And it’s not just a father’s weight that can change his sperm epigenome. In February, Skinner published findings showing that men who underwent chemotherapy for bone cancer in their teens shared a signature of epimutations in their sperm about a decade later. Although his sample size was small—18 cases and the same number of controls—Skinner said the persistence of changes suggests that toxicants may permanently alter epigenetic marks in sperm stem cells, resulting in a lifetime of epigenetically altered sperm.

Skinner wants to see more studies on human paternal exposures and impacts on offspring and subsequent generations. He emphasized that studies should probe molecular-level changes in the epigenome that may explain the associations. He and a coinvestigator plan to study health outcomes in the offspring of human and rodent chemotherapy recipients. “When you do the exposure and you change the epigenetics of the germ line, you can’t predict what’s going to happen,” he said. “You just sort of have to look and see.”

It’s not fully understood how epigenetic changes may persist through generations. Two rounds of near-complete epigenetic erasure and reprogramming occur between fertilization and implantation and during gonadal sex determination. How some epimutations appear to survive these waves of reprogramming to promote epigenetic transgenerational inheritance will be an important question for future research.

**Malleable Marks**

There are early indications that some paternal lifestyle-associated effects on sperm and offspring can be reversed, with exercise and dietary changes, or surgery-induced weight loss, for example. Although several windows of susceptibility may exist for paternal exposures and some changes in sperm may be permanent, the few months leading up to conception may not be too late to make lifestyle changes, Soubry said. de Assis agreed: “If they can’t do it for their entire life, then at least in that period before conception.”

Soubry suggested that physicians can encourage male patients who plan on conceiving to eat a nutritious diet, quit smoking (even temporarily), drink moderately, and manage stress—all of which the Centers for Disease Control and Prevention already recommends for fathers-to-be. “That advice cannot harm, and I think it can even help to reduce the risks later on for the child,” Soubry said. Of course, behavior matters during pregnancy, too. Fathers—along with mothers and domestic partners—can have a profound effect on the health of pregnancies.

Kitlinska stressed that future studies should look at the combined effects of maternal and paternal factors, including epimutations. “Usually when we design experiments, we look at the effect of paternal exposures or maternal exposures, but really I think it’s an interplay of both.”

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**The JAMA Forum**

### Is the Affordable Care Act Imploding?

**Larry Levitt, MPP**

President Trump has said on various occasions that the Affordable Care Act (ACA) is imploding, exploding, or collapsing.

There is very little evidence for this. The ACA includes 2 main components. One is an expansion of Medicaid. The other is new rules for private insurance plans along with tax credits to make coverage more affordable for low- and middle-income persons buying through new insurance marketplaces.

The Medicaid component—which expanded eligibility up to 138% of the poverty level for all adults—seems to be working just fine, with 11.2 million newly eligible people enrolled. Nineteen states have chosen not to expand Medicaid at this point (following an earlier Supreme Court decision that made the expansion optional for states). But the program can hardly be described as collapsing.

Presumably the president is referring instead to the ACA’s health insurance marketplaces and the individual insurance market. Since 2014, health insurers have been required to offer coverage to everyone, including people with preexisting conditions, and prohibited from varying premiums by health status. The hope was that a stick (the individual mandate) and carrot (tax credits that subsidize premiums) would convince enough younger and healthier people to sign up to balance out those who are older and sicker.

However, the enrollment mix has skewed more toward individuals who are older and sicker than insurers expected, and many had to raise premiums significantly in 2017–22% on average for benchmark plans in the marketplaces. So, maybe the ACA marketplaces are, in fact, collapsing? The evidence suggests otherwise.

Enrollment declined by about half a million in 2017, but even so, 12.2 million people signed up for coverage in the marketplaces, hardly a sign of collapse.

The Congressional Budget Office concluded recently that the individual insurance market “would probably be stable in most areas” under the ACA.

The reference to “most areas” is important, because insurers pool risk at the state level and choose whether to participate in the marketplaces on a county-by-county basis. That means there are really more than 3,000 different insurance markets.
3000 separate insurance markets across the country, so it's impossible to generalize.

There were some fragile insurance markets going into 2017—particularly in rural areas, with low population density and little competition among hospitals and physicians—but by and large, the marketplaces have been stabilizing and improving.

A recent S&P analysis showed insurer financial performance in the individual market improving in 2016, with an expectation for continued improvement, assuming "business as usual."

The "business as usual" part is a key caveat. The marketplaces are not collapsing, but the Trump administration has the tools at its disposal to make them implode (that is, as defined by Merriam-Webster, "collapse inward as if from external pressure").

The first signs were mixed: the administration cancelled advertising about marketplace coverage scheduled to air during the last 2 weeks of open enrollment, likely suppressing enrollment. It also pulled back on plans to strengthen enforcement of the individual mandate. On the other hand, it issued new proposed regulations to promote market stability that should encourage insurers.

The next and most significant sign of whether the Trump administration is looking to undermine the marketplaces or make them work effectively is how they handle so-called "cost-sharing reduction" payments to insurers.

Insurers are required to provide low-income marketplace enrollees with plans that have lower deductibles and copays. The federal government makes payments to insurers to cover the additional cost involved, totaling about $7 billion this year. The House of Representatives sued the Obama administration, challenging its authority to make these payments, and a district court judge sided with the House. The Obama administration had planned to appeal and was continuing to make the payments while the suit was in progress.

The payments would continue if Congress appropriated funding to cover them or the Trump administration appeals the decision. Alternatively, the administration could immediately end the payments.

If the federal government stops making the payments to insurers, they would be forced to raise marketplace premiums to cover the difference (an estimated 19% increase). Or, more likely, insurers would see the move as a signal that the administration is looking to undermine the marketplaces and just exit the market altogether.

The Trump administration had been equivocal about whether it supports continuing the payments, although President Trump recently suggested in an interview with the Wall Street Journal that he might withhold the payments to encourage Democrats to negotiate over revisions to the ACA. "Obamacare is dead next month if it doesn't get that money," the president said. "I haven't made my viewpoint clear yet. I don't want people to get hurt ... What I think should happen and will happen is the Democrats will start calling me and negotiating."

Insurers have to make initial decisions about whether they will participate in the marketplaces in 2018 and what premiums they will charge by June 21. Ambiguity over how the Trump administration will operate the program and what Congress may do could lead insurers to leave the marketplaces or raise premiums significantly as a hedge against the uncertainty. Already, Humana has announced it will leave the market entirely, and Wellmark and Aetna have said they will pull out of Iowa.

Widespread insurer exits—which could leave counties with no insurers and therefore no ability for people to obtain coverage or premium tax credits—would no doubt lead to finger pointing and debate about who is to blame: former President Obama and Democrats or President Trump and congressional Republicans. Kaiser Family Foundation polling suggests that President Trump and Republicans would get the short end of that stick, with 61% of Americans holding them responsible for any future ACA problems.

Who gets blame could influence who has leverage in a debate about how to address problems that arise, which could also reopen broader discussion about repealing and replacing the ACA. But, regardless of who the public assigns responsibility to, chaos in the marketplaces could lead to many people losing coverage without any vote taken in Congress.

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