1. **DTC Genetic Testing Arguably improves Access to Health Information.**

 Today, medical-grade genetic testing is performed for a variety of reasons. Doctors may recommend an individual undergo genetic testing if there is a risk of genetic disorder, like birth defects, developmental disability, family history of early deaths, etc.[[1]](#footnote-1) Insurance coverage of genetic testing varies; from test to test, provider to provider, and state to state. For example, over 35 states medicaid programs covers BRCA-related genetic testing,[[2]](#footnote-2) which, for example, is the mutation gene site linked to increase incidence of breast cancer. Insurers will also typically cover tests recommended by providers, albeit their policys vary.[[3]](#footnote-3)

 Direct-to-consumer testing is usually not considered medical grade, meaning that it is usually a less comprehensive examination of the consumer’s DNA. Also, testing companies also vary wildly in their test effectiveness and comprehensiveness. The FDA plays a smaller regulatory role with DTC companies, and typically only review DTC tests for “moderate to high-risk medical purposes, which may have a higher impact on medical care.”[[4]](#footnote-4) The FDA reviews the tests’ analytical validity, clinical validity, and whether the results match the company’s marketing claims.

 For consumers who have utilized DTC tests that have been approved by the FDA, the outcomes of the tests can provide valuable, albeit sometimes limited, health information. These tests are usually less expensive, and can provide information on genetic health risks and carrier status. Although these tests do not provide a full picture of genetic health, they are a very affordable way to learn more about family history (via genealogy), and predisposition to hereditary risk factors. While DTC tests can’t be relied on solely, they are a strong entrypoint for better understanding user’s genetic health, which may drive better habits and health decisions moving forward.

1. **Law Enforcement Can Leverage DTC Genetic Databases to Solve Crime.**

 Another benefit of DTC testing, which is somewhat contreversial, is the rise in law enforcement use of these private companies databases to solve crimes; both violent and non-violent. Law enforcement runs DNA samples from crime scene evidence into a genetic testing companies’ database, and use familial matches to expand their suspect pool. In the past, both local and federal law enforcement had secretly uploaded crime-scene evidence to find these matches.[[5]](#footnote-5) Now, use by law enforcement varies widely with the company policies, with some openly allowing use by police officers to identify violent criminals[[6]](#footnote-6) and with others complying only if subpoenas are issued.[[7]](#footnote-7)

 These unofficial partnerships have already generated results. For example, in 2018, Sacramento police officers were able to identify the Golden State Killer, by uploading crime scene evidence to GEDMatch’s open database and matching with several familial third-cousins. GEDMatch is a primary resource being used by law enforcement to find these distant matches, and is an agnostic platform where users can upload their results from other DTC companies to match with familial members who may have utilized other DTC services. FamilyTreeDNA has openly worked with the FBI in providing access to it’s genetic database.[[8]](#footnote-8) In 2018, when GEDMatch’s database encompassed about 0.50% of the US adult population, researchers speculated that about 60.0% of white Americans could be identified from a DNA sample, even if they had never provided a sample themselves.[[9]](#footnote-9) Once the company’s database grows to about two percent of the population, more than 90.0% of people of European Descent will likely be discoverable through distant relative matches. Access to this broad pool of potential criminals will only increase law enforcements ability to solve crime.

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2. *Paying for genetic services,* Facing Our Risk of Cancer Empowered (FORCE) (visited Jan. 5, 2018) https://www.facingourrisk.org/understanding-brca-and-hboc/information/finding-health-care/paying\_for\_testing/basics/medicaid\_and\_genetic\_testing.php. [↑](#footnote-ref-2)
3. See e.g., *Genetic testing*, Aetna.com, <http://www.aetna.com/cpb/medical/data/100_199/0140.html> (last visited May 16, 2019). ; see also Kathryn Krhanhold, *Genetic Tests Are Changing Care, That’s Why Blue Shield Covers Nearly 70 of Them*, Blue Shield California News (Nov. 19, 2018), https://news.blueshieldca.com/2018/11/19/genetic-testing. [↑](#footnote-ref-3)
4. *Direct to Consumer Tests*, fda.gov, https://www.fda.gov/medical-devices/vitro-diagnostics/direct-consumer-tests (last visited May 16, 2019). [↑](#footnote-ref-4)
5. seth augenstein, Exclusive: The FBI Had Already Accessed FamilyTreeDNA’s Database Before Cooperation, Forensic Magazine (Mar. 19, 2019), https://www.forensicmag.com/news/2019/03/exclusive-fbi-had-already-accessed-family-tree-dnas-database-cooperation. [↑](#footnote-ref-5)
6. *See e.g.*, GEDmatch.com Terms of Service and Privacy Policy, GEDMatch.com (last updated May 20, 2018), https://www.gedmatch.com/tos.htm. [↑](#footnote-ref-6)
7. 23andMe guide for law enforcement, 23andme.com, https://www.23andme.com/law-enforcement-guide/ (last visited May 16, 2019); Ancestry Guide for Law Enforcement, Ancestry.com, https://www.ancestry.com/cs/legal/lawenforcement (last visited May 16, 2019). [↑](#footnote-ref-7)
8. Salvador Hernandez, *One of the biggest at-Home dNA testing company is working with the FBI*, BuzzFeed, https://www.buzzfeednews.com/article/salvadorhernandez/family-tree-dna-fbi-investigative-genealogy-privacy (Jan. 31, 2019) [↑](#footnote-ref-8)
9. Jocelyn Kaiser, *We Will Find You: DNA Search Used To Nab Golden State Killer Can Home In On About 60% of White Americans*, Science Magizine (Oct. 11, 2018), https://www.sciencemag.org/news/2018/10/we-will-find-you-dna-search-used-nab-golden-state-killer-can-home-about-60-white. [↑](#footnote-ref-9)