrying someone else's name—say, a deceased parent or other relative—which can prevent access to the full benefits of ownership. Such benefits can include taking equity loans, selling the property, or qualifying for city programs that help low-income households. Pew's Philadelphia research and policy initiative found that more than 10,400 properties are affected, with many of those property owners unaware of the problem. The initiative's report in August resulted in hearings and proposed legislation from City Council, and the city established a Tangled Title Fund to help defray homeowners' costs in getting their titles corrected.



With the national conversation on race and diversity quickly evolving in recent years, the Pew Research Center's 2021 surveys and analysis provided context for America's changing demographics: Among those who self-identify as Black or African American, the share who say it is their only racial or ethnic identification has declined over the past two decades. Black (61%) and Hispanic (71%) adults were more likely than White (36%) adults to say that they feel a strong connection to their family's cultural roots and that their origins are central to their identity. And amid widespread reports of discrimination and violence against Asian Americans during the coronavirus outbreak, 32% of Asian adults said they feared someone might threaten or physically attack them—a greater share than other racial or ethnic groups.



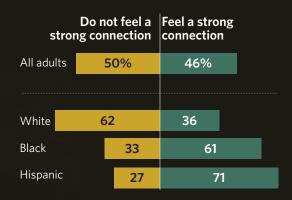
Almost half of Asian American adults say they've experienced an incident related to their racial or ethnic background during the pandemic

% of Asian adults who say each of the following has happened to them since the coronavirus outbreak because of their race or ethnicity

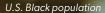


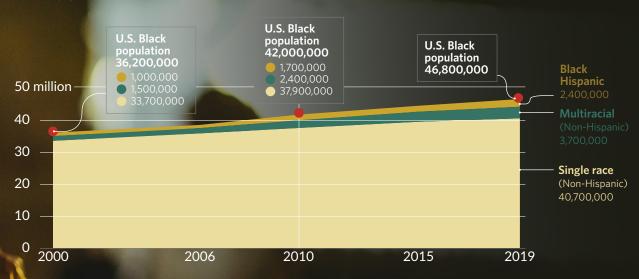
Black and Hispanic adults feel more connected to roots than White adults

% saying they ___ with the cultural origin of their family



Among the U.S. Black population, both multiracial and Hispanic numbers have grown since 2000





Source: Pew Research Center

19



Superbugs

A Global Health Threat

Antibiotic-resistant bacteria are proliferating. To stop them, we must preserve the drugs we have—and find new antibiotics now.

By Kathleen Cahill

 ${\cal M}$ ary Millard lives with an antibiotic-resistant infection, caused by bacteria known as Pseudomonas aeruginosa, that she acquired during heart surgery in 2014.

"I was 55 and super healthy, and I started getting atrial fibrillation," recalls Millard, who lives near Baton Rouge, Louisiana. "I could feel my heart jumping around in my chest." She was scheduled for surgery, but went into massive cardiac arrest just before the surgery and ended up on an ECMO heart-lung machine. "That's when I acquired the infection," she says. Such infections can be difficult to eradicate, especially if they involve any type of medical device such as a prosthetic joint or vascular graft, and the symptoms can flare up repeatedly and unexpectedly.

Since being infected, Millard says, "I've had 28 CT scans and hundreds of X-rays. I developed sepsis in 2014 and again a year later." At the time she was given a 98% chance of dying. "People think: 'I'm healthy; I'll never get an infection.' But it can happen to anybody."

Over the past decade, there has been an explosion in infections from antibiotic-resistant bacteria—the so-called superbugs that have evolved to outsmart the working mechanisms of antibiotics and develop resistance to them, continuing to grow instead of being killed by the medicine. These bacteria have increasingly grabbed headlines worldwide—carbapenem-resistant *Enterobacteriaceae* (CRE), *Klebsiella*, and, perhaps the most commonly known, methicillin-resistant *Staphylococcus aureus* (MRSA)—and can have a terrifying aftermath.

Superbugs threaten all of modern medicine: As they become increasingly common, patients getting routine surgery or care such as cancer treatment risk acquiring an infection that's difficult or impossible to treat.

Christina Fuhrman's story is another cautionary tale. In 2012, after a root canal, her dentist sent her home with a prescription for an antibiotic as a safety measure.

"I didn't have an infection. And I thought nothing of taking that antibiotic as a preventive follow-up to my root canal," the Missouri resident remembers. It's a decision she regrets to this day.

Over the next couple of weeks, she developed "fatigue that was like nothing I had ever experienced before: exhaustion, abdominal pain, and horrible diarrhea." Eventually, she became so dehydrated that she had to be hospitalized.

Fuhrman was diagnosed with a *Clostridioides difficile*, or *C. diff*, infection—a major health threat that, according to the U.S. Centers for Disease Control and Prevention (CDC), is almost always caused by a side effect of antibiotic use. *C. diff*, essentially an extreme overgrowth of normal bacteria thrown out of balance by antibiotics, most often strikes seniors who are hospitalized or living in a nursing home. But Fuhrman, a healthy and independent 31-year-old, had six long hospital stays over the next seven months, fighting the devastating infection that easily could have ended her life.

All told, antibiotic-resistant bacteria infect at least 2.8 million Americans each year and kill at least 35,000 of them, according to the CDC; approximately another half million people will be diagnosed with *C. diff*, with roughly 15,000 dying from it.

Millard and Fuhrman are both Stand Up to Superbugs ambassadors with The Pew Charitable Trusts' antibiotic resistance project, sharing with members of Congress their personal stories of fighting drug-resistant superbugs and complications from antibiotics use to urge lawmakers to act to help preserve the effectiveness of existing antibiotics and develop urgently needed new ones. For more than a decade, the project has worked to preserve the effectiveness of antibiotics, reduce unnecessary use of these drugs—including their use for growth promotion in agricultural animals—and spur the creation of new types of antibiotics.

So how did resistance to antibiotics—drugs that transformed modern medicine for the better—become such a problem?

Alexander Fleming, who discovered penicillin in 1928, predicted some two decades later that bacteria treated with the drug would evolve, leading to penicillin-resistant organisms. He was right.

"This is what bacteria do. It's evolution at work," says Dr. Cheryl Quinn, a drug discovery expert who has worked with Pew's antibiotic resistance project. "They develop resistance to whatever you throw at them. All these millions of bacteria are always generating mutations."

The bottom line is that every time an antibiotic is used, it contributes to the development of resistance

and diminishes that drug's effectiveness, says Kathy Talkington, who directs Pew's public health programs. "Over time, all antibiotics become less effective, but when antibiotics are overused or misused, either for human health or in animal agriculture, the contribution toward antibiotic resistance intensifies," she says.

The World Health Organization says antimicrobial resistance is one of the top 10 global public health threats facing humanity today, and calls superbugs a global health threat requiring urgent action. The organization published a fact sheet in November warning that for some of the most common bacterial infections—including urinary tract infections, sepsis, sexually transmitted infections, and some forms of diarrhea—"high rates of resistance against antibiotics frequently used to treat these infections have been observed worldwide, indicating that we are running out of effective antibiotics."

To make matters worse, new antibiotics aren't being developed fast enough to take the place of those that are being rendered useless—not by a long shot. "Every FDA-approved antibiotic in use today," notes Pew's Talkington, "is based on a scientific discovery from 1984 or earlier."

That's why Pew's antibiotic resistance project has worked to improve the stewardship of existing antibiotics, minimizing the inappropriate use of these drugs both in human medicine and in animal agriculture, and also ensuring that the right dose is given for the right duration in order to maintain their effectiveness as long as possible. The project also works to develop and promote policies that lead to the creation of new types of antibiotics, a critical step toward ensuring that people will always have antibiotics that are effective.

Antibiotics save lives, and patients should take them when needed. But recent research from Pew and the CDC shows that nearly 1 in 3 antibiotics prescribed at doctor's offices and other outpatient settings is unnecessary. That's some 47 million unnecessary prescriptions a year, all contributing to antibiotic resistance.

Over-prescribing in inpatient settings is also a concern, especially at a time when more than half of all patients admitted to U.S. hospitals are given antibiotics. Underscoring that finding, a recent Pew study found that 52% of all patients admitted to U.S. hospitals with COVID-19 during the first six months of the pandemic were prescribed antibiotics.

Talkington says that minimizing inappropriate antibiotic use in hospitals is essential in the fight against antibiotic resistance.

Beginning in 2018, Pew partnered with the CDC and other health experts to evaluate antibiotic use in U.S. hospitals in order to set national targets to improve prescribing. The findings, published last year, were startling: They showed that 79% of all antibiotic





Tamika Arnold Capone of Jonesboro, Arkansas, sifts through a stack of medical supplies she's using to treat a wound that is infected with the drug-resistant bacteria Pseudomonas aeruginosa and isn't healing. The Washington Post/Getty Images

prescriptions for community-acquired pneumonia and 77% of those for urinary tract infections were inappropriate, using an unrecommended antibiotic, for example, or using a drug for too long. The panel recommended a national target to reduce inappropriate use for each of these conditions by 90%.

Meeting those national reduction targets will require widespread adoption of effective antibiotic stewardship programs.

Among Pew's antibiotic resistance project's partners is the Combating Antibiotic-Resistant Bacteria Biopharmaceutical Accelerator (CARB-X), a global nonprofit public-private partnership dedicated to accelerating antibacterial research to tackle the threat of drug-resistant bacteria. Pew has worked closely with CARB-X, which is based at Boston University, since its inception in 2016; the organization's executive director, Kevin Outterson, has been studying antibiotic resistance for almost two decades.

Outterson likens antibiotic stewardship to infrastructure. "You can stop maintaining a bridge, and it's hard to say exactly when it's going to fail. Antibiotics are slowly degrading, and every year that we kick the can down the road, the solution becomes more difficult,"

he says. People understand that you need to invest in repairing roads, bridges, and other infrastructure, he says, adding that we should likewise build a system to ensure that antibiotics—which he calls the most powerful drugs ever invented—are there when we need them.

"It takes 10 to 15 years to go from a good idea to an antibiotic with FDA approval," Outterson notes. In the meantime, "we need to maintain the infrastructure we have. Instead of waiting for the bridge to collapse and then building a new one, let's maintain it."

But building a new bridge—or, in this case, developing new antibiotics—remains a crucial part of the fight against superbugs. And the news there is not encouraging.

Between the 1940s and the 1970s, 29 new classes of antibiotics were developed. But in the 1980s, just two new ones were created—and there have been none since. Those novel classes of antibiotics—that is, drugs that are new and significantly different from existing drugs—are needed to overcome increasing resistance, especially to bacteria such as *Acinetobacter baumannii*, which are Gram-negative and so particularly difficult to treat because they have a defense mechanism (called an efflux pump) that jettisons the medicine back outside the cell.

That's why Pew's antibiotic resistance project is working not just on stewardship but also on supporting the development of new antibiotics.

For example, in years past, research and development efforts for new antibiotics were effectively siloed, and when companies stopped doing R&D, their information got locked away—forcing scientists to keep repeating basic efforts instead of building upon existing data and moving forward toward new potential discoveries. So in order to help facilitate innovation, Pew created the Shared Platform for Antibiotic Research and Knowledge (SPARK), a cloud-based, virtual laboratory that allows scientists to share data and observations, learn from past research, and generate new insights into how molecules enter and stay inside of Gramnegative bacteria. Since its launch in 2018, SPARK has garnered data contributions from academic, governmental, nonprofit, and industry sources, including major pharmaceutical companies such as Merck and Novartis, and been a resource for more than 800 users from 63 countries.

Pew has also worked to track the pipeline of antibiotics in clinical development—drugs that are either

approved, discontinued from development, or remain stagnant. This visual pipeline tool underscores the long-standing concerns of scientists, doctors, public health officials, and others about the dangerously low number of antibiotics in development to address current and future patient needs, particularly for treating the most urgent bacterial threats.

"The pipeline of antibiotics in development is broken," Talkington says, urging that action be taken soon if we want to ward off disaster.

As for what that disaster would look like: The United Nations warns that without major change, by 2050 drug-resistant disease could cause 10 million deaths a year, along with catastrophic damage to the global economy. And some infections are already closer to being untreatable, such as the sexually transmitted disease gonorrhea.

So why don't drug companies develop new antibiotics, since there's clearly a need for them? It's a matter of resources.

"Developing a new antibiotic can cost \$1.3 billion over 10 to 15 years for a drug that—if it's approved—would ideally be used only when absolutely necessary and in

An employee helps to package vials of injection antibiotics at the Biokhimik pharmaceutical manufacturing plant in Saransk, Russia. Stanislav Krasilnikov/TASS via Getty Images



the smallest dose possible," says Talkington. That's not exactly a recipe for a profitable product.

So it's the perfect storm: the rise of antibioticresistant superbugs plus a broken pipeline for bringing new antibiotics to market.

"There are far too few drugs in development with even the potential to treat the most dangerous superbugs. And that's unlikely to change without meaningful government intervention to fix what has become a broken antibiotic market," Talkington says.

"There's widespread consensus that government intervention is necessary to fix the broken antibiotic-development pipeline," says Talkington. "What's needed is a policy like the Pioneering Antimicrobial Subscriptions to End Upsurging Resistance (PASTEUR) Act, which is aimed at delinking—in other words, removing—antibiotic revenues from sales figures."

That's why, Talkington says, the federal government must get involved in a public-private partnership for funding the development of novel antibiotics, and why Pew is urging Congress to pass the PASTEUR Act to help develop the next generation of life-saving antibiotics.

The act was introduced in the House of Representatives and Senate last June, with bipartisan support, by Senators Michael Bennet (D-CO) and Todd Young (R-IN) and Representatives Mike Doyle (D-PA) and Drew Ferguson (R-GA). As of the end of the year, the bill had 19 co-sponsors.

The act would establish a subscription model to decrease a company's costs for developing new antibiotic drugs, including a federal payment that is not connected to the sale of the drugs, to ensure the company gets a sufficient return on its investment while minimizing pressure to sell more.

"A company says: 'We want to develop this.' And the government says: 'Great, when you bring it to market, you will get a financial incentive, regardless of how much of the drug you sell,'" Talkington says.

Outterson, from CARB-X, concurs. "For most of the last two decades, we've been looking at why the private business model for developing antibiotics is broken. It's almost beyond doubt now that public funding is essential. The problem is, you develop a brand-new highly effective antibiotic, you bring it to market and the right thing to do is to use as little as possible for five or 10 or 20 years. That's a great thing for public health, but a terrible thing for the company. We need a new way to think about this model so that companies developing these drugs don't go bankrupt in the process."

Under the PASTEUR Act, "the company makes the same amount of money no matter how much of



Stand Up to Superbug ambassadors on the U.S. Capitol steps. The advocates—from left, Erica Washington, Deanne Tabb, Mary Millard, and Cassandra Quave—flew to D.C. to share with lawmakers their stories of fighting antibiotic-resistant infections and to lobby for increased efforts to preserve existing antibiotics and find new ones. Courtesy of Mary Millard

the antibiotic is used," he says. "And we put that new antibiotic on the shelf as a fire extinguisher: We don't want to use it until we have to."

Superbugs have forever changed the lives of patients like Mary Millard, whose world has been turned upside down by the waning power of antibiotics. But experts say that unless antibiotic resistance is seen as the crisis that it is, we all run the risk of living in a post-antibiotic world.

"Our great-grandparents lived in a world where a minor cut could kill you," Outterson says. "Let's not return there."

Kathleen Cahill is a Maryland-based writer and editor.

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A TANGLE OF Tolerance

Segregation

The Pew Research Center's largest study of India explores the intersection of religion and identity politics.

By David O'Reilly

People congregate along the banks of the Sarayu River in the ancient northern city of Ayodhya to light earthen lamps on the eve of the Hindu festival Diwali. A Pew Research Center survey explores religious attitudes among the numerous faiths across India, including Hindus, Muslims, Christians, Sikhs, Buddhists, and Jains. Sanjay Kanojia/AFP via Getty Images



Bounded on the north by the Himalayas, east by the Ganges River and Bay of Bengal, west by the otherworldly salt marshes known as the Rann of Kutch, and south by the spice-scented Cardamom Hills, India's 1.4 billion citizens revere deities as diverse as their nation's topography: the elephant-headed Ganesha, Allah of Islam, the protector-god Vishnu, Jesus, the Sikhs' Waheguru, and many more.

And the great majority of the nation's adults—84%—regard religion as "very important" in their lives, according to the largest single-country survey ever conducted by the Pew Research Center outside the United States. Even more say religious tolerance is central to what it means to be "truly Indian."

Nine out of 10 of the nearly 30,000 adults interviewed for the study—"Religion in India: Tolerance and Segregation," released last June—say they feel "very free" to practice their faith, and many borrow from one another's beliefs in ways that Westerners might find baffling. More than 3 in 4 Indian Muslims subscribe to the Hindu concept of karma, for example. A third of India's Christians believe in the purifying properties of the Ganges River, and nearly 1 in 5 Jains and Sikhs celebrate Christmas.

Yet the survey also reveals palpable religious differences in the vast, rapidly modernizing nation. The 232-page report notes that significant minorities of Indian adults say they would not be willing to accept people of other faiths in their neighborhoods. Most form close friendship circles within their own faith, and large majorities oppose interfaith marriage.

"People in India's major religious communities tend to see themselves as very different from others," according to the study, which was conducted as India's electoral politics have sharpened tensions between the 81% Hindu majority and the 14% Muslim population. The report found that two-thirds of Hindus view themselves as very different from Muslims, for example, while 64% of Muslims "return the sentiment."

In light of the controversial policies of Prime Minister Narendra Modi—who has been in office since 2014 and is often described as promoting a Hindu nationalist ideology—these attitudes have particular relevance in the public life of modern India. In February 2020, after India's parliament gave migrants of all South Asia's major religions—except for Muslims—an expedited path to Indian citizenship, clashes between Hindus and Muslims in Delhi left more than 50 dead.

Hindus "tend to see their religious identity and Indian national identity as closely intertwined," the survey found, with nearly two-thirds (64%) saying it is "very important to be Hindu to be 'truly' Indian." Of those who share that view, 80% also say it is equally important to speak Hindi—one of India's two official languages, but just one of 22 constitutionally recognized languages—to

India is majority Hindu, but religious minorities have sizable populations

India's adult population by religion (2011 census)

	% of adults		Number of adults
Hindus		81.0%	615,587,181
Muslims	12.9		97,689,555
Christians	2.4		18,512,051
Sikhs	1.9		14,416,821
Buddhists	0.7		5,653,119
Jains	0.4		3,299,660
Other religions	0.6		4,641,403

Note: Based on adults ages 18 and older, excluding the union territories of Andaman and Nicobar Islands and Lakshadweep Source: Pew Research Center

be authentically Indian. And of those who share both views, the survey found that 60% voted with Modi's Bharatiya Janata Party in the last national election in spring of 2019.

The survey was conducted as part of the Pew-Templeton Global Religious Futures Project, a Pew partnership with the John Templeton Foundation that analyzes religious change and its impact on societies around the world. Undertaken between late 2019 and early 2020, just before the COVID-19 pandemic, the survey was conducted entirely in face-to-face interviews among 29,999 adults in 17 languages and is the Pew Research Center's most comprehensive, in-depth exploration of India.

"If you're interested in studying the role of religion in statecraft and building identity around the world, there's no better place to do it than India," says Neha Sahgal, associate director of research at the Center. "This is a country where religion and identity politics are hugely important, but there's hardly been any data informing its very emotional debates—let alone its policymaking. So the opportunity to make an impact was huge because data has the power to ground public debate in a set of facts.

"There's one very surprising fact in the data, and that's India's unique concept of tolerance," Sahgal continues. "For Indians, being tolerant of others and valuing tolerance is not antithetical to wanting to live a religiously segregated life." As such, she says, "it

couldn't be more different from the American 'melting pot' model of pluralism. Indians instead favor a thali model of pluralism: a humongous plate containing bowls of different flavors that all remain separate."

Several Indian scholars who helped develop the survey say they take comfort in findings that offer a seemingly contradictory "tolerant but separate" picture of Indian religiosity, noting that it challenges the media's picture of a deeply divided nation.

"This is very, very interesting—a new idea of India," says Hilal Ahmed, associate professor at the Centre for the Study of Developing Societies in New Delhi, where he researches political Islam and cultural perceptions of Muslims. "When people say that respecting each other's religion is very important not merely for being a good Indian but a good Hindu, a good Sikh, a good Muslim, it means people have tremendous respect for minorities and want an inclusive society," says Ahmed. "For me, this is the most important finding of the survey."

Ravinder Kaur, professor of sociology and social anthropology whose work at the Indian Institute of Technology in Delhi focuses on kinship, migration, social change, and gender, says the findings give her optimism at this time of religious tension in her country. Politically driven Hindu nationalism, or hindutva, "cannot ultimately damage the fabric of our communities," she predicts, "because our diversity and respect for tolerance are so great."

Kaur, a Sikh, points to the northern city of Ayodhya, where tensions still simmer over a Hindu mob's destruction of a centuries-old mosque in 1992, "And yet Hindus and Muslims there are still very intertwined, economically and politically," she says, in subtle ways that even a detailed survey such as this one would find hard to capture. Ayodhya's Muslim community, Kaur notes, has long provided much of the religious paraphernalia, such as garlands, that Hindus use in their religious ceremonies. "It's a coexistence," she says, "that's been carrying on forever."

Nonetheless, the Pew survey found that a sense of differentness is "reflected in traditions and habits that maintain the separation of India's religious groups." Religious conversions, and marriages across religious lines, are "exceedingly rare," for example, with about two-thirds of Hindus and nearly 80% of Muslims saying it is "very important to stop people in their community from marrying into other religious groups."

Indians also tend to socialize with members of their own religious group. "Hindus overwhelmingly say that most or all of their friends are Hindu," according to the report, and 36% say they would not be willing to accept Muslims in their neighborhoods. About a quarter of Muslims say they would not accept Christians, Sikhs, or Buddhists as neighbors, and 16% of Muslims said the same of Hindus.



Muslim brides await the start of their nuptials—a mass wedding for 35 couples—in the western city of Ahmedabad. Sam Panthaky/AFP via Getty Images

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Such pervasive self-segregating seems a measure of the value Indians place on their distinct religious identities, says Ajay Verghese, assistant professor of political science at Middlebury College. "One way to keep religion intact is to not come in contact with outside influences," he notes—and it seems to be working. The survey found that despite the nation's growing prosperity, "India's population so far shows few, if any, signs of losing its religion."

While one-third of Buddhists do not subscribe to belief in a deity, 97% of all Indians say they believe in God and roughly 80% are "absolutely certain" God exists. Slightly more than half the population (54%) say there is one God with "many manifestations," a view held by 61% of Hindus and 54% of Jains. Two out of 3 Muslims and Christians, meanwhile, believe in "only one God."

Westerners seeking to grasp why so many Indians adhere to religion should recognize that "the term 'religion' is way more expansive in India than in the West," says Verghese, who studies Indian politics, ethnicity, religion, and political violence. "It's much harder to secularize in a country where religion affects every aspect of your life, from what you eat and the clothes you wear to who you marry."

He points, however, to some tantalizing Pew data that may augur change. The survey found that only 69% of respondents in the nation's wealthier, better-educated South say religion is "very important" to them, a figure well below the national average of 84%. Whether Indians in other regions will become less religious as they grow more prosperous "is an interesting question," he says.

But with interreligious marriage so unpopular, and nearly everyone agreeing it's "highly important" to observe religious ceremonies for birth, marriage, and death, Verghese predicts that "religious identity will likely stay high" in India for the foreseeable future.

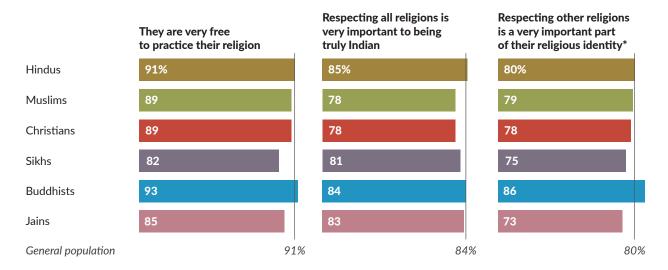
For all their religious self-segregating and identity politics, however, many Indians are highly eclectic in their spiritual beliefs and practices. More than half of Christians (54%) believe in karma and 29% believe in reincarnation, for example, and 31% of Christians and 20% of Muslims celebrate Diwali, the festival of lights traditionally celebrated by Hindus, Sikhs, and Jains.

Roughly 7 in 10 Indians also say they believe in fate; 44% believe that the position of planets and stars can influence events in one's life, and 39% believe lives can be influenced by magic, sorcery, or witchcraft. Many of these beliefs are highest among the less educated, though 29% of those with college degrees say they believe in the efficacy of magic.

Although focused on religion, the survey explored other important aspects of Indian life. Unemployment tops the list of national concerns, with 84% of all respondents calling it a "very big problem." About 3

Indians feel they have religious freedom, see respecting all religions as a core value

% of Indian adults who say...



^{*}Respondents were asked "Is respecting other religions a very important, somewhat important, not too important, or not at all important part of what being [Hindu/Muslim/etc.] means to you?" The very small share of respondents who do not identify with a religion were not asked this question.

Source: Pew Research Center



Christian family members gather graveside to offer prayers for their departed relative on All Souls' Day in Kolkata, the seventh-mostpopulous city in India. The vast country is home to numerous religious populations, with a large percentage of those surveyed saying that religious tolerance is central to what it means to be "truly Indian." Avishek Das/SOPA Images/LightRocket via Getty Images

in 4 also cited crime, corruption, and violence against women. Ninety-five percent of Muslims say they are "very proud" to be Indian, and 85% agreed with the statement that "Indian people are not perfect, but Indian culture is superior to others."

About 30% of Indians identify as belonging to a grouping of higher castes known as "general category" caste, with the rest of the population saying they belong to protected castes that have historically been discriminated against known as "Scheduled Caste," "Scheduled Tribe," or "Other Backward Class." Nearly half (46%) of Muslims and Sikhs identify as belonging to the general caste, as do 76% of Jains. Just 28% of Hindus, however, identify with the general castes.

Nearly two-thirds of all Indians, and about 7 in 10 Muslims, say it is very important to stop people from marrying outside their caste. Only a third of Christians and half of college graduates agreed.

Significantly, the survey found that despite Indians' acute sense of religious difference, complaints of religious discrimination are relatively low. Only 24% of the nation's nearly 98 million Muslim adults report facing "a lot" of discrimination, although the numbers are notably higher—about 40%—among Muslims living in the north of the country, which includes the national capital territory of Delhi. Additionally, only about 1 in

5 Indians said there is "a lot" of discrimination against members of the lower castes.

Those relatively low numbers were "a shock" to Verghese, whose research focuses on Hindus, because he had supposed discrimination in India to be more pervasive. "There are two ways to interpret" the survey's findings on discrimination, he says.

"One is that people don't want to admit [to survey interviewers] that they've been discriminated against," he says. "The other is that we [social scientists] may be incorrect about the extent of discrimination" in India. "If you work on discrimination questions you have to ask yourself: 'Why is it lower than we think?'"

That is what makes the findings such a rich starting point for further research about India, its religiosity, and its politics as the nation and its international influence grows.

"We will have to grapple with some of these statistics," says Verghese. "A survey of this magnitude is something scholars who work on Indian religions have needed for a long time."

David O'Reilly was the longtime religion reporter for The Philadelphia Inquirer.

FROM THE FACT TANK

The Fact Tank is analysis and news about data from the writers and social scientists at the Pew Research Center. More is available at pewresearch.org/fact-tank

U.S. Household Growth Over the Last Decade Was the Lowest Ever Recorded

BY RICHARD FRY, JEFFREY S. PASSEL, AND D'VERA COHN

Growth in the number of U.S. households during the 2010s slowed to its lowest pace in history, according to a Pew Research Center analysis of newly released 2020 census data.

The 2020 census counted 126.8 million occupied households, representing 9% growth over the 116.7 million households counted in the 2010 census. That single-digit growth was more anemic than the prior record low percentage growth of households (11%) during the previous decade, as shown in the 2010 census. The decennial census has counted the number of U.S. households on a consistent basis dating back to 1850.

From 2010 to 2020, the number of households increased by 10.1 million—fewer than in any decade from 1950 to 2010. For example, in the 1970s, when the adult population was much smaller, the U.S. added 16.9 million households.

The subpar growth in households over the last decade matters because household formation has implications for the broader economy. It can affect the demand for housing and stimulate both single-family and multifamily construction. Associated with that is spending for durable goods such as furniture and appliances. The slowdown in economic growth over the 2010s is partly a reflection of weak household formation and low levels of home building.

Several long-term demographic trends are affecting U.S. household growth. A fundamental driver of household growth is population growth. The population residing in households (that is, those who do not live in group quarters such as dorms, prisons, or nursing homes) grew by only 7.5% in the last decade, the slowest population growth since the 1930s.

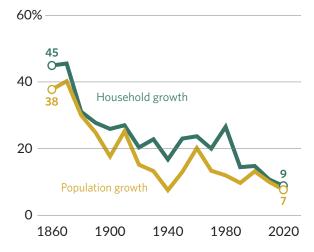
Beyond population growth, another demographic trend also slows growth in the number of households: Multigenerational family living has been

increasing. In 2016, 20% of the U.S. population lived in multigenerational family households, up from 12% in 1980. Almost all of these involve two or more adult generations living under one roof rather than in separate households.

More broadly, the U.S. racial or ethnic groups that are growing most rapidly are less likely than other groups to live in their own households, in part because adults in these groups are younger. Asian and Hispanic adults—the fastest growing racial or ethnic groups in the U.S.—are less likely than White

2010s had slowest percentage growth in households in at least 160 years

% growth in number of U.S. households and population per decade



Source: Pew Research Center

and Black adults to live in separate households. In 2020, there were 42.2 households for every 100 Hispanic adults and 41.9 households for every 100 Asian adults. White (53.3 households per 100 adults) and Black adults (55 households per 100 adults) were more likely to live in separate households.

Another factor affecting household growth is the declining tendency of adults to live alone. Throughout much of the 20th century, American adults had been increasingly living alone. That trend has slowed markedly since the early 2000s. Adults ages 65 and older are the most likely to live alone. The share of older adults living alone peaked in the mid-1990s (32%) and has since retreated (27% as of 2020).

The rate at which adults are living in their own household declined over the past decade among younger and older adults alike, with the exception of those ages 55 to 64. Still, older adults remain more likely than those who are younger to live in their own households, in part because incomes rise as people get older and they have more economic resources to set up their own household. In 2020, there were 34.7 households per 100 adults ages 18 to 34, compared with 63.2 households per 100 adults ages 65 and older. Overall, the household formation rate declined slightly from 51.5 households per 100 adults in 2010 to 50.9 households per 100 adults in 2020.

Some geographic trends may also be contributing to diminished household growth. The U.S. population is increasingly likely to live in metropolitan areas. Today, 14% of the adult population is in rural areas, down from 16% in 2010. Adults in rural areas are more likely

to live in their own households (54.9 households per 100 adults) than adults in metropolitan areas (50.2 households per 100 adults).

Rising housing costs are also likely undermining household growth. Nationally, rents have been rising much faster than inflation in general. From 2010 to 2020, the consumer price index (CPI) for rent of primary residences rose 37%, compared with an increase of 13% for the CPI for all items except for shelter. Home prices have roughly doubled since 2000, according to the Case-Schiller national home price index.

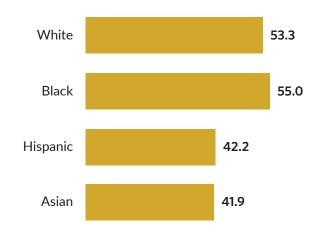
Census experts had previously noted the slow household growth over the decade and surmised that household growth might lag population growth over the decade, resulting in the first ever increase in household size. That did not come to pass, as the average household size decreased from 2.58 (2010) to 2.55 (2020).

Slow household growth has played out differently across the states and the District of Columbia. Fifteen states and the District of Columbia had double-digit growth since 2010, with Utah leading the nation (20%). Conversely, 18 states had household growth of 5% or less, with West Virginia as the only state to experience a decline in the number of households (-3%). The growth (or decline) in households across states largely reflects population changes during the decade.

Richard Fry is a senior researcher, Jeffrey S. Passel is a senior demographer, and D'Vera Cohn is a senior writer/editor at the Pew Research Center.

White and Black adults are more likely to live in separate households than Hispanic or Asian adults

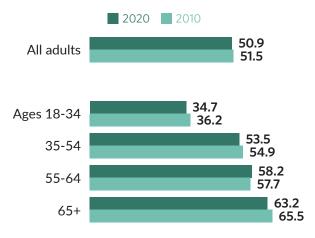
Households per 100 U.S. adults of each racial or ethnic group



Source: Pew Research Center

Adults in most age groups are less likely than a decade ago to live in their own households

Households per 100 U.S. adults of each age group



Source: Pew Research Center

STATELINE

Stateline, an initiative of The Pew Charitable Trusts, is a team of veteran journalists who report and analyze trends in state policy with a focus on fiscal and economic issues, health care, demographics, and the business of government.

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Waves batter a sea wall in Seattle after a heavy storm in October 2016. Although sea walls can protect properties, they can also multiply the force of waves onto surrounding areas, creating problems elsewhere and leading to calls to reduce their numbers. Elaine Thompson/AP Photo

Coastal States Seek to Limit Sea Wall Construction

BY ALEX BROWN

When coastal homeowners install sea walls to protect their houses from rising waters, they're solving one problem by creating another.

Protective structures such as sea walls and bulkheads can help save properties from erosion. But such structures, known collectively as shoreline armoring, can block the natural flow of sand and sediment down the coast and multiply the force of waves onto nearby shoreline—accelerating erosion elsewhere.

"Building sea walls just pushes the problem to someone else," said California state Senator

Ben Allen, a Democrat who chairs the Senate Environmental Quality Committee.

Sea walls are expensive to build and maintain. And if they're allowed to degrade, they can wash into the water and hurt habitats. Environmental experts say many communities that build sea walls aren't prepared to deal with the ongoing cost or damage to their shorelines.

In many coastal states, residents and officials are concerned that shoreline armoring is shrinking public beaches and harming natural ecosystems.

Some states are trying to stop that trend. Washington and Virginia recently enacted laws to discourage armoring structures and promote "living" shorelines, which use natural elements to slow erosion and maintain habitats. Those efforts could offer alternatives to sea walls in places where better options exist. Other states, including California and Hawaii, are weighing tough decisions about how to protect their beaches.

But rising sea levels and natural erosion leave many coastal homeowners with a stark choice: Wall up the shoreline or lose their homes. Unless states come up with a long-term strategy to move homes and infrastructure back from the shore, coastal experts say, more armoring is inevitable—even as more states acknowledge the damage it's causing.

"We've got a shoreline that wants to erode, and we've built homes, roads, highways, and power plants that don't want to move," said Lesley Ewing, senior coastal engineer with the California Coastal Commission, the state agency that regulates land use along the shore. "The ocean's going to be coming against those walls, and we're going to lose our beaches."

A Last Resort

On Washington's Puget Sound, nearly 30% of the shoreline is armored. That's led to a loss of the critical shallow-water habitat that supports spawning fish, juvenile salmon, and small organisms.

"Over time, the beach washes away, and it removes that habitat for these creatures at the base of the food web supporting everything else," said Margen Carlson, habitat program director with the Washington Department of Fish and Wildlife.

In recent years, Washington lawmakers have instituted civil penalties for illegal armoring structures, giving Carlson's agency another tool besides misdemeanor permit violations, which are rarely prosecuted. State Senator Jesse Salomon, a Democrat, introduced a bill that was signed into law last year to prohibit property owners from repairing or replacing their sea walls except as a last resort.

"You don't just get a rubber stamp permit anymore," Salomon said. "We determined that this is likely to gain more shoreline back than any other effort."

Salomon's measure requires regulators to consider alternatives to armoring, such as beach restoration, native vegetation, and softer structures built with natural materials. Hard walls are limited to situations where no other option is technically feasible.

The bill initially faced resistance from the Building Industry Association of Washington, which represents the residential construction industry. That group worked with leaders in the state House to include property owners' cost concerns and technical challenges as part of the permit analysis.

"We came to a good compromise," said Josie Cummings, the group's assistant director of government affairs. "The trend we're seeing is that landowners are already choosing the soft armoring option when it's available."

Salomon's bill is similar to a measure enacted last year on the opposite coast. Virginia's new law will require living shorelines where feasible and limit armoring to emergency situations.

"The standard approach for decades has been hard infrastructure, bulkheads, and sea walls," said the bill's sponsor, Democratic state Senator Lynwood Lewis Jr. "Climate change has made it clear that living shorelines are a much more preferable means of controlling erosion."

'The Beach or the Beach House'

Many states are still struggling to slow the pace of armoring. On the Great Lakes, where water levels reached record highs last year, states including Michigan and Ohio issued armoring permits at a blistering pace as thousands of homeowners sought to protect their properties from the waves.

Lake levels have dropped slightly this year. Experts say climate change is having a volatile effect on the Great Lakes waterline, causing higher highs and lower lows. While the receding water is a relief for now, it's also causing state and local leaders to put the armoring issue on the back burner, said Richard Norton, a professor of urban and regional planning at the University of Michigan.

"We've created this situation where it's easy to punt," Norton said. "We absolutely need to start having hard conversations and making it clear there will likely be places where we're either going to lose the beach or the beach house. The challenge for us is getting the states to still pay attention to this and lay the groundwork so that when the lakes come back up, we don't go back into panic mode."

In Hawaii, a ProPublica/Honolulu Star-Advertiser investigation found that oceanfront property owners have used loopholes to get around the state's sea wall prohibition, including emergency permits for "temporary" structures such as sandbags that are then left in place without consequence.

Among the properties that found exemptions to the state's environmental laws was an estate tied to former President Barack Obama and widely assumed to be his family's future Hawaii residence. The series found that roughly a quarter of the beaches on Hawaii's major islands have been lost to armoring.

"Beaches are becoming a rare commodity, and for us that's a big part of our lifestyle," said state Representative David Tarnas, a Democrat. "These temporary emergency measures end up staying there for years and years and years. That doesn't work anymore."

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Hawaii legislators passed a bill last year that will require real estate sellers to disclose to potential buyers when a property is threatened by sea level rise. In addition, Rep. Tarnas authored a new law requiring the state to inventory state-owned infrastructure threatened by flooding.

An environmental planner by profession, Rep. Tarnas said he has been assured by state regulators that they will issue new rules to crack down on the emergency loopholes. If not, he is preparing a bill that would allow for armoring only when the loss of an inhabited dwelling or public facility is imminent. That permit would be good for only one year, in which time the applicant would have to draft a long-term plan that requires removal of the threatened structure.

"We're dealing with significant public cost in order for these private homes to be protected," he said.

The Coastal Act

States have widely varying rules about how close to the shore residents can build, and how they're allowed to defend their properties. Many environmental groups see California's Coastal Act, which passed in 1976, as landmark legislation on the issue. That law established the California Coastal Commission to protect public access to the shore and regulate land use.

Environmental advocates say the agency has limited development in flood-vulnerable areas and prevented many new sea walls. California's coast was 8% to 9% armored when the Coastal Act passed in 1976, compared with about 12% today, according to agency officials.

But those efforts have prompted pushback from some property owners, who think the state should be doing more to protect their homes.

State Senator Patricia Bates, a Republican, said the agency has been slow to process permits for armoring structures, and many are denied altogether. "What they have said without saying is, 'We're not going to help you protect your house. It's going to be swallowed up by the ocean."

Sen. Bates sponsored a bill in 2020 that would require the state to approve shoreline protection permits for structures including sea walls if certain conditions are met. The measure would automatically approve permits not explicitly denied by the Coastal Commission within 30 days.

While the measure did not advance, Bates reintroduced it.

"[Property owners] really need a sensitive response to their needs in terms of time and tools," Bates said. "There have to be other strategies than just 'no.'"

How to Say No

Even in states that have taken steps to limit development and armoring on the coast, few leaders are willing to tell people they must abandon their houses.

"I still think you have to have that [hard infrastructure] option," said Sen. Lewis, the Virginia lawmaker. "The policy is clear that it is the last option, but at the end of the day we have to give property owners the availability of that last option."

Environmental groups say states that haven't figured out how to say no will be left with no choice but to approve more sea walls as sea levels rise.

"You can always wait until it's so bad that you get an emergency declaration to build whatever you want, and all that great policy goes right out the window," said Stefanie Sekich-Quinn, coastal preservation manager with Surfrider, an environmental nonprofit that works on ocean preservation issues.

Still, many states haven't found a better option. Telling residents they must leave their homes is politically unpopular, and states don't have the money to buy out thousands of expensive properties. Many states are funding research and technical programs to help local governments plan for managed retreat, in which homes are moved farther from the water or residents are relocated, but few have a clear picture yet of what that would look like.

Sen. Allen, the California lawmaker, sponsored a bill last year that would create a loan program for local governments to purchase homes threatened by sea level rise, which they could then rent out until they became uninhabitable. Homeowners would sell their properties on a voluntary basis.

Governor Gavin Newsom, a Democrat, vetoed the bill, saying "it does not comprehensively address the costly activities envisioned, likely to be carried out over decades."

Allen countered that the cost of buying the homes would be offset by the rental income they bring in over 20 to 30 years.

"The whole point of the bill is that it pays for itself, but that only works if we act quickly," he said. "The longer we wait, the harder it is to make an upfront purchase pencil out."

Alex Brown is a staff writer for Stateline.

ON THE RECORD

What Does Driving Have to Do With **Debt Collection?**

Lawmakers in many states are asking the same question

BY JAKE HOROWITZ AND JOANNA WEISS

For some people, a traffic ticket is just a nuisance: Pay the ticket and move on. But for many Americans, the inability to pay a ticket or fine, often for a minor infraction, can kick off a harmful chain of events. Starting with having their driver's license suspended, drivers are then faced with a tough choice to stop driving—and lose access to work and necessities—or keep driving with a suspended license and risk more costly fees, arrest, and even jail time.

That's precisely the choice facing millions of people in the U.S. who've had their driving privileges

Without driving, many people can't get to work, take their children to school, or get an elderly parent to the doctor. So in most places, 75% of people continue driving after their license is suspended. If they get pulled over, they can be arrested and jailed. And even a few days in jail can lead to job loss and housing instability. Rather than solving the problem of unpaid tickets and fines, these enforcement practices make it even more difficult for people to earn the money they need to pay the penalties and fees to get their licenses back.

That's why lawmakers across the country are taking bipartisan action to stop the counterproductive practice of suspending driver's licenses because of unpaid debts. In the past five years, 21 states—from Mississippi and West Virginia to New York and California—have passed major reforms to curb debtbased driver's license suspensions.

Policymakers in Michigan recently found that driving on a suspended license was the third most common reason people in their state went to jail. In response, lawmakers in 2020—with near-unanimous bipartisan support—passed legislation to end driver's license suspensions for unpaid fines and fees. Governor Gretchen Whitmer signed the bill, which took effect last October. The new law will reduce jail admissions and halt a practice that led to more than 350,000 license suspensions in Michigan each year.

Ensuring that drivers have valid licenses and insurance is critical to everyone's safety on the

road. But needlessly taking away licenses from economically vulnerable people not only prevents them from paying their court debts but also undercuts their ability to support themselves and their families. Countless American families are already under financial pressure: Household debt in the United States has tripled from \$4.6 trillion in 1999 to \$12.29 trillion in 2016, and debt collection lawsuits dominate civil court dockets—with court fines and fees only adding to the financial burden.

And punishing people for not having enough money to pay fees is not only a hardship for them; it also poses equal protection problems because of the disparate impact on poor people and creates counterproductive budget policy. Suspending driver's licenses is one of the least efficient ways for the criminal justice system to recoup its costs. By contrast, people are more likely to pay fines and fees when they're given the option of affordable payment plans to handle their traffic tickets. State budget managers in California, for example, saw collections increase significantly after 2017 when the Golden State replaced license suspensions with income-based payment plans.

State lawmakers are moving in the right direction, but more states could act to change their policies. And at the federal level, the pending bipartisan Driving for Opportunity Act could incentivize action by providing states with federal grant dollars to reinstate licenses already suspended because of unpaid fines and fees. As the country emerges from a pandemic that has punched holes in both state budgets and the personal finances of Americans, the time for more thoughtful and effective corrections and debt collection policies

Jake Horowitz directs The Pew Charitable Trusts' public safety performance project. Joanna Weiss is co-director of the Fines and Fees Justice Center. This essay, which has been updated, first appeared in The Hill.

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Pew experts explore innovative ideas on the most critical subjects facing our world.

Simple Tools Can Boost Access to Online Legal Information

With focus on search engine optimization, civil courts and legal aid providers can help more people find their websites

BY ERIKA RICKARD AND NATASHA KHWAJA



For many Americans, Google and other search engines are increasingly popular means of finding legal information and resources. People facing civil justice issues—such as housing disputes or consumer debt claims—often do not realize that their problems have implications that require legal remedies. So they turn to the internet, as they would in other situations to find specialized information to solve a problem. Instead of navigating directly to court or legal aid websites, many typically type queries into their browsers. The results don't always yield relevant, high-quality legal guidance.

Courts and the legal aid community have invested considerable resources in improving their webpages and building state-of-the-art tools to help people research and resolve legal issues online. In the past year and a half, demand for this information skyrocketed as COVID-19 created new civil legal problems and forced offices that provide in-person

legal help to close their doors. The key question, though, remains whether those who need legal resources can find them online. And research shows the critical importance of search engine optimization (SEO) to make that happen.

Information hard to find if not near top of search results

Most people searching for information online view only the first page of results and click on one of the top three hits. Too often that does not include accurate, location-specific information from relevant courts and legal services providers.

In 2019, the Legal Design Lab at Stanford University worked with legal aid organizations in Hawaii and Florida to better understand the experiences of people who search for legal information online. The research

involved auditing search engine results pages using terms describing common civil issues in language that people without legal knowledge would use. For example, they could look for phrases such as "reasons landlord can evict" or "need advice on creditor judgments." The team wanted to see whether and where legal aid (.org) or court (.gov) websites ranked on the first page of Google search results for eviction, domestic violence, and debt collection queries.

Researchers found that neither type of website placed high in any of the issue areas compared with commercial sites ending in .com. No court websites made it to the first page of results. In fact, most of the .gov domains that appeared were federal sites, such as usa.gov or hhs. gov, rather than state or jurisdictional pages that contain the local legal information a searcher might need.

Eviction was the one issue area in which the states' legal aid websites appeared in the first page of results. Commercial sites still dominated, showing up almost four times more frequently in eviction searches and roughly six times more often in debt collection queries. Meanwhile, domestic violence proved to be the only issue area for which .org sites appeared more often albeit slightly—than .com ones.

The top three websites to appear on results pages were nolo.com, usnews.com, and creditcards.com—a commercial legal information and lawyer referral site, a commercial news site, and a commercial financial information site, respectively. Although searches were limited by ZIP code to regions in Florida and Hawaii, no state-specific legal aid sites showed up in the top 10 pages for any issue area.

Local legal subject matter experts in Hawaii and Florida pointed to local legal aid and court pages as the highest-quality sources for online legal self-help information on each issue. High-quality content exists, but people who need it cannot find it if Google search terms do not lead them to the most relevant information. Although this data comes from 2019, the pandemic has highlighted how pressing such concerns have become. Many people have struggled to find accurate local information since early 2020 as policies change and new programs, such as eviction diversion, have been implemented across the country.

Improved SEO would help

To increase web traffic, websites must compete for the prime virtual real estate at the top of a search engine results page. The winners tend to be the sites with the most effective search capabilities.

SEO encompasses the use of various tools and techniques to improve the ability of search engines, such as Google or Bing, to process, or "crawl," a site's content. Crawling allows search engines to assess the quality of web content and its relevance to search terms, and then

to determine where to place a site on a results page.

SEO "may seem like a bit of a geeky subject," said Dave Guarino, a software engineer and public policy analyst who develops civic websites, but it helps web managers meet the needs of people "as they express them." Before the pandemic, legal aid websites rarely used SEO to drive traffic to their sites, so it was difficult for them to compete with private legal help sites. Private websites offering legal help or other civic services, such as tax preparation, often curate their content to appear as though their assistance is free but may encourage users to pay for additional services or attorney consultations. In addition, the information they provide can be inaccurate or unverified.

Paying attention to SEO can help courts and legal aid providers improve how their sites appear in searches and increase the likelihood that their content reaches those who need it most. Still, many leaders don't realize that such fixes can be implemented easily.

J. Singleton manages the website for LawHelpMN. org, a nonprofit that provides civil legal guidance for Minnesota residents. "At the beginning of the pandemic, our team was creating so much great new video and other self-help content in response to increasing legal problems Minnesotans were facing," Singleton said. "But with our budget only allowing us a few hours a month of web developer time, it was hard to know if all the time and effort we were putting into content creation was paying off and if the right people were able access it."

Steps can be low-risk, highreward

Although further evaluation is needed to determine standard interventions that improve SEO for legal help websites, Google Search Console analytics and the Legal Design Lab's standard website markup language show promise. Sites can improve SEO by taking steps as simple as increasing webpage load speeds by eliminating unnecessary images or drafting content using language that matches how searchers would phrase their legal problems.

In a climate in which securing funding and enacting policies can take months or even years, committing to SEO improvements can help boost use of existing online resources with little additional financial commitment. Thoughtful implementation of SEO principles can make it easier for people without lawyers to fine online legal information and improve how they interact with the civil legal system.

Erika Rickard is a project director and Natasha Khwaja is an associate with The Pew Charitable Trusts' civil legal system modernization project.

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RETURN ON INVESTMENT

The Pew Charitable Trusts applies a rigorous, analytical approach to **improve public policy**, **inform the public**, and **invigorate civic life**, as these recent accomplishments illustrate.

IMPROVING PUBLIC POLICY



A frame of poles used to construct a conical tent sits among old-growth forest in Yellowknife, the capital city of Canada's Northwest Territories. Canada recently made a historic investment in Indigenous-led conservation efforts. The Pew Charitable Trusts

Canada announces sixfold increase in funding for Indigenous-led conservation

In August, Canada made a historic investment of \$340 million Canadian dollars (\$265 million) over five years in Indigenous-led conservation and stewardship initiatives, including CA\$173 million for Indigenous Guardians programs and CA\$164 million for the establishment of Indigenous Protected and Conserved Areas, as part of Canada's 2021 CA\$2.3 billion budget commitment to nature conservation. The new funding will help dozens of Guardians programs and Indigenous Protected and Conserved Areas that are in development thanks in part to the efforts of Pew's international boreal conservation campaign and its many partners. These funds represent a sixfold increase over the government's first investments in these initiatives in 2017 and 2018.

Public pension funds are in strong fiscal shape

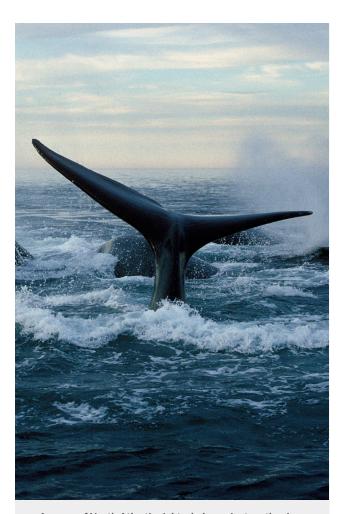
The Pew public sector retirement systems project's annual state pension funding gap issue brief, released in September, estimates that state retirement systems are now more than 80% funded for the first time since 2008. The improvement is particularly significant because it occurred during a recession in which many analysts predicted that revenue losses related to the COVID-19 pandemic would increase retirement fund shortfalls. Instead, Pew found increases fueled by market investment returns and substantially higher contributions from taxpayers and public employees to pension funds.

Pew makes recommendations on income-driven repayment policy for student loans

In September, Pew's project on student borrower success released recommendations for the U.S. Department of Education's negotiated rulemaking process, a series of meetings over three months at which higher education stakeholders meet and try to reach consensus on upcoming student loan regulations. Pew also provided data and calculations to help negotiators understand how changes to the formula for income-driven repayment—plans that link the amount borrowers must repay monthly to their current income—would alter repayment requirements and could affect borrower outcomes.

Pew-backed flood insurance approach implemented by FEMA

In October, the Federal Emergency Management Agency implemented the first phase of Risk Rating 2.0, a new flood insurance rating approach that marks the most significant change to the National Flood Insurance Program's rating system in 50 years. The new methodology will use catastrophic modeling—in which computer-generated calculations estimate losses that could be sustained in a hurricane or other natural disaster—in addition to other flood and structural data to make rates fairer, more transparent, and more closely aligned with actual flood risk. The new approach also ensures that lower-risk properties will pay less and that higher-risk properties will pay more. Pew provided critical support for the timely implementation of Risk Rating 2.0, including testifying before Congress, developing an interactive mapping tool featured on FEMA's website, securing dozens of media hits, and leading stakeholder support letters.



A group of North Atlantic right whales swim together in the Bay of Fundy, New Brunswick, Canada. Francois Gohier/ VWPics/Universal Images Group via Getty Images

Ocean warming and the study of North Atlantic right whales

In September, researchers supported by the Lenfest Ocean Program briefed more than 20 U.S. and Canadian officials on how, starting in 2010, a change in ocean conditions pushed endangered North Atlantic right whales' food source farther north. This brought the whales into new habitats in Canada that lacked key protections, exposing the whales to more threats from fishing gear entanglements and ship strikes. The findings, published in Oceanography, came shortly after the National Oceanic and Atmospheric Administration announced a new rule to protect the whales in the U.S. by seeking to reduce their entanglement in lobster and crab gear. Pew and its partners' multiyear campaign to push for this regulation—the first in seven years resulted in stronger conservation measures.

Australia's Northern Territory bans seabed mining

In August, the government of Australia's Northern Territory formalized a ban on seabed mining. Pew has worked for many years with the Northern Territory community, Traditional Owners, environmental groups, commercial and recreational fishers, tourism operators, and scientists to secure a ban on seabed mining, an emerging and highly destructive threat to the Northern Australian coasts. This action will provide enduring protection for the Northern Territory coasts and send a strong message that seabed mining presents an unacceptable risk to Australia's unique coastal waters, culture, and lifestyle.



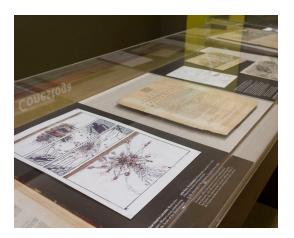
Dwarfing their operators in bright yellow jackets, deep-sea mining machines cut and collect minerals in the Pacific Ocean.

Nautilus Minerals/usgs.gov

INVIGORATING CIVIC LIFE

Pew Center for Arts & Heritage-supported projects and fellows receive significant recognition

Projects and fellows supported by the Pew Center for Arts & Heritage have recently received notable attention. The Library Company of Philadelphia, a research library focused on American history, received a 2021 Leadership in History Award from the American Association for State and Local History for its graphic novel and exhibition, "Ghost River: The Fall and Rise of the Conestoga." The Centersupported, multisite exhibition "Designing Motherhood: Things That Make and Break Our Births" has been featured by prominent media outlets, including extensive articles in The New York Times and The Guardian. Also, the pottery of Roberto Lugo, a 2019 Center fellow, was recently featured in a New York Times special section on fine arts and museums. And Mary Lattimore, a 2014 Center fellow, was featured in The New York Times in October, where she gave credit to her fellowship and how much it meant to her work.



Printed materials at the Library Company of Philadelphia date back to the early 18th century. The institution contains one of the nation's largest collections of rare books, manuscripts, pamphlets, broadsides, prints, and photographs related to early American history. Courtesy of the Library Company of Philadelphia

INFORMING THE PUBLIC

Increased partisan divides in trust in media

A Pew Research Center analysis published in August found that the percentage of Republicans with at least some trust in national news organizations has halved, from 70% in 2016 to 35% in 2021. Nearly 8 in 10 Democrats and Democratic-leaning independents (78%) say they have "a lot" or "some" trust in the information that comes from national news organizations. The 43-percentage-point partisan gap is the largest of any time that this question has been asked since 2016. It widens further—to 53 percentage points—between liberal Democrats (83%) and conservative Republicans (30%).

More working-age Americans don't have spouses or partners

An October Pew Research Center report analyzing economic and demographic characteristics of working-age Americans who are single and those married or living with an unmarried partner found that 38% of adults ages 25-54 were unpartnered (neither married nor living with a partner), up from 29% in 1990. Men are more likely than women to be unpartnered, which wasn't the case 30 years ago. The growth in the single population is driven mainly by the decline in marriage among adults who are of prime working age. At the same time, the share of cohabiting adults has risen, but not enough to offset the drop in marriage. Although the unpartnered population includes some adults who were previously married, all the growth in the unpartnered population since 1990 has come from a rise in the number of people who have never been married.

Most Americans—but fewer than in March—say it is important to prosecute the Capitol rioters

A September Pew Research Center report shows that most Americans continue to say it is important to find and prosecute those who broke into and rioted at the U.S. Capitol on Jan. 6, 2021. However, since March, that share of the public has declined from 87% to 78%, with the change coming almost entirely among Republicans and Republican-leaning independents. Moreover, only about a quarter of Republicans (27%) view the prosecution of the rioters as very important; six months ago, half said this was very important. Among Democrats and Democratic leaners, only modest changes in opinions were found: In September, 95% said it is important, including 80% who saw it as very important.



Demonstrators storm the U.S. Capitol on Jan. 6, 2021, to protest the ratification of the 2020 presidential election by Congress. Samuel Corum/Getty Images

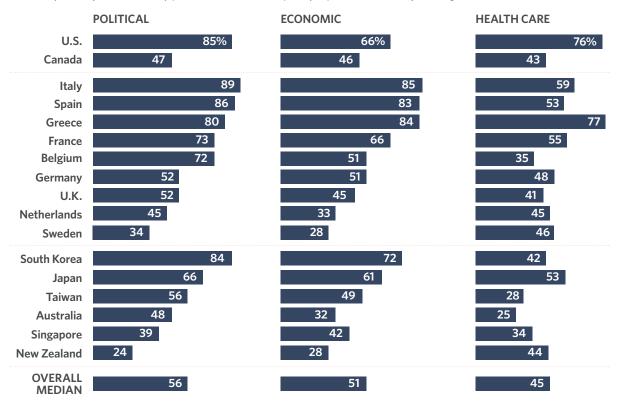


Citizens in Advanced Economies Want Significant Changes to Their Political Systems

As citizens around the world continue to grapple with a global pandemic and the changes it has brought to their everyday lives, many are also expressing a desire for political change. In a report released in October, the Pew Research Center surveyed 17 advanced economies and found that a median of 56% believe their political system needs major changes or needs to be completely reformed. There is also a strong desire for economic reform in many of the publics surveyed. In Italy, Spain and Greece—three countries where the economic mood has been mostly dismal for over a decade—at least 8 in 10 of those polled believe their economic systems need major changes or a complete overhaul. In comparison, there is less demand for changes to health care systems. But the U.S. and Greece are clear outliers: About three-quarters of Americans and Greeks say their health care system needs major changes or needs to be completely reformed.

Many see need for significant political, economic, and health care reform

% who say the _ system in (survey public) needs to be completely reformed/needs major change.





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