

# Effects of Abortion in Georgia, USA

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**Abstract:** The legal definition of the term ‘abortion’ is the ‘termination of pregnancy by various methods, including medical surgery, before the fetus is able to sustain independent life’. Georgia has had one of the highest abortion rates in the United States, with a rate of 16.9%, as of 2017 [6]. In this research, I will be comparing the abortion rates in Georgia from 2010 to 2018. The results of this topic will include the understanding of factors behind abortions and solutions to this ongoing issue. In the end, this research can be used nationally and locally by abortion clinics.

## 1 Abortion and its Consequences

Abortion has been practiced in every culture known to mankind since the beginning of the civilization. Kaplan, Schauer, and Chare observe that Ancient Assyria, now known as Northern Iraq, was the first country to create a law to condemn abortion as a crime. Early Hebrew law considered abortion as a crime, unless the procedure was necessary to save the mother’s life. The Greeks allowed abortion, but Hippocrates, the well-known physician, disapproved of the procedure; he believed “It [abortion] violated a doctor’s responsibility to heal” [3]. Abortion is a well-known controversial topic about which everyone’s opinion is divided; there is no one side to this never-ending issue.

“Abortion is defined as the ending of a woman’s pregnancy due to the death of the embryo (fetus) in the mother’s womb” [7]. More than a hundred years ago, abortion was considered a criminal act in the U.S. “In 1859, the AMA passed a resolution condemning abortion as a criminal act” [3]. Then in 1973 the United States Supreme Court decided the *Roe v. Wade* case, declaring that the Constitution of the United States protects a pregnant woman’s right to make the decision of having an abortion without immoderate restriction from the Government. Before this case, there was a movement within the American Medical Association (AMA) against abortion. *Roe v. Wade* was the case that changed the situation in the United States. Yet even though there was a Supreme Court ruling on abortions, some states still have their own restrictions regarding abortion. One-fourth of the world has laws that restrict women from making it their choice to obtain an abortion.

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Abortion comes with the consequences of psychological, physical, and social side-effects. For decades, abortion has been known for causing mental instability, and sometimes even suicide. Some women who have received abortions can experience a form of Post-Traumatic Stress Disorder (PTSD) called Post-Abortion Stress Syndrome (PASS). This term has yet to be accepted by either the American Psychiatric Association or the American Psychological Association, because it is believed to have been made up by people who are pro-life (against abortions) to further their platform politically. “Women who suffer from PASS experience the same symptoms as someone who is suffering from PTSD such as guilt, anxiety, depression, flashbacks, suicidal thoughts, etc.” [4].

One may experience guilt after getting an abortion because one may feel like they made a mistake or that they were not more thoughtful about the situation prior. One can also experience guilt from society, from their families, their religion, their culture, etc. Guilt from having an abortion comes from the fear of what others may think about the decision made. Anxiety comes into play after getting an abortion because one never knows what to expect. Some people feel anxious about getting an abortion because they are worried about having fertility issues or not being able to conceive a child afterwards. Anxiety about abortions can also come from experiences in the past, such as prior abortions, which can trigger one’s anxiety in their present situation. Depression is a symptom one can exhibit for multiple reasons after getting an abortion. The woman could be sad about losing her baby, the thought of going through with the abortion, or letting go of the thought process of the decision. Flashbacks are another symptom of post-abortion stress since although abortion is considered surgery, the woman is conscious the entire time. A flashback in this instance would be remembering how one felt the moment after receiving an abortion, causing a trigger.

Women seek abortions based on personal circumstances such as socioeconomic status, age, health, parity, and marital status. Biggs, Gould, and Foster report that the reasons that women seek abortions fall into 11 broad themes, but the main themes are “financial reasons (40%), timing (36%), partner related reasons (31%), and the need to focus on other children (29%). Most women (64%) reported multiple reasons for seeking an abortion crossing over several themes” (954 women from 30 different abortion facilities in the United States were included in this sample) [1]. Other reasons why women seek abortions, also included in this research, are the new baby interfering with future opportunities, not being emotionally or mentally prepared, health-related reasons (health of the fetus, drug, tobacco, or alcohol use, birth control use, etc.), lack of maturity or independence, and a plethora of additional reasons. Some women are unemployed, don’t have health insurance, and don’t qualify for Government Assistance Aid, which is the reason why getting an abortion is the solution to their problem.

There are numerous ways to end a pregnancy such as a medical abortion, with the use of drugs or a surgical procedure. Abortions can happen naturally in miscarriages or by inducing the pregnancy intentionally; both may be considered early abortions. “In early medical abortion, up to nine weeks, drugs are used. In the United States, the two drugs used are methotrexate and misoprostol” [7]. Methotrexate is “given by injection and stops the embryo’s cells from dividing” [7]. Misoprostol, a medication used to prevent the occurrence of stomach ulcers and decrease the risk of ulcer complications such as bleeding, is then “inserted into the vagina, often by the woman at home, five to seven

days after the methotrexate injection. ... The woman experiences cramping and bleeding and the embryo is usually expelled within a week” [7].

The most common method used for abortions for women who are in later stages of pregnancy, typically about five to twelve weeks of pregnancy, are the vacuum method, medically known as suction aspiration. “During a vacuum aspiration abortion, a thin tube is eased into the uterus through the cervix (the passage that links the vagina to the womb). By using a pump, the contents of the uterus pass out of the womb and into the tube” [7].

The surgical method used for women who are fifteen to nineteen weeks pregnant is called dilation and evacuation. Since the baby is too large to be removed from the womb by suction at this stage of the pregnancy, the doctor has to give the woman either general anesthesia or a shot through the abdomen, if later in the second trimester, to stop the fetus’ heart. Another surgical method used for women who are twenty to twenty-four weeks pregnant is called a surgical two-stage abortion, medically known as a medical induction, where two operations are used to remove the fetus from the womb. “During a medical induction, the fetal heart is usually stopped, and then the doctor uses drugs to induce early labor” [7].

As stated before, abortion is such a controversial topic worldwide that the debate has caused two groups to form to project their thoughts and feelings about abortion issues, Pro-life and Pro-choice. Pro-life is defined as “those in favor of outlawing abortions, and of empowering the government to determine whether specific types of abortion should be allowed” [5]. People who are pro-life believe that human life begins at conception and “all abortions involve the killing of innocent children” [7]. Pro-choice is defined as “those in favor of allowing women to make all relevant decisions regarding conception, contraception, pregnancy and abortion” [5]. Some women believe that they should be able to make their own decisions, especially when it comes to abortion, because it’s their body. “Pro-choice supporters believe that abortion is not wrong in itself and should be far more widely available throughout the world” [7]. People who are pro-choice believe that no one should be able to tell a woman what she can and cannot do with her own body; getting an abortion is a woman’s freedom of choice and action.

## 2 Abortion Data in Georgia

Georgia has had one of the highest abortion rates in the United States.

It is not easy to find yearly totals to compare, but Table 1 gives one list, which shows the numbers decreasing from 2010 to 2014, then rising again. We will model the portion of the curve from 2010 to 2015 where the decline appears to be exponential (as shown in Figure 1).

**Georgia Abortions by year**

year	abortions
2010	31,315
2011	29,558
2012	28,036
2013	27,456
2014	26,485
2015	26,612
2016	29,551
2017	27,453
2018	28,544

Table 1: Abortions Performed in Georgia 2010-2018 [2].

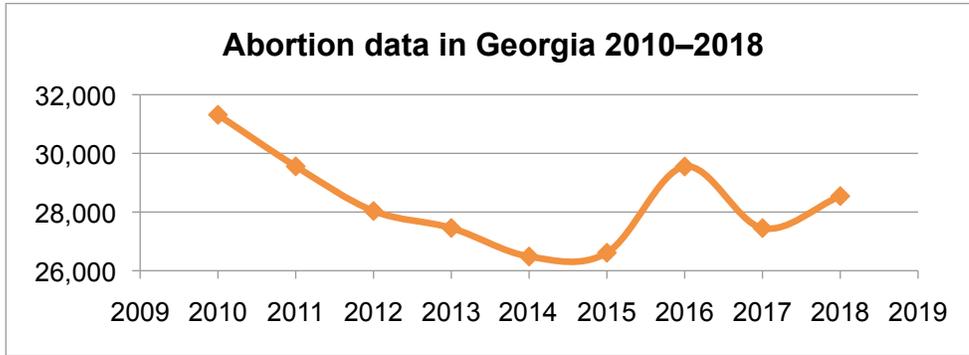


Figure 1 Graph of abortion data 2010–2018 as reported in [2].

### 3 Calculations to Model Decline 2010 to 2015

For the years 2010-2015, we see a curve suggestive of exponential decline, from the differential equation  $y' = ky$ , for which the solution is  $y = Ce^{kt}$ . Thus we choose two points of data from which we can calculate  $C$  and  $k$ .

If we set  $t = 0$  in 2012, we get  $y = 28,036$  and  $C = 28,036$ .

Then in 2013,  $t = 1$ , and the data gives us  $y = 28,036e^{kt}$ , or

$$y = 27,456 = 28,036e^k$$

$$\ln(27,456) = k + \ln(28,036)$$

$$k = \ln(27,456/28,036) = \ln(0.979312312) = -0.020904675.$$

Thus the general solution is

$$y = 28,036 e^{-0.020904675t}.$$

A graph of this solution is shown in Figure 2.

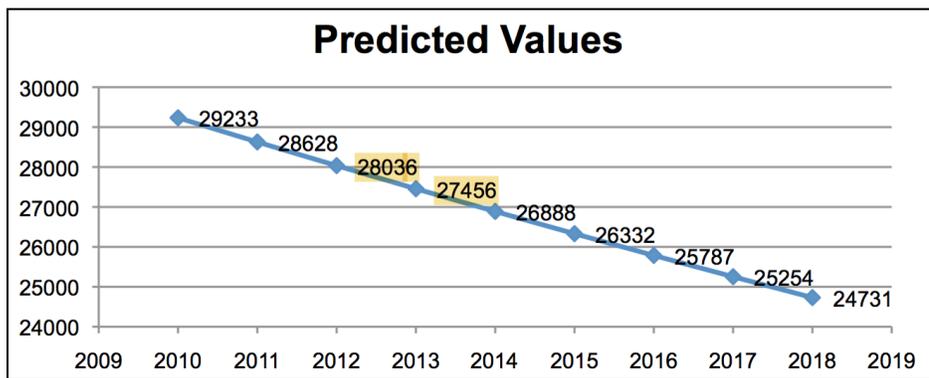


Figure 2. Predicted values calculated from  $y = 28,036e^{-0.020904675t}$ , which was computed from the data for 2012 and 2013.

The lowest number of predicted cases, based on this graph, would be 24,731 in 2018, if the exponential decrease continued.

## 4 Comparing Predictions with Data

According to Figure 2, each year from 2010 to 2018, the number of abortion cases should have decreased. But this trend is not realized in the data for the years 2016-2018, as shown in Table 1. The graph of Figure 3 merges Figures 1 and 2 to highlight this discrepancy.

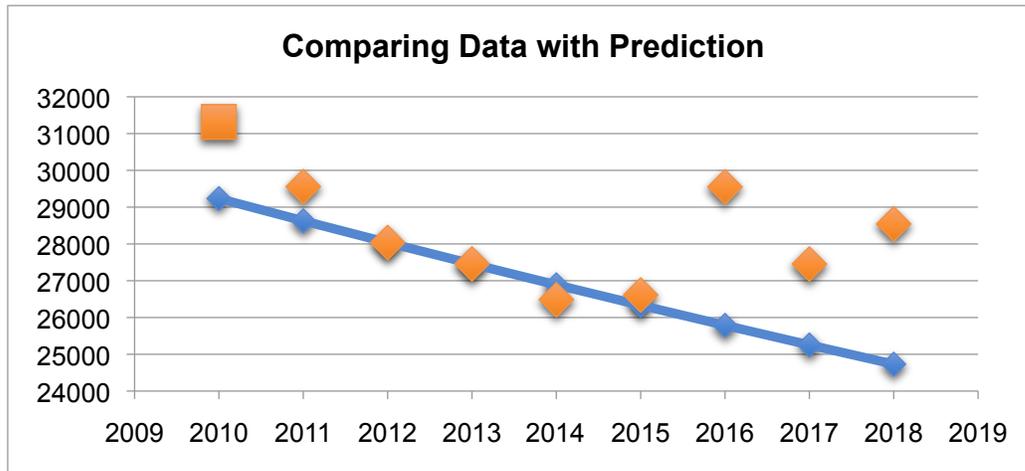


Figure 3: The blue line is the graph of our solution,  $y = 28,036e^{-0.020904675t}$ , as shown in Figure 2.; the orange diamonds are the data points from Table 1 and Figure 1.

As we see in Figure 3, the number of actual abortions has not continuously decreased since 2014. Since the number of abortions *increased* after 2014, it shows that the previous solutions used to reduce these numbers are no longer working, which is why I created two solutions that could continue to lower the number of abortions.

## 5 Possible Solutions to Stop Numbers Rising

A solution that could decrease the number of abortions in Georgia would be getting local churches more involved with women. Churches could come up with a program that helps women with making their decision on whether to get an abortion. Instead of performing the abortions or referring the women to abortion clinics, the churches would be there for guidance for the women while making this tough decision.

Another solution that could decrease the number of abortions in Georgia would be making access to abortions less necessary to women. What this means is that in order to reduce the large number of unexpected pregnancies, we, as a whole, need to show dedication to obtaining the accessibility to thorough sexuality education, which will include medically correct information concerning abstinence and contraception. This also means greater access to emergency contraception (Plan B, birth control, etc.).

In conclusion, abortion is defined as the ending of a woman's pregnancy due to the death of the embryo (fetus) in the mother's womb. It is such a world-known controversial topic that the debate has caused two groups to form to project their thoughts and feelings

about abortion issues, Pro-life and Pro-choice. Women who seek abortions base their decision on their own personal circumstances. Regardless of Pro-life and Pro-choice, women still have the right to decide what they want to do with their bodies.

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