

Opportunistic Salpingectomy to Reduce the Risk of Ovarian Cancer

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Abstract. Substantial medical evidence shows that about half of ovarian cancers originate in the fallopian tube. Some medical organizations and clinical articles have suggested opportunistic salpingectomy to reduce the risk of ovarian cancer in patients at average risk of developing it. This entails removing the fallopian tubes at the same time as another procedure that would occur anyway. The authors argue that the principles of totality and double effect can justify such salpingectomies, even though there is a low incidence of ovarian cancer. Since screening tools for ovarian cancer are ineffective and treatment options are poor, the good effect of reducing the risk of death from this type of ovarian cancer can be proportionate to the bad effects of the minor increase in surgical risk over the other procedure, the unintended side effect of infertility, and the removal of normally functioning tissue. The authors conclude that it is within the purview of a patient and physician to determine whether the benefits are proportionate to the risks in a particular case. *National Catholic Bioethics Quarterly* 16.1 (Spring 2016): 99–131.

Modern medicine presents a dilemma for classic moral reasoning regarding amputation and excision of body parts in the treatment of disease. Catholic moral theology has long recognized the legitimacy of amputating or removing one part of the body

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to treat a pathology, as long as it is ordered to the benefit of the whole.¹ A common understanding of this application of the principles of totality and double effect would hold that a pathology must be present in the tissue to be excised in order to justify the infringement of the body's integrity. This understanding would apply even for procedures that involve removing reproductive organs.

To the contrary, however, Pope Pius XII taught that it is *not* necessary that the excised organ “be itself diseased, but that its retention or functioning either directly or indirectly brings about a serious threat for the whole body.”² In cases involving the removal of life-threatening reproductive organs, he also distinguished between actions in which the agent directly intends sterilization as an end or a means of removing the threat (which are not morally justified) and those actions that “will as a necessary consequence render procreation impossible, but this impossibility may not be desired either as an end or as a means” (which are morally justified).³ Combined, these two moral parameters provide a basis for distinguishing between morally justified procedures that prevent disease—yet result in sterilization as an indirect, unintended, but foreseen side effect—and those that intend sterilization as a means to achieve what would otherwise be a laudable goal of disease prevention.⁴

Today, new diagnostic techniques, especially in genomic medicine, allow us to know that some people are predisposed to a disease long before it develops. Physicians and patients have used such knowledge to justify the removal of body parts before a pathology manifests itself. For example, risk-reducing surgery has become common practice with patients who are known to have an increased risk of developing cancer. In some cases, these preventive measures involve removing reproductive organs, which consequently induces sterility in the patient.

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1. Thomas Aquinas, *Summa theologiae* (*ST*) II-II.65.1 corpus; and Pius XII, Address to the Congress of the Italian Association of Urology (October 8, 1953), *AAS* 45 (1953): 674–675.

2. “Soit malade lui-même, mais que son maintien ou son fonctionnement entraîne directement ou indirectement pour tout le corps une menace sérieuse.” Pius XII, Address to Congress of Urology, 1953. English translations of this and other allocutions by Pius XII have been made by Becket Gremmels.

3. “Aura comme conséquence nécessaire de rendre impossible la procréation, mais cette impossibilité peut n’être pas voulue soit comme fin, soit comme moyen.” Pius XII, Address to Participants in the Seventh International Congress of Hematology (September 12, 1958).

4. This same basic moral reasoning is applied in Congregation for the Doctrine of the Faith (CDF), “Responses to Questions Proposed concerning ‘Uterine Isolation’ and Related Matters” (July 31, 1993).

Recently, several Catholic ethicists have concluded that such measures could be justified within a Catholic moral framework.⁵ In short, they conclude that patients who are at an increased risk of developing a specific cancer do not necessarily violate their moral obligation to preserve the totality and integrity of the gift of their body by choosing to undergo procedures which reduce the risk of cancer by removing the organ that is likely to give rise to the disease. Their conclusion also applies to the removal of reproductive organs: even though those organs may not currently be pathological in a manner that immediately threatens the patient's life, there is a significant likelihood that they will become pathological in the future.

However, recent statements from medical organizations and prominent articles in the literature suggest taking this rationale a bit further in one unique scenario. Over the past several years, it has become clear that the fallopian tube is the origin of many if not most cases of ovarian cancer.⁶ Even though ovarian cancer is not as common in women as other types of cancer, it is one of the deadliest, as the literature review below will show. The high mortality rate is due in part to the fact that no screening test exists to identify the disease at an early stage, the symptoms are generic and attributable to many other more common illnesses, the average patient is not diagnosed until the cancer has already metastasized, and treatments for advanced stages are not very effective. Ovarian cancer is particularly troubling since it is often not detected until later stages, when treatment is less effective, leaving risk-reduction or prevention as the best hope for preventing deaths from ovarian cancer. On this basis, several notable organizations have recommended that physicians now offer, in certain situations, total removal of both fallopian tubes (bilateral salpingectomy) to patients at *population* (average or normal) risk of developing ovarian cancer.⁷ The

5. Timothy P. Collins, "On the Morality of Risk-Reducing Surgery," *National Catholic Bioethics Quarterly* 15.1 (Spring 2015): 53–72; Rachele Barina, "Risk-Reducing Salpingectomy and Ovarian Cancer: Chasing Science, Changing Language, and Conserving Moral Content," *National Catholic Bioethics Quarterly* 14.1 (Spring 2014): 67–79; Tadeusz Pacholczyk, "Drastic Measures and Cancer Decisions," *Making Sense of Bioethics*, March 2011, www.ncbcenter.org/; Christine Cimo Hemphill, Kathryn Karges, and Renée Mirkes, "Reducing Uterine and Ovarian Mortality Risks of Religious Sisters: A Critique and Counterproposal," *National Catholic Bioethics Quarterly* 12.3 (Autumn 2012): 237; and Gerald D. Coleman et al., "Prophylactic Salpingectomy to Reduce the Risk of Cancer: Ethical Considerations," *Health Care Ethics USA* 23.1 (Winter 2015): 23–33.

6. Niloofer N. Nik et al., "Origin and Pathogenesis of Pelvic (Ovarian, Tubal, and Primary Peritoneal) Serous Carcinoma," *Annual Review of Pathology: Mechanisms of Disease* 9 (January 2014): 27–45; and Felix Zeppernick et al., "Precursors of Ovarian Cancer in the Fallopian Tube: Serous Tubal Intraepithelial Carcinoma—An Update," *Journal of Obstetrics and Gynaecology Research* 41.1 (January 2015): 6–11.

7. American College of Obstetricians and Gynecologists (ACOG), Committee on Gynecologic Practice, "Salpingectomy for Ovarian Cancer Prevention," Committee Opinion Number 620, *Obstetrics and Gynecology* 125.1 (January 2015): 279–281; Society of Gynecologic Oncology, "Salpingectomy for Ovarian Cancer Prevention," SGO Clinical Practice Statement, November 2013, <https://www.sgo.org/>; Luca Gianaroli et al., "Best Practices of ASRM and ESHRE: A Journey through Reproductive Medicine," *Fertility and Sterility* 98.6 (December 2012): 1389; and Jessica McAlpine et al., "Opportunistic Salpingectomy: Uptake,

frequency of this practice is increasing dramatically, to the degree that some physicians have argued that it has the potential to replace most if not all tubal ligations, where tubal ligations could become a thing of the past.⁸

Regardless of what one thinks about such a prediction, we conclude that such a procedure could be justified from a Catholic moral standpoint on the basis of the principles of totality and double effect, *under certain conditions*. We will first provide a medical overview of ovarian cancer and the recommendations themselves, then describe the relevant moral principles, and finally apply the latter to the former while laying out the conditions required for the procedure to be justified. In making this argument, we intend to use the available theological, philosophical, medical, and scientific evidence to think with the Church about complex bioethical issues. Faithful to the Church's moral tradition, we propose an argument for discussion that may be subject to review by competent authority, that is, the magisterium. If, in its final judgment, the magisterium determines that this argument is not in accord with Church teaching, or if further medical research does not substantiate the medical facts or claims described in this article or uncovers new evidence of substantial burdens associated with salpingectomy under these conditions, we will faithfully submit to the magisterium and withdraw the argument. We hope that our analysis and conclusion will contribute to the fields of Catholic bioethics and Catholic health care.

Medical Overview

As cancer treatment has improved over the past few decades, the focus in oncology has broadened to include prevention as well as cure. One prophylactic option is simply to remove the tissue that has a chance of becoming malignant before it does so, thus lowering the risk of developing cancer. While it is considered the standard of care in a number of situations to offer the surgical removal of body parts to prevent cancer, and while we believe that the reasoning in those cases is generally analogous to the question at hand, we will address only one such intervention here: bilateral salpingectomy to reduce the risk of serous ovarian cancer in those at population (average) risk. We will discuss the epidemiology of ovarian cancer, its pathophysiology, and finally the medical rationale for offering such an intervention.

Epidemiology of Ovarian Cancer

In 2012, there were 239,000 diagnoses of ovarian cancer worldwide and 152,000 deaths.⁹ The lifetime risk of developing ovarian cancer in the United States is 1.3 percent, meaning that about one in seventy women will suffer from ovarian cancer

Risks, and Complications of a Regional Initiative for Ovarian Cancer Prevention,” *American Journal of Obstetrics and Gynecology* 210.5 (May 2014): 471.e1–471.e11.

8. Mitchell D. Creinin and Nikki Zite, “Female Tubal Sterilization: The Time Has Come to Routinely Consider Removal,” *Obstetrics and Gynecology* 124.3 (September 2014): 596–599; see also McAlpine et al. “Opportunistic Salpingectomy,” 471.e4–471.e5.

9. Bernard W. Stewart and Christopher P. Wild, *World Cancer Report 2014* (Lyon, France: International Agency for Research on Cancer, 2014), 467.

by the age of seventy.¹⁰ In developed countries, ovarian cancer has an incidence of 9.4 per 100,000 women and a mortality rate of 5.1 per 100,000.¹¹ A significant amount of this mortality is due to the late stage at which the average patient is diagnosed. Since ovarian cancer has few or no symptoms in its early stages, most patients are diagnosed when the disease is already advanced, meaning the cancer has already metastasized and spread to another site in the body.¹² Only 15 percent of new diagnoses are localized, meaning the cancer is confined to the ovary itself. Slightly more are diagnosed with regional spread (19 percent), meaning the cancer has spread near the original site. However, the vast majority (60 percent) are diagnosed with metastatic disease distant from the original site, or stage IV.¹³

Two factors in particular make it difficult to detect ovarian cancer earlier in the disease process. First, symptoms of ovarian cancer usually involve “pelvic or abdominal pain, urinary frequency or urgency, increased abdominal size or bloating, and difficulty eating or feeling full.”¹⁴ Since these symptoms are vague and nonspecific, patients and physicians easily attribute them to menstruation or other causes. Certainly nothing in the list is particular to or suggestive of ovarian cancer. Consequently, neither patients nor providers have any reason to suspect any illness or malignancy until it is very serious. An early diagnosis “is often more a matter of chance than a triumph of the scientific method.”¹⁵ Yet it is incorrect to conclude from this that a late diagnosis results from a misdiagnosis of earlier symptoms, or that symptoms increase significantly in advanced stages of the illness. Rather, there appears to be little correlation between the type or duration of symptoms and the stage of the disease process.¹⁶

10. National Cancer Institute, “Ovary Cancer,” SEER Stat Fact Sheet, *Cancer.gov*, accessed December 3, 2015, <http://seer.cancer.gov/statfacts/>.

11. Lee-may Chen and Jonathan S. Berek, “Epithelial Carcinoma of the Ovary, Fallopian Tube, and Peritoneum: Epidemiology and Risk Factors,” *UpToDate*, updated August 14, 2014, <http://www.uptodate.com/>.

12. World Cancer Research Fund and American Institute for Cancer Research, *Ovarian Cancer Report 2014: Food, Nutrition, Physical Activity and the Prevention of Ovarian Cancer* (Washington, DC: AICR, 2014), 6, <http://www.aicr.org/>.

13. There are two methods of staging (FIGO and TNM) that do not always correspond, and few data on stage at time of diagnosis are available using the method we think most readers will know (FIGO) which uses stage I, stage II, stage III, and stage IV. However, the distant stage (TNM) and stage IV (FIGO) do correlate exactly. For a conversion between the two, see William Helm et al., “Ovarian Cancer Staging: TNM and FIGO Classifications for Ovarian Cancer,” *Medscape.com*, updated August 7, 2015, <http://emedicine.medscape.com/>.

14. Jonathan Berek, Michael Friedlander, and Neville Hacker, “Epithelial Ovarian, Fallopian Tube, and Peritoneal Cancer,” in *Berek and Hacker’s Gynecologic Oncology*, 5th ed., ed. Jonathan S. Berek and Neville F. Hacker (Philadelphia: Lippincott Williams and Wilkins, 2010), 450.

15. Eric L. Eisenhauer, Ritu Salani, and Larry J. Copeland, “Epithelial Ovarian Cancer,” in *Clinical Gynecologic Oncology*, 8th ed., ed. Philip J. Di Saia and William T. Creasman (Philadelphia: Elsevier, 2012), 292.

16. Berek et al., “Epithelial Ovarian, Fallopian Tube, and Peritoneal Cancer,” 450.

Second, no effective screening test currently exists for ovarian cancer.¹⁷ A number of methods exist, such as pelvic examination, transvaginal or transabdominal ultrasound, and blood tests for tumor markers like CA 125, yet they all carry a high rate of false-positive results, and evaluation of a false-positive result is associated with complications and unnecessary side effects from unnecessary follow-up procedures.¹⁸ While the sensitivity of these tests increases in later stages of ovarian cancer, the rates of false-positive results and follow-up complications are high enough that the tests are not recommended for routine use.¹⁹ Moreover, the majority of true positives occur at such an advanced stage that the likelihood of improving a patient's chances of survival is very low.²⁰ A definitive diagnosis, therefore, can only be made with exploratory surgery, typically done by laparoscopy.²¹ Thus, even if physicians suspect that a patient's generic symptoms could be caused by ovarian cancer, they have no easy, accurate, or noninvasive means to determine whether that is actually the case.

Unfortunately, the mortality rates for ovarian cancer are skewed heavily toward the later stages, similar to the time of diagnosis. Five years after diagnosis, 92 percent of patients who had localized disease at diagnosis and 72 percent of those with regional metastases are still alive. Only 28 percent of patients diagnosed with distant metastases are alive five years later.²² Thus, while the incidence of ovarian cancer is rather small (lung cancer is found in 60 per 100,000 people), it is nonetheless quite concerning given its high mortality rate. For example, ovarian cancer accounts for about 3 percent of cancer diagnoses in women, yet it causes nearly 6 percent of cancer deaths among women.²³ In comparison, breast cancer accounts for 26 percent of cancer diagnoses in women but only 15 percent of their cancer deaths. Therefore, the late stage of diagnosis and high degree of mortality make preventive steps for ovarian cancer particularly valuable.²⁴

17. Eisenhauer et al., "Epithelial Ovarian Cancer," 294; and Berek et al., "Ovarian, Fallopian Tube, and Peritoneal Cancer," 446.

18. Sandra S. Buys et al., "Effect of Screening on Ovarian Cancer Mortality: The Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Randomized Controlled Trial," *JAMA* 305.22 (June 8, 2011): 2295–2303. We believe this is also true for newer potential screening tools still in clinical trials. See Ian J. Jacobs et al., "Ovarian Cancer Screening and Mortality in the UK Collaborative Trial of Ovarian Cancer Screening (UKCTOCS): A Randomized Controlled Trial," *Lancet* 387.10022 (March 5, 2016): 945–956.

19. Robert Smith et al., "Cancer Screening in the United States, 2014: A Review of Current American Cancer Society Guidelines and Current Issues in Cancer Screening," *CA: A Cancer Journal for Clinicians* 64.1 (January–February 2014): 44–45; Berek et al., "Epithelial Ovarian, Fallopian Tube, and Peritoneal Cancer," 446; and Eisenhauer et al., "Epithelial Ovarian Cancer," 294.

20. Buys et al., "Effect of Screening," 780.

21. Berek et al., "Epithelial Ovarian, Fallopian Tube, and Peritoneal Cancer," 450–452; and Eisenhauer et al., "Epithelial Ovarian Cancer," 295.

22. National Cancer Institute, "Ovary Cancer."

23. Ahmedin Jemal et al., "Cancer Statistics, 2008," *CA: A Cancer Journal for Clinicians* 58.2 (March–April 2008): 96.

24. National Cancer Institute, "Ovary Cancer."

Pathophysiology of Serous Ovarian Cancer

While there are several different subtypes of ovarian cancer, distinguishable in part by their microscopic appearance and location of origin, this analysis will focus on one in particular: high-grade serous ovarian cancer. This type was chosen because it is the one thought to be preventable by risk-reducing salpingectomy. It is also the most aggressive and most common type of ovarian cancer. High-grade serous ovarian cancer progresses more rapidly than other types of ovarian cancer and “stands out among other subtypes for its aggressive nature.”²⁵ This means that patients with this subtype are typically diagnosed at a later stage than those with other types of ovarian cancer, and consequently have a poorer prognosis.²⁶

A significant cause of this high mortality rate is the lack of effective treatment options. Some other subtypes of ovarian cancer carry a relatively good prognosis because they are more responsive to therapy—for example, endometrioid or clear-cell carcinoma.²⁷ Serous carcinoma, on the other hand, still has no good, consistently effective treatment regimen, which means that low-grade tumors carry a better prognosis because they grow more slowly, whereas high-grade ones have poorer prognosis because they grow faster.²⁸ Sadly, high-grade serous carcinoma is also the most prevalent subtype of ovarian cancer. The vast majority (95 percent) of ovarian cancer is epithelial, and most (75 percent) are characterized as serous, 90 percent of which are high-grade.²⁹ Thus, 64 percent of all ovarian cancer is of the high-grade serous type.

Historically, the origin of epithelial ovarian cancer was somewhat of a clinical mystery. While it was traditionally believed to originate from epithelial cells on the ovary (those that encompass its outermost layer), it has always been associated with cancer of the fallopian tube and peritoneum, since the three commonly appear together. It was originally thought that either this phenomenon was due to ovarian

25. Christopher P. Crum and Jonathan Bijron, “Pathogenesis of Ovarian, Fallopian Tubal, and Peritoneal Serous Carcinomas,” *UpToDate*, last edited September 2014, <http://www.uptodate.com/>; and Alison M. Karst, Keren Levanon, and Ronny Drapkin, “Modeling High-Grade Serous Ovarian Carcinogenesis from the Fallopian Tube,” *Proceedings of the National Academy of Sciences* 108.18 (May 3, 2011): 7547.

26. Mara H. Rendi, “Epithelial Carcinoma of the Ovary, Fallopian Tube, and Peritoneum: Histopathology,” *UpToDate*, last edited December 2013, <http://www.uptodate.com/>; David D. L. Bowtell, “The Genesis and Evolution of High-Grade Serous Ovarian Cancer,” *Nature Reviews Cancer* 10.11 (November 2010): 804; and Crum, “Pathogenesis of Serous Carcinomas.”

27. Rendi, “Epithelial Carcinoma of the Ovary”; and Crum, “Pathogenesis of Serous Carcinomas.”

28. Crum, “Pathogenesis of Serous Carcinomas.”

29. J.V. Lacey and M.E. Sherman, “Ovarian Neoplasia,” in *Robboy’s Pathology of the Female Reproductive Tract*, 2nd ed., ed. Stanley J. Robboy et al. (Oxford, UK: Churchill Livingstone Elsevier, 2009), 601; and Jeffrey D. Seidman et al., “The Histologic Type and Stage Distribution of Ovarian Carcinomas of Surface Epithelial Origin,” *International Journal of Gynecological Pathology* 23.1 (January 2004): 41–44.

cancer that spread to the tube and peritoneum, or that these three were separate cancers that just happened to develop simultaneously. Now it is thought that the three are actually one cancer that has a single etiology but has spread to different sites. This relatively recent concept seems very plausible for a number of reasons. First, all three bear a striking clinical resemblance to each other, both in their symptoms and treatment.³⁰ In fact, it is recommended that they all be treated in the same manner, with the same medications and the same regimen.³¹ Second, recent findings indicate that a number of genetic markers in these cancer cells are the same as those found in epithelial cells of the fallopian tube.³² In particular, mutations in the TP53 gene, especially its inactivation, are indicative markers of cancer that originates in the epithelial cells of the fallopian tube.³³

Third, histological analyses show that anywhere from 35 to 64 percent of high-grade serous peritoneal cancers originate in the fallopian tubes.³⁴ Several cellular features are indicative of tubal origin: the absence of cilia, cellular polarity (the unique structure and shape of cells as determined by their function), and cells undergoing mitosis, as well as numerous structural abnormalities in the nucleus, including increased size, less cytoplasm, irregular nuclear membranes, and irregular distribution of chromatin (the larger package that stores DNA while it forms chromosomes during mitosis).³⁵ Since 64 percent of all ovarian cancer is of the high-grade serous type, at the very least 22 to 41 percent of all ovarian cancer is high-grade serous cancer that originates in the fallopian tubes. However, this latter number is probably higher, as it does not account for those that are not primarily peritoneal lesions. While further research could certainly expand the percentage of ovarian cancers that might be prevented by salpingectomy, it would not seem to add much to the discussion either way because, as mentioned above, the prognosis of other subtypes is much better given their slow rate of growth.

Fourth, all of this explains another lingering clinical mystery. Some patients at high risk for developing ovarian cancer, who had undergone a prophylactic oopho-

30. Chen and Berek, "Epithelial Carcinoma;" and Crum, "Pathogenesis of Serous Carcinomas."

31. Thomas Herzog and Deborah Armstrong, "First-Line Chemotherapy for Advanced (Stage III or IV) Epithelial Ovarian, Fallopian Tubal, and Peritoneal Cancer," *UpToDate*, updated September 2014, <http://www.uptodate.com/>; and Chen and Berek, "Epithelial Carcinoma."

32. R.J. Kurman, "Origin and Molecular Pathogenesis of Ovarian High-Grade Serous Carcinoma," *Annals of Oncology* 24 suppl 10 (December 2013): x16–x21; Rendi, "Epithelial Carcinoma of the Ovary"; and Crum, "Pathogenesis of Serous Carcinomas."

33. Ahmed Ashour Ahmed et al., "Driver Mutations in TP53 Are Ubiquitous in High Grade Serous Carcinoma of the Ovary," *Journal of Pathology* 221.1 (May 2010): 50.

34. Crum, "Pathogenesis of Serous Carcinomas."

35. Christopher G. Przybycin et al., "Are All Pelvic (Nonuterine) Serous Carcinomas of Tubal Origin?," *American Journal of Surgical Pathology* 34.10 (October 2010): 1408–1409; and David W. Kinderberger et al., "Intraepithelial Carcinoma of the Fimbria and Pelvic Serous Carcinoma: Evidence for a Causal Relationship," *American Journal of Surgical Pathology* 31.2 (February 2007): 162.

rectomy but whose fallopian tubes were left intact, are known to have later developed peritoneal carcinomas.³⁶ Naturally, this left physicians wondering how one develops ovarian cancer without ovaries. The answer, it appears, is that the ovaries were never the cause of these cancers to begin with.

Given this significant evidence, it seems very likely that the fallopian tube is the origin of many if not most high-grade serous ovarian cancers. At the very least, it plays a necessary role in their development. There is even some evidence that the fallopian tube might be the origin of some low-grade serous carcinomas as well.³⁷ As research continues, the fallopian tube could be found to be the origin or a necessary component of even more subtypes of ovarian cancer.

Opportunistic Bilateral Salpingectomy

The idea of surgical amputation or removal of body parts to reduce the risk of cancer has been around for several decades, especially for those who have an increased risk of developing cancer because of genetic mutations or a family history.³⁸ For some patients at increased risk of developing breast cancer, removing the ovaries and fallopian tubes decreases the risk even further than mastectomy alone. One large study found that bilateral salpingo-oophorectomy (BSO) reduced the risk of breast cancer by 49 percent for carriers of the BRCA1 mutation and by 72 percent for BRCA2.³⁹ However, recent statements by physician organizations and recommendations in the literature go further than this.

The Society of Gynecologic Oncology released a statement in 2013 on salpingectomy for ovarian cancer prevention, which summarizes this position the best. It recommends that physicians discuss the option of bilateral salpingectomy with women at average risk for ovarian cancer “(after completion of childbearing) at the time of hysterectomy, in lieu of tubal ligation, and also at the time of other pelvic surgery.”⁴⁰ This approach is described elsewhere as “opportunistic salpingectomy for ovarian, fallopian tubal, and peritoneal carcinoma risk reduction.”⁴¹ The term “opportunistic”

36. Joseph Carlson et al., “Serous Tubal Intraepithelial Carcinoma: Its Potential Role in Primary Peritoneal Serous Carcinoma and Serous Cancer Prevention,” *Journal of Clinical Oncology* 26.25 (September 2008): 4161, 4164–4165; and Berek et al., “Epithelial Ovarian, Fallopian Tube, and Peritoneal Cancer,” 444.

37. Russell Vang, Ie-Mingh Shih, and Robert J. Kurman, “Fallopian Tube Precursors of ‘Ovarian’ Low- and High-Grade Serous Neoplasms,” *Histopathology* 62.1 (January 2013): 44–58; and Jie Li et al., “Tubal Origin of ‘Ovarian’ Low-Grade Serous Carcinoma,” *Modern Pathology* 24.11 (November 2011): 1488–1499.

38. Mary B. Daly et al., “Genetic/Familial High-Risk Assessment: Breast and Ovarian,” *Journal of the National Comprehensive Cancer Network* 8.5 (September 2010): 585.

39. Noah D. Kauff et al., “Risk-Reducing Salpingo-Oophorectomy for the Prevention of BRCA1- and BRCA2-Associated Breast and Gynecologic Cancer: A Multicenter, Prospective Study,” *Journal of Clinical Oncology* 26.8 (March 2008): 1331–1337.

40. Society of Gynecologic Oncology, “Salpingectomy for Ovarian Cancer Prevention.”

41. Dianne Miller and Jessica McAlpine, “Opportunistic Salpingectomy for Ovarian, Fallopian Tubal, and Peritoneal Carcinoma Risk Reduction,” *UpToDate*, updated August 2014, <http://www.uptodate.com/>.

refers to the fact that the salpingectomy is only performed concurrent with another surgery in the pelvic or abdominal area. This substantially lowers the surgical risks of salpingectomy as the patient would otherwise be undergoing the general risks of anesthesia and infection anyway. Thus, the immediate risks added exclusively by the salpingectomy are minimal.⁴² However, even though the long-term risks of bilateral salpingectomy are not thought to be significant, they are not well established.⁴³

In fact, the standard of care appears to be changing to at least include offering bilateral salpingectomy as an option to all patients in these three circumstances. This fact is reflected by the increasing number of hysterectomies that are accompanied by bilateral salpingectomy (11 to 35 percent) and by the fact that many physicians (26 to 68 percent) now routinely remove both fallopian tubes with all hysterectomies.⁴⁴ Previously, half to three-quarters of fallopian tubes were typically left in the body after a hysterectomy, as the intent was only to remove the uterus, not the tubes. A smaller but significant percentage of physicians (8 to 28 percent) perform salpingectomy instead of tubal ligation.⁴⁵ *UpToDate*, a commonly used online resource featuring current reviews by established experts, has an entire entry dedicated solely to this topic.⁴⁶

To be clear, not everyone agrees with this approach. Some argue that the data are not sufficient to warrant such widespread use of salpingectomy and that what data we do have were not designed to state what proponents of opportunistic salpingectomy claim.⁴⁷ Even though in theory it seems that salpingectomy would prevent serous ovarian cancer, this cannot be proved without prospective studies, which could take at least a decade. Some preliminary retrospective data do exist, and salpingectomy was found to reduce the occurrence of ovarian cancer by 42 percent.⁴⁸ Certainly more research and data are needed before one can definitively say that opportunistic salpin-

42. Michele Morelli et al., "Prophylactic Salpingectomy in Premenopausal Low-Risk Women for Ovarian Cancer: Primum Non Nocere," *Gynecologic Oncology* 129.3 (June 2013): 448–451.

43. Elizabeth M. Poole et al., "Salpingectomy as a Potential Ovarian Cancer Risk-Reducing Procedure," *Journal of the National Cancer Institute* 107.2 (February 2015).

44. C. Sandoval et al., "Examining the Use of Salpingectomy with Hysterectomy in Canada," *Current Oncology* 20.3 (June 2013): 173–175; McAlpine et al., "Opportunistic Salpingectomy," 471.e3; Clare J. Reade et al., "Risk-Reducing Salpingectomy in Canada: A Survey of Obstetrician-Gynaecologists," *Journal of Obstetrics and Gynaecology of Canada* 35.7 (July 2013): 631; and M.W. Kamran et al., "Opportunistic and Interventional Salpingectomy in Women at Risk: A Strategy for Preventing Pelvic Serous Cancer (PSC)," *European Journal of Obstetrics and Gynecology* 170.1 (July 2013): 252.

45. Kamran et al., "Opportunistic and Interventional Salpingectomy," 252; and Reade, "Risk-Reducing Salpingectomy," 632.

46. Miller and McAlpine, "Opportunistic Salpingectomy," 2014.

47. John Thiel, "It Sounded Like a Good Idea at the Time," *Journal of Obstetrics and Gynaecology of Canada* 34.7 (July 2012): 611–612.

48. Cecilie Madsen et al., "Tubal Ligation and Salpingectomy and the Risk of Epithelial Ovarian Cancer and Borderline Ovarian Tumors: A Nation-Wide Case-Control Study," *ACTA Obstetrica et Gynecologica Scandinavica* 94.1 (January 2015): 86–94.

gectomy reduces the risk of ovarian cancer for women at average risk of developing it. That being said, the current debate and likely upcoming changes in the standard of care are forcing Catholic ethicists to assess whether these changes comport with Catholic moral theology. To make such an assessment, we must first identify and define the moral concepts and terminology that we will use in our analysis.

Relevant Moral Concepts

A number of moral principles are particularly relevant to arguing for the licitness of the above interventions, including the principle of totality, the principle of double effect, and the three classical fonts of morality: the object of the act, the intention of the agent, and the circumstances. We will identify and describe these principles before applying them to the questions described above.

Principle of Totality

As stated in the introduction to this paper, the primary operative principle for these interventions is the principle of totality, which holds that body parts cannot be removed, amputated, mutilated, or disfigured unless doing so benefits the whole body. This principle has both a theological and a philosophical basis. Theologically, the principle is based on the responsibility and obligation we all have as the stewards of our bodies. This account of stewardship recognizes that our bodies and our lives are gifts from God, who alone has full dominion over creation. As a result, we cannot dispose of them however we see fit, but instead we must respect the inherent dignity of our body. After all, “your body is a temple of the Holy Spirit . . . [and] . . . you are not your own” (1 Cor. 6:19). We do not have “unlimited power to perform acts of anatomical or functional destruction or mutilation.”⁴⁹ We are free, however, to dispose of individual parts [of our body] for their destruction or mutilation, when and to the extent necessary for the good of [our] being as a whole.”⁵⁰ This is typically done only in extreme cases in which the sacrifice of a lower function allows the whole person to continue to function.⁵¹

Philosophically, the principle is based on the metaphysical relationship of a part to the whole. Without the whole, a part cannot and would not exist; its existence is derived from and dependent on the existence of the whole. In turn, a part exists to benefit the whole; a part is ordered to the good of its whole. Thus, a part cannot be removed without harming the whole, since each part of the body is *per se* beneficial to the whole.⁵² However, if the part becomes a threat to the good or the health of the overall whole, then it can be sacrificed, since a part is subordinate to the whole.

49. “Un pouvoir illimité de poser des actes de destruction ou de mutilation de caractère anatomique ou fonctionnel,” Pius XII, Address to the First International Congress of Histopathology of the Nervous System (September 13, 1952).

50. “Il peut disposer des parties individuelles pour les détruire ou les mutiler, lorsque et dans la mesure où c’est nécessaire pour le bien de l’être dans son ensemble,” *Ibid.*

51. Benedict Guevin, “The Principles of Informed (Proxy) Consent and Totality in the Reputable Practice of Medicine,” *American Journal of Jurisprudence* 41.1 (1996): 200–201.

52. *ST II-II.65.1 corpus.*

The magisterium has confirmed the principle of totality on several occasions.⁵³ Again, Pius XII articulates and clarifies the three conditions that are necessary to justify a surgical intervention that results in anatomic or functional mutilation:

1. The retention or function of a particular organ within the whole organism is causing serious damage or constitutes a threat to it.
2. The damage or threat cannot be avoided, or even notably diminished, except by a mutilation in question whose efficacy is well assured.
3. It is reasonable to expect that the negative effect will be compensated for by the positive effect.⁵⁴

Directive 29 of the *Ethical and Religious Directives for Catholic Health Care Services (ERDs)* also articulates this thinking: “All persons served by Catholic health care have the right and duty to protect and preserve their bodily and functional integrity. The functional integrity of the person may be sacrificed to maintain the health or life of the person when no other morally permissible means is available.”⁵⁵

The differences between the principles of integrity and totality are important for understanding their application to the topic at hand. The principle of *integrity* refers to our obligation to “retain an understanding of the whole human person in which the values of intellect, will, conscience and fraternity are preeminent” within a hierarchy of values.⁵⁶ The principle of *totality*, on the other hand, refers to our “duty to preserve intact the *physical* component of that integrated whole,” since it contributes to the realization of the whole person, as a means to that ultimate end.⁵⁷

Principle of Double Effect

The principle of double effect (PDE) is also applicable. In fact, Pius XII expressly mentions that these scenarios are permitted by “the general principles

53. Benedict XIV, quoted in David Lang, “Elective Child Circumcision and Catholic Moral Principles,” *National Catholic Bioethics Quarterly* 12.1 (Spring 2012): 108; Pius XI, *Casti connubii* (December 31, 1930), n. 71; Pius XII, Address to Congress of Histopathology (1952); and *Catechism*, n. 2297.

54. “Le maintien ou le fonctionnement—d’un organe particulier dans l’ensemble de l’organisme provoque en celui-ci un dommage sérieux ou constitue une menace. Ensuite que ce dommage ne puisse être évité, ou du moins notablement diminué que par la mutilation en question et que l’efficacité de celle-ci soit bien assurée. Finalement, qu’on puisse raisonnablement escompter que l’effet négatif, c’est-à-dire la mutilation et ses conséquences, sera compensé par l’effet positif.” Pius XII, Address to Congress of Urology (1953).

55. US Conference of Catholic Bishops, *Ethical and Religious Directives for Catholic Health Care Services*, 5th ed. (Washington, DC: USCCB, 2009).

56. Vatican Council II, *Gaudium et spes* (December 7, 1965), n. 61.

57. Orville N. Griese, *Catholic Identity in Health Care: Principles and Practice* (Philadelphia: Pope John XXIII Medical–Moral Research Center, 1987), 204–206, emphasis added; see also *ST II-II.65.1 corpus*.

governing acts with a double effect.”⁵⁸ Although an action involving the destruction of the reproductive faculties can be morally justified for its direct therapeutic effects, its contraceptive effects must also be *indirect*, that is, its contraceptive effects must be incidental to the direct therapeutic effects and cannot be directly intended. The PDE applies to actions which have two foreseeable effects, one that is good and one that is bad. Some actions can never be justified by the PDE, or by any other rationale, since they are immoral by reason of their immoral object; an example is contraceptive sterilization, articulated in our introduction.⁵⁹ The fact that an agent has good intentions or will achieve a good outcome cannot morally justify an act that is immoral in its very object.⁶⁰

That being said, an action could be justified under certain conditions so long as it is not intrinsically immoral, even though it will result in a bad effect. If the bad effect is merely an unintended consequence of the agent’s action, it can justifiably be tolerated and the action morally justified under certain conditions. The PDE identifies four such conditions, or criteria, for assessing the moral standing of an action that carries both a good effect and an evil effect:

1. The object of the act (the *finis operis*) is good or at least morally neutral.
2. The agent’s direct intention (*finis operantis*) is only to bring about the good effect and not the evil effect.
3. The good effect is not achieved by means of the bad effect.
4. The good effect is proportionate to the bad effect.

If *all* these conditions are met, then the action can be justified.⁶¹ A physician ordering chemotherapy is a good example to illustrate the application of the PDE:

1. The object of the act of administering chemotherapy is for its curative effects, which is morally good.
2. The physician directly intends to cure the cancer and not to cause the foreseeable toxic side effects, like nausea, vomiting, infertility, cardiotoxicity, and nephrotoxicity.
3. Cancer is not cured by the bad side effects of chemotherapy but by the death of the cancer cells.

58. “Qui recte permittit secundum principium generale actionum ad effectum duplicem.” Pius XII, Address to Congress of Hematology (1958). For a discussion of this, see Griese, *Catholic Identity*, 219.

59. John Paul II, *Veritatis splendor* (August 6, 1993), nn. 78–83.

60. *Catechism*, nn. 1751–1761.

61. Henry C. Peschke, *Christian Ethics: A Presentation of General Moral Theology in the Light of Vatican II* (Worcester, UK: C. Goodliffe Neal, 1975), 209–213; Martin Rhonheimer, *Vital Conflicts in Medical Ethics: A Virtue Approach to Craniotomy and Tubal Pregnancies* (Washington, DC: CUA Press, 2009), 2; and Griese, *Catholic Identity*, 248–255. Note that Griese separates the second criterion into two, but the four-total-criteria formulation of the PDE is still widely accepted, as evidenced by the other works cited here.

4. Curing the cancer and surviving outweigh the bad side effects of chemotherapy.

If possible, the physician would avoid the bad side effects. However, sometimes very toxic chemotherapies must be used because less toxic treatments have failed, do not exist, or are not as successful. From the physician's perspective, the bad side effects are foreseen but indirect; they are *not* what she directly intends. Thus, while one can accurately say that the physician has sterilized a patient with chemotherapy, this is not the object of the physician's action; neither is it the physician's direct intention or the means used for curing the patient. Rather, it is an unfortunate consequence of an action undertaken solely for its directly curative effects.

In the current context of risk-reducing interventions for oncology, the PDE could justify removing reproductive organs that are cancerous in order to cure the cancer or prevent its spread. Pope Paul VI made this clear by saying that "the Church does not consider at all illicit the use of those therapeutic means necessary to cure bodily diseases, even if a foreseeable impediment to procreation should result there from."⁶² While this was made in the context of the removal of testicles to slow the spread of prostate cancer, the analogy still stands. This principle is also reflected in directive 29 of the ERDs, quoted above, and directive 53: "Direct sterilization of either men or women, whether permanent or temporary, is not permitted in a Catholic health care institution. Procedures that induce sterility are permitted when their direct effect is the cure or alleviation of a present and serious pathology and a simpler treatment is not available."

Thus, if an intervention meets the criteria of double effect, it can be morally justified even though it might induce sterility or compromise the functional integrity of a person's organs.

The Object of the Act

The meaning of the term "object of the act" is key to understanding the moral assessment of an action within the Catholic moral tradition. Catholic theologians have long identified three aspects of an action as its "sources of morality": the object, the intention, and the circumstances. The object of an action is described in the *Catechism of the Catholic Church* as follows: "The *object* of the act is a good toward which the will deliberately directs itself. It is the matter of a human act. The object chosen morally specifies the act of the will, insofar as reason recognizes and judges it to be or not to be in conformity with the true good. Objective norms of morality express the rational order of good and evil, attested to by conscience."⁶³

For some actions, the object by itself can be enough to make the action morally unjustified.⁶⁴ These actions "have been termed 'intrinsically evil' (*intrinsece malum*): they are such *always and per se*, in other words, on account of their very object, and

62. Paul VI, *Humanae vitae* (July 25, 1968), n. 15.

63. *Catechism*, n. 1751.

64. *Ibid.*, n. 1755.

quite apart from the ulterior intentions of the one acting and the circumstances.”⁶⁵ For example, blasphemy, perjury, murder, and adultery are always morally wrong.⁶⁶ No exigent circumstances can justify such actions; the agent’s subjective intention, no matter how good or praiseworthy, is never sufficient to validate them.⁶⁷

The Intention of the Agent

Another source of the moral character of an action is the intention of the person performing that action. Intention, in this sense, is an action of the will by which it orders the means of an action toward the end of that action.⁶⁸ It is how the agent’s will determines the type of action that the agent does. The intellect identifies potential actions, ends, and the means to achieve them, and it uses practical reason to sift through these possibilities, but it is the will through intention that chooses the action that an agent ultimately performs. The Catechism describes intention as follows:

In contrast to the object, the *intention* resides in the acting subject. Because it lies at the voluntary source of an action and determines it by its end, intention is an element essential to the moral evaluation of an action. The end is the first goal of the intention and indicates the purpose pursued in the action. The intention is a movement of the will toward the end: it is concerned with the goal of the activity. It aims at the good anticipated from the action undertaken. . . . One and the same action can also be inspired by several intentions. (n. 1752)

There are, in this account, at least two intentions in every action. First, the *proximate* intention is found in the object of the person’s action; it is the *immediate* goal or purpose for the action.⁶⁹ The object is also, in part, the means used to achieve the agent’s final intention. Agents necessarily intend those means insofar as they choose them by doing them to achieve the ultimate end.⁷⁰ This immediate intention opens the door to an imperfect but potential objective evaluation of an agent’s subjective intention. While good insight into an individual’s intent can be gleaned by their choice of means, only God truly knows what is in our hearts and minds.⁷¹

Second, the ulterior or *remote* intention is the agent’s *ultimate* goal or purpose for the action. In some cases, the proximate intention and the remote intention may coincide, but not always. The remote or final intention supplies the answer to the question, why are they doing this? Thus, the final intention is the goal that an agent seeks to achieve by performing an action. This is an inherently subjective factor and only the agent (and God) can definitively say what the intention is. In short, one manner of knowing what people are trying to do, other than simply asking them, is to

65. John Paul II, *Veritatis splendor*, nn. 79–82.

66. *Catechism*, n. 1756.

67. *Ibid.*, nn. 1752, 1759, 1760; and Thomas Aquinas, *Collationes in decem praeceptis*, art. 1.

68. *ST I-II*.12.1 ad 4; and *I-II*.12.2 corpus.

69. *ST I-II*.19.1 corpus.

70. *ST I-II*.18.6 corpus.

71. 1 Sam. 16:7; 1 Kings 8:39; Prov. 16:2; 21:2; 1 Chron. 28:9; Jer. 17:9–10; and 1 Cor. 2:11.

observe what they are doing. Therefore, if the stated intention is not compatible with the observed actions, then it could be a sign of deceit by the agent. However, it could also be a sign of confusion by the agent or the observer. For example, it might appear to an observer that a driver ran a stop sign on purpose, but in reality the driver may have believed there was no stop sign because it was blocked by a tree. Similarly, the observer may have been incorrect in assuming that the driver was supposed to stop; there may have been no stop sign at all. Thus, perceived incompatibility between an agent's action and stated intention does not necessarily indicate deceit by the agent.

The Circumstances of an Action

The third font of morality is the circumstances in which an action takes place. Using a metaphysical description, a circumstance is considered the “accident” of an action.⁷² A circumstance is not the action *per se*, such as the object described above; a circumstance surrounds the object, it might even touch the object, but it is definitively not the object.⁷³ Aquinas lists seven types of circumstances: who, what, where, by what aids, why, how, and when.⁷⁴ Clearly most of these are typically incidental to describing the object of an act, but they are all necessary to fully describe a particular action itself. For example, one does not need to know which hospital a patient is in (where), what time an IV bag was hung (when), or which nurse hung the bag (who) to know that a patient received chemotherapy (object). Not all circumstances are of equal relevance. Aquinas names why and what as the most important because they touch the intention and the object of an action respectively.⁷⁵

Circumstances are necessary for understanding and assessing the *whole* or *complete* morality of an action. No circumstance can make an action good if its object is evil, nor can circumstances make up for bad intentions, but a circumstance can turn an otherwise good action into a bad one. To continue with the chemotherapy analogy, an intentional overdose of chemotherapy is objectively wrong no matter where, when, or by whom it is given, because intentional overdoses are wrong by reason of their object. Additionally, circumstances can influence how good or bad an action is. For example, a massive overdose in chemotherapy that results in severe toxicity or even death is much worse than a slight overdose that causes little to no effect on the patient. Circumstances can also lessen the personal culpability or guilt of an agent. The Catechism points out that circumstances “can also diminish or increase the agent’s responsibility (such as acting out of fear of death).”⁷⁶ Moreover, “the imputability or responsibility for an action can be diminished or nullified by ignorance, duress, fear, and other psychological or social factors.”⁷⁷ For example, a

72. *ST I-II.7.1 corpus.*

73. *Ibid.*

74. *ST I-II.7.3 corpus.*

75. *ST I-II.7.4 corpus.*

76. *Catechism*, n. 1754.

77. *Ibid.*, n. 1746. See also John Paul II, *Evangelium vitae* (March 25, 1995), n. 18, where he writes, “Decisions that go against life sometimes arise from difficult or even tragic situations of profound suffering, loneliness, a total lack of economic prospects, depression

nurse might be less culpable for giving an unintentional overdose of chemotherapy if the pharmacy filled the bag incorrectly, especially if the label reflects the correct dosage. Thus, while circumstances may not be the primary determinative factor in assessing the objective morality of an action, they are indispensable to a complete moral analysis.

The Concept of Pathology

While “pathology” is not actually a moral principle, an important caveat must be added here with regard to the understanding of pathology that is typically at work when the above moral principles are applied. The principle of totality is often (and erroneously, as we have explained) interpreted to mean that healthy body parts can never be amputated, removed, impaired, or rendered incapable of functioning.⁷⁸ Similarly, the PDE is often intimately intertwined with the concept of pathology, so much so that one might think it cannot justify the removal of body part unless the removal directly cures a pathology.⁷⁹ However, these interpretations are not complete in their understanding of these principles, as shown by the following four reasons.

First, the concept of pathology in medicine is broader than the narrow interpretation often offered by theologians and ethicists.⁸⁰ Some pathologies involve an interplay of multiple areas in the body. For example, a patient with renal failure and heart failure has a different set of compounding problems that require different treatment than a patient with either disease in isolation. Yet a combined pathology like this can also involve healthy and pathological tissue. Normally functioning tissue can exacerbate problems elsewhere in the body, leading both tissues to be viewed as a joint or combined pathology. The removal or suppression of either tissue could be involved in treatment of the pathology. Pius XII’s example of a bilateral orchiectomy (removal of both testicles) in a patient with prostate cancer is commonly used to illustrate this caveat.⁸¹ The hormones produced by the testicles, mostly testosterone, accelerate the growth and spread of the cancer. Modern medicine has discovered a

and anxiety about the future. Such circumstances can mitigate even to a notable degree subjective responsibility and the consequent culpability of those who make these choices which in themselves are evil.”

78. John Tuohey, “The Principle of Totality: A Reassessment of the Content of II-II q. 65, a.1 and Its Role in Ethics,” *Irish Theological Quarterly* 61.3–4 (September 1995): 297.

79. Bernard Prusak, “Double Effect, All Over Again: The Case of Sister McBride,” *Theoretical Medicine and Bioethics* 32.4 (September 2011); see esp. 281; Kevin O’Rourke, “What Happened in Phoenix?,” *America*, June 21, 2010, <http://americamagazine.org/>.

80. Ascension Health, “A Colloquium Organized by Ascension Health, Medical Intervention in Cases of Maternal-Fetal Vital Conflict: A Statement of Consensus,” *National Catholic Bioethics Quarterly* 14.3 (Autumn 2014): see especially 487–488.

81. Pius XII, Address to the Congress of Urology (1953); Nima Sharifi, James L. Gulley, and William L. Dahut, “Androgen Deprivation Therapy for Prostate Cancer,” *JAMA* 294.2 (July 13, 2005): 238–244; and Torvald Granfors et al., “Combined Orchiectomy and External Radiotherapy versus Radiotherapy Alone for Nonmetastatic Prostate Cancer with or without Pelvic Lymph Node Involvement: A Prospective Randomized Study,” *Journal of Urology* 159.6 (June 1998): 2030–2034.

less invasive, nonsurgical option to address this exacerbation, so orchiectomies are not regularly performed in this situation.⁸² Yet before such treatment existed, or in cases of advanced cancer and in parts of the world today where medical therapy does not exist, orchiectomy could be morally justified.⁸³ Similarly, it could be justified to remove normally functioning tissue that presents a real threat for turning into a pathology in the future.

Second, and related to the first reason, Pius XII speaks directly to the fact that neither moral principle necessarily requires that the excised tissue itself be pathological. He notes that there are times when the normal functioning of a healthy organ or body part can threaten a person's life or health. In these situations, it is justified to act on that otherwise healthy part, and even remove it if necessary to prevent harm to the body as a whole:

The decisive point here is not that the organ which is amputated or rendered incapable of functioning be itself diseased, but that its retention or functioning either directly or indirectly brings about a serious threat to the whole body. It is quite possible that, by its normal functioning, a healthy organ exerts a harmful action on a diseased organ that worsens the illness and its repercussions on the whole body. It could also be the case that the removal of a healthy organ and stopping its normal functioning relieves the illness, in cancer for example, its site of growth or, at least, essentially alters its conditions of existence. If one has no other means available, surgical intervention on the healthy organ is permitted in both cases.⁸⁴

Granted, in the example that Pius uses, the threat involves an exacerbation of a present, existing pathology and not the potential development of a future pathology. However, the criteria he lists for justifying the excision of a healthy but threatening organ do not limit themselves to a present, existing pathology.

Third, modern medicine has done wonders with disease management. Many diseases that were previously fatal are now considered chronic conditions because of the technology and expertise that physicians bring to the bedside.⁸⁵ Examples include

82. Nancy A. Dawson, "Overview of the Treatment of Disseminated Prostate Cancer," *UpToDate*, last modified October 2014, <http://www.uptodate.com/>.

83. Richard Lee and Matthew Smith, "Initial Hormone Therapy for Metastatic Prostate Cancer," *UpToDate*, last modified June 2013, <http://www.uptodate.com/>.

84. "Le point décisif ici n'est pas que l'organe amputé ou rendu incapable de fonctionner soit malade lui-même, mais que son maintien ou son fonctionnement entraîne directement ou indirectement pour tout le corps une menace sérieuse. Il est très possible que, par son fonctionnement normal, un organe sain exerce sur un organe malade une action nocive de nature à aggraver le mal et ses répercussions sur tout le corps. Il peut se faire aussi que l'ablation d'un organe sain et l'arrêt de son fonctionnement normal enlève au mal, au cancer par exemple, son terrain de croissance ou, en tout cas, altère essentiellement ses conditions d'existence. Si l'on ne dispose d'aucun autre moyen, l'intervention chirurgicale sur l'organe sain est permise dans les deux cas." Pius XII, Address to the Congress of Urology (1953).

85. Max Pemberton, "As a Doctor, I'd Rather Have HIV Than Diabetes," *Spectator*, April 19, 2014, www.spectator.co.uk/; and Steven Deeks et al., "The End of AIDS: HIV Infection as a Chronic Disease," *Lancet* 382.9903 (November 2, 2013): 1525–1533.

heart failure (often called chronic heart failure), diabetes, kidney failure, emphysema (now included in chronic obstructive pulmonary disease or COPD), HIV, and the like.⁸⁶ Yet none of these diseases are curable. Even though physicians cannot cure these pathologies, they can be managed rather well. This important distinction is somewhat old for medicine but new for theology; only in the past six decades or so has it really become possible to make such a distinction. Thus, the concept of pathology, what that means, and what it means to *treat* or *cure* a pathology have changed drastically since the days of Aquinas.⁸⁷ Consequently, the idea of “treating a pathology” and what it means for a pathology to be “current” or “imminent” have also changed.

Fourth, descriptions of the PDE do not mention the word “pathology,” whether in the early formulations of Aquinas or Jean-Pierre Gury or in more modern descriptions that apply to nonmedical scenarios like just-war theory.⁸⁸ All that is required for the PDE to be applicable in these instances is that there are two effects: one good and one bad. It just so happens that when the PDE is applied to medicine it *usually* involves a pathology. Thus, even though the ERDs aptly discuss pathology in regard to the PDE, the broader moral tradition does not necessarily require it.

Therefore, based on this expanded understanding of pathology, an agent’s direct intention need not be to *cure* a pathology when performing a medical intervention that involves the removal or mutilation of a body part. Neither is it the case that the sole, immediate, direct effect of such an intervention be the cure of a pathology. Instead, such interventions can be performed on healthy, otherwise non-pathological tissue, *if doing so removes or addresses a threat to the patient’s life*, and this includes the prevention of a threat and not just its elimination. This broader reformulation of the object of such actions, and the agent’s direct intention, has clear implications for the questions at hand.

Opportunistic Salpingectomy for Population Risk of Ovarian Cancer

Keeping in mind the two preceding discussions, we will now apply the moral principles described above to the medical facts of the specific scenario of a bilateral salpingectomy for a patient with a normal (population) risk for ovarian cancer. At first glance, the proposed procedure might appear to violate the principle of totality, because the tissue being excised is not currently pathological. Moreover, it is entirely possible that it will never become pathological at all. However, the caveats mentioned above about the concept of pathology show this assessment to be flawed. Pius XII’s statement is clear that non-pathological tissue may be removed in certain situations,

86. Jane Brody, “Once-Fatal Cancers Now Treated as a Chronic Disease,” *New York Times*, June 17, 2008; and Janet McGrath et al., “Challenging the Paradigm: Anthropological Perspectives on HIV as a Chronic Disease,” *Medical Anthropology: Cross-Cultural Studies in Health and Illness* 33.4 (November 2014); the entire issue is devoted to the “normalization” of HIV.

87. *ST* I-II.71.1 ad 3; and II-II.65.1 corpus.

88. *ST* II-II.64.7 corpus; and Christopher Kaczor, *Proportionalism and the Natural Law Tradition* (Washington, DC: Catholic University of America Press, 2002), 27.

assuming that its “retention or functioning either directly or indirectly brings about a serious threat to the whole body.”⁸⁹ His criteria do not require that the pathology be currently present. Some ethicists go even further, and explicitly consider prophylactic removal to a different *kind* of act from mutilation.⁹⁰ The fact that the continued presence of the fallopian tubes presents a real (or *possible*) danger of developing a disease for which there is no good screening test or treatment, *and* a rather high mortality rate, means that removing the fallopian tubes to reduce the danger or risk of developing this disease is not a mutilation but a preventive healing procedure. As such, it does not necessarily violate the principle of totality, even though the risk is already quite small in the general population.

As for the principle of double effect, we believe that opportunistic salpingectomy meets all four of its criteria. The application of this principle is needed to make it clear that this procedure is morally good in respect to all three moral fonts: object, intention, and circumstances. In particular, we must show that the contraceptive effect of the salpingectomy is neither the proximate nor the remote intention of the procedure, and the circumstances must be right. First, salpingectomy is clearly justified in other areas, as in the treatment of cancer of the fallopian tube or treatment of an ectopic pregnancy.⁹¹ The procedure is performed very differently from a tubal ligation, the typical surgery used to sterilize women and, critically, for very distinct purposes. From a surgical standpoint, it is an altogether different *kind* of procedure. Tubal ligation involves simply cauterizing or clipping the tubes and interrupting the passageway between the ovary and uterus; salpingectomy, by contrast, removes the tubes entirely. The procedures are done for wholly different purposes, though both have a foreseen contraceptive effect.

Moreover, the circumstances of the two procedures are different. There are different procedure codes, the procedures are billed and explained differently, and the informed consent discussion is different, all of which helps to ensure that the concrete moral act is done for the right reasons and at the right time. None of these circumstances mean that a salpingectomy is inherently justified, and none are requirements for a particular salpingectomy to be justified, especially since billing and coding practices change regularly, but such circumstances differ in the first place only because salpingectomy can be substantially distinguished from tubal ligation.

89. “Que l’organe amputé ou rendu incapable de fonctionner soit malade lui-même, mais que son maintien ou son fonctionnement entraîne directement ou indirectement pour tout le corps une menace sérieuse.” Pius XII, Address to the Congress of Urology (1953).

90. Christopher Kaczor, “The Ethics of Ectopic Pregnancy: A Critical Reconsideration of Salpingostomy and Methotrexate,” *Linacre Quarterly* 76.3 (August 2009): 275; and Nicholas Lund-Molfese, “What Is Mutilation?,” *American Journal of Bioethics* 3.2 (Spring 2003): 64–65.

91. John Connery, *Abortion: Development of the Roman Catholic Perspective* (Chicago, IL: Loyola University Press, 1977), 303; William E. May, “Methotrexate and Ectopic Pregnancy,” *Ethics & Medics* 23.3 (March 1998); Albert Moraczewski, “Managing Tubal Pregnancies,” *Ethics & Medics* 21.6 (August 1996); and Christopher Kaczor, “The Ethics of Ectopic Pregnancy,” 266–267.

Insofar as its object (its *immediate* purpose) is distinct from tubal ligation and can be rightly characterized as morally good as it derives its moral species from its end, opportunistic salpingectomy is not necessarily a direct sterilization or intrinsically evil. Thus, opportunistic salpingectomy meets the first criterion of the PDE.

Second, the current state of medical evidence suggests that the fallopian tube is a primary contributor to serous ovarian cancer, so it follows that removing the fallopian tubes before cancer is present would reduce the risk of ovarian cancer in general and likely prevent serous ovarian cancer. As mentioned above, a retrospective study already shows such benefits. Moreover, the differences between a salpingectomy and a tubal ligation, as clarified above, show that the objects of the actions are different, which in turn provide evidence that the intention of the physician and patient with respect to the salpingectomy is not for the bad effect of sterilization but only for the good effect of reducing the risk of developing ovarian cancer. If their intention were for the procedure's permanent contraceptive effects (i.e., to sterilize the patient), one would wonder why they would bother to remove both tubes in their entirety rather than simply ligating them. After all, ligation is a much quicker, simpler, and less risky means to achieve the end of sterilization than removing the tubes entirely. Thus, a physician and patient typically choose opportunistic salpingectomy with the intention of reducing the risk of cancer and not directly for sterilization, meaning opportunistic salpingectomy can meet the second criterion of the PDE.

Third, as indicated above, the inability to reproduce is clearly not what reduces the risk of cancer; rather it is the lack of the presence of the fallopian epithelial cells. In fact, some patients who undergo opportunistic salpingectomy are postmenopausal and so are already infertile. For these patients, the procedure does not cause infertility, yet it still reduces their risk of ovarian cancer. Premenopausal patients could still become pregnant and reproduce through morally illicit procedures like in vitro fertilization or through procedures that some bioethicists consider morally justified, like low tubal ovum transfer or intrauterine insemination.⁹² In either case, one cannot argue reasonably that the patient's infertility is what reduces her risk of ovarian cancer, especially since she may be infertile already or technically may be fertile even after the procedure. Thus, opportunistic salpingectomy meets the third criterion of the PDE.

Fourth, it may appear that the benefit of opportunistic salpingectomy is not proportionate to its risks. After all, the risks of anesthesia and surgery might seem high since the normal risk of developing ovarian cancer is quite small. However, the added risks of an opportunistic salpingectomy are also very small. For that reason, the clinical recommendation is only to remove the fallopian tubes in patients at average risk when

92. John W. Carlson, "Interventions upon Gametes in Assisting the Conjugal Act toward Fertilization," in *Infertility: A Crossroad of Faith, Medicine, and Technology*, ed. Kevin Wm. Wildes (Dordrecht, Netherlands: Kluwer Academic Publishers, 1997), 109–111; Peter Cataldo, "Reproductive Technologies," in *Catholic Health Care Ethics: A Manual for Practitioners*, 2nd ed., ed. Edward J. Furton (Philadelphia: National Catholic Bioethics Center, 2009): 103–109; and Kevin O'Rourke, "Catholic Principles and In Vitro Fertilization," *National Catholic Bioethics Quarterly* 10.4 (Winter 2010), 721 note 55.

done concurrently with another procedure that the patient will otherwise undergo anyway. In this manner, the only added risks of the salpingectomy are the few minutes of extra time added to the surgery, a slightly increased risk of internal hemorrhaging, and perhaps, but not necessarily, another surgical scar or laparoscopic incision. In contrast to an opportunistic salpingectomy, an isolated salpingectomy, or salpingectomy by itself without any other concurring procedure, would not seem to be morally justified by the criteria we have identified above. Moreover, the Society of Gynecologic Oncology and the American College of Obstetricians and Gynecologists recommend isolated salpingectomy only as a replacement for tubal ligation in patients at average risk of ovarian cancer. Thus, those performing an isolated salpingectomy on average-risk patients are likely to almost always share the direct intention to sterilize the patient.

Furthermore, even though the population risk of developing ovarian cancer is quite small, ovarian cancer has one of the highest mortality rates for cancer in women, and high-grade serous ovarian cancer is the most common, most aggressive, and most deadly of all its forms. Moreover, ovarian cancer has no recommended screening test to allow for early intervention, and late interventions are not very effective. Therefore, we conclude that opportunistic salpingectomy for patients at population risk of developing ovarian cancer can meet the fourth criterion of the PDE, and so could be justified.

That being said, one might question whether the intended good effect is *truly* proportionate (that is, *sufficiently* proportionate) to the unintended bad effects and risks. We would argue on the basis of the reasons presented above that it is solidly probable *in principle* that the good effect is proportionate to the bad effect. A moral judgment that is solidly probable means that there are good moral grounds to conclude that the action in question is not morally prohibited and that a person in good conscience may, considering the circumstances, decide either to perform the act or not. Applying this point to the current question, no one outside of the physician–patient relationship, whether an ethicist or a hospital, has generally sufficient grounds to prohibit a patient from undergoing such a procedure if she determines that it is indeed proportionate *under her circumstances* and if a physician is willing to perform it. It is not the role of ethicists to prevent people from making an error in judgment or to prevent them from making a mistake in their intention when the object of the act is clearly licit. Rather, the ethicist’s role is to provide decision makers with principles and tools of sound moral reasoning by which they can properly form their own conscience, to provide an institution with appropriate guidelines and direction for avoiding immoral actions, and to help ensure that procedures are performed under the right circumstances, that good counsel is available, and that principles and tools of sound moral reasoning are available and accessible to guide decision makers.

We qualify our conclusion in this way for two reasons. First, as we have shown, the justification of an opportunistic salpingectomy hinges on whether or not it provides a proportionate benefit. Any procedure that is “likely to cause harm or undesirable side effects can be justified only by a proportionate benefit to the patient.”⁹³ This weighing of benefits and burdens properly occurs in the provider–patient relationship.

93. USCCB, *Ethical and Religious Directives*, dir. 33.

Second, every person has “a moral obligation to use ordinary or proportionate means of preserving his or her life,” and by definition those means are treatments which “in the judgment of the patient offer a reasonable hope of benefit and do not entail an excessive burden or impose excessive expense on the family or the community.”⁹⁴ This definition carries many subjective terms. What seems to provide a reasonable hope of benefit to one person may not be judged so by another, and what some find excessively burdensome, others do not.⁹⁵ In the broader theological tradition, whether a treatment truly offers a reasonable hope of benefit and does not entail an excessive burden are judgments for the patient to make, assuming she has accurate information on which to formulate a judgment and actually has the *capacity* to reason. Assuming these, and assuming a procedure is not intrinsically evil or is not clearly disproportionate, only the patient can determine whether a particular treatment is ethically ordinary, and she must do so by depending on the professional competence, skill, knowledge, and experience of her health care provider together with an assessment of her moral obligations in conscience.⁹⁶ Therefore, unless a procedure is intrinsically evil or is, objectively speaking, clearly disproportionate to the harm it incurs, which we have shown is not the case for opportunistic salpingectomy, both the concept of proportionate benefit and that of proportionate or ordinary means place the decision within the purview of the patient and her provider.⁹⁷

This is similar to the conclusion some bioethicists have made regarding routine circumcision of male neonates.⁹⁸ There appear to be many medical reasons to forego this procedure on an elective, routine basis, especially since the magnitude of its health benefits is debatable. Some professional organizations recommend against routine circumcision on this basis.⁹⁹ Nevertheless, some benefits do exist that could arguably outweigh the harms, and other professional organizations favor routine circumcision for these reasons.¹⁰⁰ Many have reasonably concluded that the risks *and* benefits are sufficiently proportionate so as to fall within the final purview

94. *Ibid.*, dir. 56.

95. Kevin Wildes, “Ordinary and Extraordinary Means and the Quality of Life,” *Theological Studies* 57.3 (September 1996): 510.

96. USCCB, *Ethical and Religious Directives*, introduction to part 3.

97. Physicians and hospitals do retain the right to refuse requests for procedures that are flagrantly outside the bounds of the normal practice of medicine and clearly disproportionate. See Marie Hilliard, foreword to *Ordinary and Extraordinary Means of Conserving Life*, by Daniel A. Cronin (Philadelphia: National Catholic Bioethics Center, 2011), xii–xiii.

98. John Paul Slosar and Daniel O’Brien, “The Ethics of Neonatal Male Circumcision: A Catholic Perspective,” *American Journal of Bioethics* 3.2 (2003): 62–64.

99. Nordic Ombudsmen for Children, “Let the Boys Decide on Circumcision,” September 30, 2013, *Child Rights International Network*, <https://www.crin.org/>; and Canadian Paediatric Society, “Neonatal Circumcision Revisited,” *Canadian Medical Association Journal* 154.6 (March 15, 1996): 769–780.

100. American Academy of Pediatrics, Task Force on Circumcision, “Circumcision Policy Statement,” *Pediatrics* 130.3 (August 2012): 585–586; and American Medical Association, “Neonatal Male Circumcision,” policy statement H-60.945, last modified 2013, <https://www.ama-assn.org/>.

of the parents and physician, and still other professional organizations recommend exactly this approach.¹⁰¹

Our conclusion for opportunistic salpingectomy is similar. While we recognize that the benefits may not be proportionate to the burdens in a particular case, there is sufficient evidence *in principle* to obtain the solidly probable opinion that having an opportunistic salpingectomy is not objectively immoral and can be done for the right intentions in the right circumstances, and it therefore falls within the patient's right to decide whether or not the procedure offers enough benefits so as to be justified in her case.

In sum, our analysis of the proposed scenario under the PDE is as follows:

1. Opportunistic salpingectomy *per se* is morally good or at least morally neutral.
2. The physician performs the salpingectomy to reduce the risk of cancer (the good effect), not to sterilize (the bad effect).
3. The loss of fertility is not what reduces the risk of ovarian cancer (the good effect is not achieved by means of the bad effect).
4. Reducing the risk of ovarian cancer and its high risk of mortality is proportionate to the removal of a healthy organ, the possible loss of fertility, and the risks of anesthesia and surgery.

Finally, the personal nature of this decision and the foreseen but unintended side effect of infertility carry implications for surrogate decision making. The question of surrogate consent could arise in at least two situations: an acute event that requires surgical intervention yet renders the patient incapacitated, and a case in which the patient has a chronic or permanent loss of decision-making capacity. In the first situation, appendicitis, cholecystitis, a ruptured ectopic pregnancy, or any number of other conditions could be severe enough to cause unconsciousness. Granted, such a scenario is unlikely, since if the patient is sick enough to need an operation, the physician might believe the added risks of salpingectomy, however small, might be unwarranted. Nevertheless, it is possible in theory. In the second situation, the patient might be elderly and suffer from dementia or be young and have a developmental disability severe enough that she cannot make her own medical decisions. These scenarios would not require an acute event and could occur with an elective intervention like cholecystectomy or appendectomy.

There are two possible circumstances in which we can envision permission for an opportunistic salpingectomy to be given appropriately by a surrogate decision maker. In the first situation, permission could be granted by an appropriate surrogate if the patient had already discussed the issue with her physician. If they have predetermined that she would want an opportunistic salpingectomy were she to have an

101. Royal College of Australasian Physicians, "Circumcision of Male Infants," Commission for Children and Young People [AU], September 2010, <http://www.cryp.vic.gov.au/>; and British Medical Association, "The Law and Ethics of Male Circumcision: Guidance for Doctors," *Journal of Medical Ethics* 30.3 (June 2004): 259–263.

incapacitating illness that required surgical intervention, surrogate consent might be justified.¹⁰² However, this would require that the physician provide the surrogate with reasonable evidence that the patient would want an opportunistic salpingectomy, for example a medical power of attorney in which the patient expresses such wishes or a note in the patient's medical record from a previous discussion. Assuming that the physician still believes it is medically appropriate, without undue risk, and within the parameters of previous discussions with the patient, the surrogate could consent on the patient's behalf, especially if the surrogate has medical power of attorney. This would be an appropriate application of substituted judgment.

In the second situation, there may be a patient who has always lacked decision-making capacity because of severe or profound developmental delay, where a best-interest standard would need to be applied because substituted judgment is not possible. Such a patient will always lack the capacity to consent to a medical procedure yet may require an abdominal surgery in which an opportunistic salpingectomy could be appropriate in the judgment of the surrogate, who is likely to be a parent. In patients who are at increased risk for ovarian cancer, the best-interest standard could justify a surrogate decision in favor of the procedure. In patients who are at average risk, we suggest requiring a review by the ethics committee in order to provide a check and balance on the surrogate and physician, especially given the historical problems of eugenics and involuntary sterilization.¹⁰³ There may be other cases that would be analogous to these two.

Considering Possible Objections

A number of objections could be raised to our argument, but we will only consider the nine that we believe pose the most concern. First, it might appear that our conclusion runs contrary to well-established teaching of the magisterium regarding direct sterilization, especially as expressed by the Congregation for the Doctrine of the Faith. The Congregation is clear that any sterilizing procedure which "of its nature and condition, has the sole immediate effect of rendering the generative faculty incapable of procreation, is to be considered a direct sterilization."¹⁰⁴ This is true even when the procedure is done prophylactically to prevent a likely threat to the woman's life from a future contingent pregnancy.¹⁰⁵ If a prophylactic sterilizing procedure is unjustified in these cases, some might argue that it would also be unjustified to reduce the risk of ovarian cancer.

However, the Congregation is also clear that it condemns these actions not because of their sterilizing effects, but rather because the *sole immediate* effect of

102. Admittedly, one could argue that in such a scenario the patient herself provided consent in the original discussion with the physician, but the surrogate would still be the one signing the form on the patient's behalf.

103. David Micklos and Elof Carlson, "Engineering American Society: The Lesson of Eugenics," *Nature Reviews Genetics* 1.2 (November 2000): 153–158.

104. CDF, *Quaecumque sterilizatio* (March 13, 1975), n. 1.

105. CDF, "Responses concerning 'Uterine Isolation.'"

the procedure is sterility and the good effect *ultimately* intended by the physician and patient is only brought about by *means* of the patient's sterility. This intention is praised as "subjectively right" because it stems from a desire to cure disease, but it is nevertheless rejected as flawed because the object of the act is defective, that is, sterility is the chosen *means* to achieve the ultimate end. Sterility is the proximate end, the immoral object of the act; the therapeutic effect, though laudable, is the remote end or subjective intention. Accordingly, it contravenes the first and third criteria of the PDE.

The same is not true for opportunistic salpingectomy to reduce the risk of ovarian cancer. As noted above, the fact that the patient cannot conceive is not what reduces her risk of cancer; rather, it is the lack of fallopian epithelial cells, which shows that the intent of the procedure is not sterility either as a means or an end. The Congregation's references to pregnancy in its statements reinforce this point. Thus, our conclusion does not violate magisterial teaching regarding direct sterilization.

Second, one might object that the population risk of ovarian cancer is so small that it does not outweigh the burdens of the opportunistic salpingectomy. This line of thinking is appealing because the procedure does not eliminate the risk completely but only reduces it by about half, *and* it results in the permanent loss of the gift of fertility. Thus, the burdens and risks may appear to outweigh the benefits.

In response, the objection fails to account for three factors. First, as mentioned above, because the procedure is not intrinsically evil, a solidly probable opinion may be constructed that the patient has the authority to determine for herself whether or not the real burdens or benefits of a particular procedure are proportionate or disproportionate in her concrete circumstances. The objection may very well be true for many women, but it is not necessarily the case for all. Second, the loss of the gift of fertility is unquestionably of serious concern and cannot be taken lightly. The woman must understand the serious and irrevocable nature of her decision. Yet we have already shown that the gift is not necessarily directly rejected; rather, its loss is indirectly tolerated as a result of pursuing another legitimate good.¹⁰⁶ Third, for ethicists, ethics committees, mission leaders, or hospital administrators to begin regulating what is and is not a proportionate medical benefit seems to contravene the traditional understanding of the definition of proportionate and disproportionate

106. Statements from professional societies recommend that opportunistic salpingectomy should be pursued only when the woman has decided that she is no longer going to have any more children. This condition, as used in the medical evaluation of a woman considering the procedure, should not be construed as a condition for the moral justification of the procedure under Catholic moral principles. If the intent not to have more children is held as a *necessary* moral condition, the procedure becomes the means by which that condition (intention) is achieved, in addition to being means by which reduction of the risk of death from ovarian cancer is achieved. All that is required from the Catholic moral perspective is that the woman understand that permanent infertility is an unintended side effect of the procedure and that the procedure's benefits are proportionate to this side effect.

means.¹⁰⁷ Moreover, other procedures have more questionable benefit and entail significant risk, such as performing electroencephalography for headaches, imaging studies for nonspecific low back pain, or elective cesarean sections or inductions for patients less than thirty-nine weeks pregnant.¹⁰⁸

Third, one could object that this procedure defers too much to patient autonomy, so much so that it is at odds with the Catholic conception of medical decision making. Complete deference to patient autonomy might be acceptable in other moral frameworks, but in the Catholic moral tradition, the patient's weighing of benefits and burdens is not always morally determinative. People, patients included, can choose to do things with their bodies that are not morally justified by reason of their inherent dignity, even if that action is freely chosen and they do so with full knowledge of the action's nature and consequences. Thus, stewardship of one's body is limited to the guide given to us by God as revealed in revelation and found in the natural law. Our bodies are not our own to do with as we please; they are gifts from God that "have been purchased at a great price" (I Cor. 6:20). Similarly, "we are not the owners of our lives."¹⁰⁹ In short, there are limits to what one can do to one's body.

In response, we agree that the Catholic tradition of medical decision making does not defer entirely to patient autonomy.¹¹⁰ In fact, the idea that our conclusion defers entirely to patient autonomy is a mischaracterization. We set clear limits regarding when opportunistic salpingectomy could be chosen, namely, in concurrence with another procedure that will occur anyway for another medical reason. Moreover, it seems difficult to claim that we defer too much to patient autonomy, since we believe physicians retain the ability to refuse to perform an opportunistic salpingectomy if they believe the risks substantively outweigh the benefits in a particular case. Thus, we think our conclusion is consistent with the Catholic tradition's understanding of the limits of patient autonomy.

Fourth, viewing the second objection through the lens of population health, it seems excessive to remove the tubes of hundreds of thousands of women in the United States each year only to prevent 4,800 to 9,000 (22 to 41 percent of 22,000) new diagnoses of ovarian cancer. At best one could argue that 55,000 to 102,000 diagnoses would be prevented each year on a global scale (22 to 41 percent of 250,000), but that would require performing the surgery on hundreds of millions of women, with the concomitant effects of sterilization. Moreover, as mentioned above, the long-term health effects of bilateral salpingectomy are not well known.

107. Cronin, *Ordinary and Extraordinary Means*, 122–157. Extreme interventions for which the burdens clearly outweigh the risks present an exception, as described by Marie Hilliard in the foreword (xii–xiii).

108. These and other recommendations for avoiding risks associated with unnecessary treatment can be found on the Choosing Wisely web site of the American Board of Internal Medicine, www.choosingwisely.org/clinician-lists.

109. USCCB, *Ethical and Religious Directives*, introduction to part 5.

110. Cronin, *Ordinary and Extraordinary Means*, 162–164.

However, these numbers are not much different from those for appendectomies to prevent death from appendicitis. The incidence rate of appendicitis is 11 per 10,000 (compared to 9.4 per 100,000 for ovarian cancer), and the lifetime risk is 8 percent for men and 6 percent for women (compared to 1.3 percent for women for ovarian cancer), and about half of those who have appendicitis would die if left untreated.¹¹¹ It seems peculiar to object to “opportunistic appendectomies,” yet they are relatively common (47 percent of all appendectomies are incidental) and used to be regularly offered with cesarean sections.¹¹² Now they are rarely done with cesarean sections because the risk of complications was found to outweigh the benefits.¹¹³ Even so, about thirty-six incidental appendectomies (the analogous term for opportunistic salpingectomy) must be performed to prevent one case of appendicitis.¹¹⁴

Moreover, the number of cases prevented by salpingectomy could increase, since it is very possible that the fallopian tissue plays a necessary role in the development of other types of ovarian cancer. Up to 64 percent of all ovarian cancer could be prevented, which would amount to 14,000 fewer diagnoses in the United States and 160,000 fewer worldwide. The only study available is retrospective, but it found a decrease of 42 percent, which is slightly above what would be expected from the histopathological surveys cited above.¹¹⁵ Finally, even though the long-term effects of bilateral salpingectomy are not well known, this is not in itself sufficient reason to preclude the procedure at this time. It is, rather, important information for a woman to have when weighing risks and benefits as part of the informed consent process.

Fifth, one could object that our conclusion assumes that the fallopian tubes are inherently problematic or that their existence *per se* poses a threat to the patient’s life and health, but Aquinas says that body parts are *per se* “useful to the good of the whole body” and only happen to be hurtful to the body *per accidens*.¹¹⁶ Later in the same article he says that “so long as a member is healthy and retains its natural disposition, it cannot be cut off to the detriment of the whole.” The routine removal of healthy body parts to prevent illness seems to fly in the face of these metaphysical and moral points.

111. Parswa Ansari, “Appendicitis,” *Merck Manuals: Home Edition*, October 2012, www.merckmanuals.com/; and David Addiss et al., “The Epidemiology of Appendicitis and Appendectomy in the United States,” *American Journal of Epidemiology* 132.5 (November 1990): 910, 912.

112. Addiss et al., “Epidemiology of Appendicitis,” 911–912; Anna Parsons et al., “Appendectomy at Cesarean Section: A Prospective Study,” *Obstetrics and Gynecology* 68.4 (October 1986): 479–482.

113. Christy Pearce et al., “Elective Appendectomy at the Time of Cesarean Delivery: A Randomized Controlled Trial,” *American Journal of Obstetrics and Gynecology* 199.5 (November 2008): 491–492; Joshua Dahlke et al., “Evidence-Based Surgery for Cesarean Delivery: An Updated Systematic Review,” *American Journal of Obstetrics and Gynecology* 209.4 (October 2013): 294–306.

114. Addiss et al., “Epidemiology of Appendicitis,” 920.

115. Madsen et al. “Tubal Ligation and Salpingectomy,” 96–94.

116. *ST II-II.65.1 corpus*.

In response, Aquinas's statement here does not account for the further development of the magisterium's understanding of the principle of totality as articulated by Pius XII, nor does it take into account our expanded notion of pathology, which arises from the modern medical understanding of illness and anatomy and was not available in Aquinas's day. Moreover, Pius XII and others who preceded him have further developed and clarified Aquinas's thoughts. Thus, our conclusion does not necessitate a rejection of Aquinas's metaphysical premise, especially since we readily acknowledge the vast majority of fallopian tubes do not and never will threaten the life of anyone. Our argument is based not on the claim that all or most tubes are ordered against the good of the body but rather that the lack of effective screening and treatment for ovarian cancer make opportunistic salpingectomy a morally legitimate option for those women who are at population risk and reasonably fear this low potential of developing such a dreaded disease.

Sixth, one could object that if opportunistic salpingectomy becomes widespread, many other body parts could also be removed under the same rationale. Why not offer prophylactic mastectomy to women of population risk of breast cancer after they finish nursing their youngest child, or prostatectomy or orchiectomy to men at average risk of prostate or testicular cancer after they finish having children? After all, if cancer prevention is an end in itself, shouldn't we also advocate for the bilateral mastectomy of female neonates?¹¹⁷

In response, breast cancer has a very good survival rate (90 percent) and an effective screening mechanism through self-examination and mammograms.¹¹⁸ Likewise, prostate and testicular cancer have some of the highest cure rates among cancers (over 95 percent for each), have a low incidence (similar to ovarian cancer), and have good screening mechanisms.¹¹⁹ In contrast, ovarian cancer has a very poor survival rate and cannot be screened for. Moreover, there are benefits to keeping the testicles and breasts besides reproduction and breast-feeding, but the only benefit to keeping the fallopian tubes is the ability to conceive naturally. Therefore, opportunistic salpingectomy falls into the middle of a scale between risks and benefits in comparison with other surgeries to prevent cancer in the general population.

Seventh, if the risks of ovarian cancer are so significant that one would undergo sterilization to reduce the risk by half, even if such sterilization were indirect, then it seems only logical to also undergo a bilateral oophorectomy in the hopes of completely preventing ovarian cancer altogether.

In response, this is neither a conclusion nor a recommendation from professional societies. Thus, while one might suspect that the intention behind opportunistic salpingectomy is actually to sterilize and not to reduce the risk of cancer, we would argue that the ultimate goal of opportunistic salpingectomy, beyond reducing the

117. Lang, "Elective Child Circumcision," 114.

118. National Cancer Institute, "Female Breast Cancer," SEER Stat Fact Sheet, *Cancer.gov*, accessed April 8, 2016, <http://seer.cancer.gov/statfacts/>.

119. National Cancer Institute, "Prostate Cancer" and "Testis Cancer," SEER Stat Fact Sheets, *Cancer.gov*, accessed April 8, 2016, <http://seer.cancer.gov/statfacts/>.

risk of ovarian cancer, is to prevent premature or untimely death in accordance with the goals of medical practice.¹²⁰ Bilateral oophorectomy, however, is contrary to this ultimate goal, since early menopause caused by bilateral oophorectomy is known to shorten a woman's life span overall because of a higher incidence of stroke, heart attack, and other health issues later in life.¹²¹ This increase is greater than the risk of ovarian cancer that remains after opportunistic salpingectomy. For this reason, the current recommendations are to leave the ovaries intact unless the patient has a significantly increased risk of ovarian cancer due to a genetic marker or family history.¹²² Since the ultimate goal is to reduce the risk of death, not cancer, the conclusion to leave the ovaries but remove the fallopian tubes is justified.

Eighth, there is the objection that if our conclusion is adopted, it could lead to sterilization becoming a routine. In a few decades, assuming opportunistic salpingectomy becomes widespread, the majority of women may very well lose their fertility surgically to prevent cancer many years before they undergo the natural decline in fertility that occurs with aging. Even if such sterilization is indirect, it is still concerning if the loss of natural fertility were to become so prevalent in the population. It perpetuates the cultural norm that fertility is a superfluous accessory or a burden rather than a gift, and reinforces the concept that the radical autonomy of the individual is the final arbiter of right and wrong. Moreover, the decline of birth rates is already worrisome and this procedure could accelerate it.¹²³

In response, other surgeries are already just as common as this one might become. About 22 to 66 percent of people will have at least one wisdom tooth removed, and 50 percent of those over sixty years of age will need cataract surgery.¹²⁴ Granted, both of these involve restoring divine gifts (eating and sight) rather than removing one (fertility), but opportunistic salpingectomy also serves to preserve the greatest gift of all: life itself. Wisdom teeth and cataracts are usually removed to increase the quality of life rather than to prevent death. Thus, even though salpingectomy removes fertility, it does so for a more serious benefit than other common

120. Charles Junkerman, Arthur Derse, and David L. Schiedermayer, *Practical Ethics for Students, Interns, and Residents: A Short Reference Manual*, 3rd ed. (Hagerstown, MD: University Publishing, 2008), 78; and Edmund D. Pellegrino and David C. Thomasma, *The Virtues in Medical Practice* (New York: Oxford University Press, 1993), 193.

121. Dietl J. Wischhusen, J. Wischhusen, and S.F.M. Häusler, "The Post-Reproductive Fallopian Tube: Better Removed?," *Human Reproduction* 26.11 (2011): 2919–2920; and L.T. Shuster et al., "Premature Menopause or Early Menopause: Long-Term Health Consequences," *Maturitas* 65.2 (May 2010): 161–166.

122. ACOG Committee on Gynecologic Practice, "Salpingectomy for Ovarian Cancer Prevention."

123. Alex C. Ezeh et al., "Global Population Trends and Policy Options," *Lancet* 380.9837 (July 13, 2012); and Lee Kuan Yew, "Warning Bell for Developed Countries: Declining Birth Rates," *Forbes*, April 25, 2012, www.forbes.com.

124. Julia C. Boughner, "Maintaining Perspective on Third Molar Extraction," *Journal of the Canadian Dental Association* 79.6 (2013): 347; and Gowri L. Kanthan et al., "Ten-Year Incidence of Age-Related Cataract and Cataract Surgery in an Older Australian Population," *Ophthalmology* 115.5 (May 2008): 811.

surgeries. These facts about the opportunistic salpingectomy show that its use need not undermine the view that fertility is a gift from God. Similarly, limiting the procedure to be done concurrently with another operation demonstrates that respect for patient autonomy is not the primary or sole operative principle but simply one among others.

Moreover, this objection looks at the population level rather than the individual level. While widespread induced infertility would certainly be concerning, the most important factor in each of those individual decisions is the patient's weighing of benefits and burdens as they apply to her own life and particular circumstances. Again, a determination of proportionate benefit can only occur within the provider–patient relationship. As long as each patient chooses it of her own free will, provides free and informed consent, and does so with the right intention of preventing cancer and not inducing sterility, then the percentage throughout the general population should not matter. Also, the vast majority of these patients will probably choose to have the procedure only at a time when they would not be having any more children.¹²⁵ Thus, while the rate of induced infertility may increase, the birth rate is unlikely to be significantly affected.

Ninth, one could object that physicians at Catholic facilities could use opportunistic salpingectomy as a loophole to bypass the proscription of direct sterilization. We recognize that this is a particularly relevant concern for those of us who work at Catholic facilities. This is also a potential source of scandal, possible derision of the Church's position on sterilization, and a potential threat to the general integrity of Catholic health care and moral theology. In our opinion, this is the most significant obstacle to the legitimate implementation of our conclusion. Yet we believe it can be overcome by the following three actions. First, prohibit isolated salpingectomy when done for the sole purpose of reducing the risk of ovarian cancer, as this would likely occur only in lieu of tubal ligation. Second, provide a proper explanation of what is being done and why it differs from direct sterilization, which should suffice to allay concerns about a violation of Catholic moral teaching. In general, a proper explanation should address concerns of scandal. Those who continue to be scandalized even after a proper explanation do so of their own accord and need not stand in the way of otherwise justifiable actions.¹²⁶

Third, facilities, ethicists, and ethics committees, when lacking evidence to the contrary, must presume the good will and right intent of physicians and patients requesting these procedures, as well as for any procedure in general. Likewise, Catholic physicians must presume good intent by their patients. To do otherwise would be inconsistent with our obligations to respect the human dignity of others. An agent's good intent is presumed in all other areas of the practice of medicine. The intent of

125. As stated above, the intent not to have more children cannot be a necessary condition of the procedure, the additional intent to prevent death from ovarian cancer notwithstanding. Doing so makes opportunistic salpingectomy the means by which one chooses to no longer have children, which renders it morally unjustifiable.

126. *ST II-II.43.7 corpus, and II-II.43.8 corpus*; Dominic Prümmer, *Handbook of Moral Theology* (New York: P.J. Kenedy and Sons, 1957), n. 232, p. 103; and A. Vander Heeren, "Scandal," in *Catholic Encyclopedia* (New York: Robert Appleton, 1912).

family members requesting a medically indicated withdrawal of a ventilator in a patient with widely metastatic colon cancer is generally not questioned. The same is true for a patient requesting a hysterectomy for abnormal uterine bleeding after less invasive treatments have failed. In both of these situations the agents could have subjectively bad intentions which would render their decision morally defective. Yet as stated above, only God knows someone's thoughts and their true intentions. No one can know what is in someone's heart unless that person declares it.

In the absence of evidence to the contrary, we must presume good intentions on the part of those requesting this procedure. To do otherwise would require a facility to constantly perform a policing function which runs afoul of values like trust, mutual respect, professional integrity, honesty, and appropriate confidentiality—values which are foundational to the professional–patient relationship.¹²⁷ It is not our responsibility to police the consciences of patients, families, and clinicians. Rather, it is the responsibility and obligation of a Catholic facility to institute policies that are consistent with its identity as a healing ministry of the Church, but not to ensure that no one ever does anything that might be contrary to the Church's teaching, especially when the act in question would be immoral solely because of the subjective intention of the acting agent. They must answer for themselves. Moreover, such a position could be construed as interfering with or controlling the practice of medicine. Thus, as long as a Catholic facility or physician takes these two steps, we believe that the risk of scandal will be sufficiently addressed to justify permitting opportunistic salpingectomy and avoid complicity with a “workaround” of the prohibition of direct sterilization.

Opportunistic Salpingectomy Can Be Licit

Recent medical evidence strongly suggests that opportunistic salpingectomy for women at average risk of developing ovarian cancer is likely to cut this risk in half. This has left some physicians asking, “Salpingectomy, why not?”¹²⁸ We argue that offering bilateral salpingectomy to any woman who is at average risk of developing cancer *and* is already having an unrelated pelvic or abdominal surgery is morally justified by the principles of totality and double effect. Even though the fallopian tubes are not diseased at the time of removal, the salpingectomy is still directed at the good of the body as a whole. Pope Pius XII clarifies that the principles of totality and double effect morally justify the removal of non-diseased organs in analogous cases.

Opportunistic salpingectomy meets the criteria for the PDE. Salpingectomy is not intrinsically evil; it is justified in treatment of ectopic pregnancy and fallopian tube cancer. The agent's intent in performing it is not to induce sterility but to reduce the risk of death from a very deadly form of cancer for which there is currently no screening available; if the intent were otherwise, the procedure would be a tubal

127. USCCB, *Ethical and Religious Directives*, introduction to part 3.

128. Floor J. Backes, “Salpingectomy, Why Not?,” *American Journal of Obstetrics and Gynecology* 210.5 (May 2014): 385–386.

ligation and not a salpingectomy. The patient's inability to get pregnant is not what reduces the risk of cancer, but rather her lack of fallopian epithelial cells.

Finally, we believe that the benefit of reducing the risk of death from cancer is sufficiently proportionate to the added risks of opportunistic salpingectomy as to fall within the purview of the physician–patient relationship. We do not claim that the benefits are *always* proportionate to the risks involved, although they could be if future studies show that the procedure results in an extremely high reduction in the risk of ovarian cancer. At this point, however, we simply claim that the patient has the rightful authority to determine whether there is sufficient benefit to justify a potentially justifiable risk-reducing salpingectomy, because only patients or their rightful surrogates can determine if an intervention constitutes ethically ordinary means, and determinations of proportionate benefit must occur within the provider–patient relationship.