HEALTH LAW — ORGAN COMPENSATION — NINTH CIRCUIT HOLDS THAT COMPENSATION FOR BLOOD STEM CELL TRANS-PLANT PROCEDURE DOES NOT VIOLATE THE NATIONAL ORGAN TRANSPLANT ACT. — *Flynn v. Holder*, No. 10-55643, 2012 WL 1001300 (9th Cir. Mar. 27, 2012).

The debate over compensation for organ donors is not easily resolved.¹ Congress attempted to end the debate by enacting the National Organ Transplant Act² (NOTA) in 1984. NOTA makes it illegal for "any person to knowingly acquire, receive, or otherwise transfer any human organ for valuable consideration for use in human transplantation."3 "Organ" includes a number of organs, including bone marrow, and "any subpart thereof."4 Bone marrow, while undefined in the statute, may refer to a fatty substance located in the bones that also contains hematopoietic stem cells (HSCs).⁵ In recent years, the primary method of performing bone marrow transplants has changed from an invasive, painful procedure to one more similar to blood donation. Recently, in Flynn v. Holder,6 the Ninth Circuit held that NOTA's ban on selling bone marrow does not apply to the new procedure that extracts the necessary cells from the blood.⁷ While the court's conclusion that cells extracted from the blood are not a "subpart" of the bone marrow was plausible, the court did not fully consider the entirety of the new procedure or congressional intent. However, the decision may nonetheless have positive policy consequences, as it could result in more bone marrow donors, thereby helping minority populations in particular.

The purpose of bone marrow transplants is to provide patients with new HSCs, which produce blood cells.⁸ At the time of NOTA's enactment, there was one primary method for bone marrow trans-

¹ See LEON R. KASS, LIFE, LIBERTY AND THE DEFENSE OF DIGNITY 177–98 (2002) (discussing his moral revulsion to organ compensation but finding himself in a "tragic dilemma," *id.* at 198, because of the potential benefits of compensation).

 $^{^2\,}$ Pub. L. No. 98-507, 98 Stat. 2339 (1984) (codified as amended at 42 U.S.C. §§ 273–274 (2006 & Supp. IV 2011)).

 $^{^3}$ Id. § 274e(a). Violation of the statute results in a maximum \$50,000 fine, or five years in prison, or both. Id. § 274e(b).

 $^{^4}$ Id. $\$\,274e(c)(1).$ The Secretary of Health and Human Services can also add other organs through regulation. Id.

⁵ See Bone Marrow Transplantation and Peripheral Blood Stem Cell Transplantation, NAT'L CANCER INST., http://www.cancer.gov/cancertopics/factsheet/Therapy/bone-marrow-transplant (last visited May 3, 2012) [hereinafter Bone Marrow Transplantation].

 $^{^6\,}$ No. 10-55643, 2012 WL 1001300 (9th Cir. Mar. 27, 2012). The Ninth Circuit denied the Department of Justice's petition for a rehearing en banc on March 27, 2012. *Id.* at *2.

⁷ See id. at *10.

⁸ New HSCs are often used to treat serious blood diseases such as leukemia and lymphoma when treatment has destroyed a patient's HSCs. *Bone Marrow Transplantation, supra* note 5.

plants: aspiration.⁹ Aspiration involves sticking a long needle into the donor's bone (usually a large bone such as the hip) to remove the "liquid marrow."¹⁰ A doctor then harvests the HSCs from the marrow.¹¹ Over the last twenty years, a new procedure — peripheral blood stem cell (PBSC) apheresis — has largely replaced aspiration.¹² This procedure requires the donor to take medication for four to five days that mobilizes HSCs out of the bone marrow and into the blood,¹³ as the majority of HSCs removed through apheresis are located in the bone marrow prior to the administration of the medication¹⁴ and the normal amount of HSCs in the blood is not sufficient for PBSC apheresis.¹⁵ The HSCs are removed through apheresis, in which the donor's blood is filtered through a machine that extracts only the HSCs are then transplanted into the patient's bloodstream and migrate to the marrow.¹⁷

The nonprofit foundation MoreMarrowDonors.org (MMD) wanted to operate a pilot program to give individuals noncash incentives worth \$3000¹⁸ to donate their bone marrow.¹⁹ The motivation for the program was the need to encourage more donations from donors with rare marrow cells.²⁰ Plaintiffs MMD and six others, including doctors

¹⁴ John Thomas et al., *Mechanisms of Mobilization of Hematopoietic Progenitors with Granulocyte Colony-Stimulating Factor*, 9 CURRENT OPINION IN HEMATOLOGY 183, 183 (2002). The total number of HSCs in the body does not change as a result of the medication; rather, the number in the bone marrow decreases and the number in the blood increases. *Id.* at 184.

⁹ See Flynn, 2012 WL 1001300, at *3.

 $^{^{10}}$ Donation FAQs, BE THE MATCH, http://marrow.org/Registry_Members/Donation /Donation_FAQs.aspx (last visited May 3, 2012). The procedure requires anesthesia and hospitalization. Id.

¹¹ See Bone Marrow Transplantation, supra note 5.

¹² In 1995, no transplants from unrelated donors used PBSC apheresis, whereas in 2010, over 3000 transplants from unrelated donors used apheresis. *See Detailed Description of Donor Registry Transplant Data*, BONE MARROW AND CORD BLOOD DONATION AND TRANSPLAN TATION, http://bloodcell.transplant.hrsa.gov/RESEARCH/Transplant_Data/Registry_Tx_Data /LongDesc/index.html#Fig6 (last visited May 3, 2012). Fewer than 1000 transplants used aspiration in 2010. *Id.*

¹³ Bone Marrow Transplantation, supra note 5; see also HARRISON'S PRINCIPLES OF INTERNAL MEDICINE 959 (Dan L. Longo et al. eds., 18th ed. 2012).

¹⁵ See Paolo Anderlini & Richard Champlin, Use of Filgrastim for Stem Cell Mobilisation and Transplantation in High-Dose Cancer Chemotherapy, 62 DRUGS (SUPP. 1) 79, 80 (2002) ("Their collection from peripheral blood becomes practical only after patients undergo mobilisation treatment to release the cells from the bone marrow into the peripheral blood.").

¹⁶ See Donation FAQs, supra note 10.

¹⁷ Bone Marrow Transplantation, supra note 5.

¹⁸ The payment would be in the form of a scholarship, housing allowance, or charitable gift. Complaint for Declaratory and Injunctive Relief at 27, Flynn v. Holder, No. 2:09-cv-07772-VBF -AJW (C.D. Cal. Oct. 26, 2009).

Flynn, No. 2:09-cv-07772-VBF-AJW, Document 33, slip op. at 2 (C.D. Cal. Mar. 12, 2010).
See id.

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and patients,²¹ filed suit in the U.S. District Court for the Central District of California challenging the constitutionality of NOTA's ban on compensation for bone marrow transplants on both equal protection and substantive due process grounds.²² After finding that MMD had standing,²³ the district court dismissed both claims.²⁴ The court analyzed the equal protection claim under a rational basis standard,²⁵ finding the government's bases, such as moral disapproval of selling body parts and fears of exploitation, sufficiently rational to include bone marrow in NOTA.²⁶ The court dismissed the substantive due process claim, as the plaintiffs "provide[d] no supporting law and describe[d] insufficient specific evidence."²⁷

The Ninth Circuit vacated and remanded.²⁸ Writing for the panel, Judge Kleinfeld²⁹ first analyzed the equal protection claim.³⁰ Because the complaint "appear[ed] to challenge the prohibition on bone marrow transplants regardless of method," the court started with the equal protection claim for bone marrow transplants using aspiration (the older, more invasive method).³¹ The plaintiffs claimed Congress was irrational in including bone marrow in NOTA because bone marrow, like blood, eggs, and sperm (all excluded from NOTA), can regenerate.³² However, the court found that the statute did not make distinctions

²⁷ Id., slip op. at 18.

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²¹ The other plaintiffs were Doreen Flynn, a mother of three girls all requiring bone marrow transplants; John Wagner, a physician; Akiim Deshay, an MMD Board member needing a bone marrow transplant; Mike Hamel, an MMD Board member who may need a bone marrow transplant; Mark Hachey, a father of a patient suffering complications from receiving mismatched bone marrow; and Kumud Majumder, a father of a patient who may need a bone marrow transplant. *See id.*, slip op. at 2, 5–9. The Institute of Justice represented the plaintiffs. *Saving Lives*, INST. FOR JUSTICE (Oct. 2009), http://www.ij.org/about/2899.

 $^{^{22}\,}$ Flynn, No. 2:09-cv-07772-VBF-AJW, Document 33, slip op. at 2. The plaintiffs sought declaratory and injunctive relief from future enforcement of NOTA against them. Id.

 $^{^{23}}$ The court found MMD had standing because it would suffer economic injury without the donations. *Id.*, slip op. at 10. The court did not reach the issue of whether the plaintiffs with interests similar to MMD's, such as members of MMD's Board, had standing for fear of prosecution. *Id.* Plaintiffs without interests similar to MMD's did not have independent standing. *Id.*

 $^{^{24}}$ Id., slip op. at 1–2. The court reaffirmed its ruling in Flynn v. Holder, No. 2:09-cv-07772 -VBF-AJW, Document 37, slip op. at 1–2 (C.D. Cal. Mar. 29, 2010).

²⁵ Flynn, No. 2:09-cv-07772-VBF-AJW, Document 33, slip op. at 10.

 $^{^{26}}$ See *id.*, slip op. at 13, 14, 16. The government's other rational bases included the following: the rich would have an unfair advantage in a market for organs, payment for organs would undermine the voluntary donation system, compensation would result in organ donors' falsifying their medical history, a market system could result in donors' extorting patients, and compensation would increase the price of organ transplantation. *See id.*, slip op. at 14–16.

 $^{^{28}}$ Flynn, 2012 WL 1001300, at *11. The court did not analyze the substantive due process claim, as plaintiffs did not appeal that ruling.

²⁹ Judge Kleinfeld was joined by Judges Goodwin and Graber.

³⁰ *Flynn*, 2012 WL 1001300, at *5–8.

 $^{^{31}}$ Id. at *6.

 $^{^{32}}$ Id. at *5.

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based on ability to regenerate.³³ Additionally, Congress may have had "philosophical as well as policy reasons"³⁴ for including certain organs in the compensation ban and leaving other organs and bodily substances out.³⁵ All these concerns provided a rational basis for banning compensation of bone marrow transplants through aspiration.³⁶

In analyzing the compensation ban on PBSC apheresis, the court declined to reach the equal protection claim, relying solely on a statutory analysis of NOTA.³⁷ The court pointed out that NOTA did not include blood in its compensation ban for organ transplants and found its absence to be "loud."³⁸ The government argued that HSCs in the blood are a "subpart" of the bone marrow and therefore covered by the statute.³⁹ The court did not find this claim persuasive "because it prove[d] too much."40 Given that all blood cells "come from the bone marrow," the government's interpretation would result in a ban on all compensation for blood.⁴¹ The only difference between apheresis donors and regular blood donors is the medication that apheresis donors take for several days before the procedure to increase the level of HSCs in the blood.⁴² The court found that "taking something from the blood that is created in the marrow takes only a subpart of the blood," not a subpart of the bone marrow.⁴³ HSCs, once in the blood, are part of the blood.⁴⁴ Therefore, the ban on bone marrow compensation does not apply to HSCs harvested by apheresis, because the procedure is essentially a blood donation.45

While the court reached a plausible decision, it did not sufficiently consider the medication phase of PBSC apheresis in interpreting

³⁹ Id.

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 $^{^{33}}$ Id. at *6. For example, NOTA prohibits compensation for livers, even though a part of a donor's liver can be removed for donation, and the liver will regenerate. Id.

³⁴ Id. at *7.

³⁵ Id. at *7-8.

³⁶ Id. at *8.

³⁷ See id. Neither side briefed the statutory interpretation argument. The court brought up the issue sua sponte at oral argument. Oral Argument at 00:56, *Flynn*, 2012 WL 1001300 (9th Cir. Mar. 27, 2012) (No. 10-55643), *available at* http://www.ca9.uscourts.gov/media/view_subpage.php ?pk_id=0000007018.

³⁸ *Flynn*, 2012 WL 1001300, at *8.

⁴⁰ Id. at *9.

⁴¹ Id.

⁴² Id.

⁴³ Id.

⁴⁴ Id.

 $^{^{45}}$ *Id.* The court also rejected the government's argument in its petition for rehearing en banc that the definition of bone marrow in 42 U.S.C. § 274l-1 (2006), which includes cells in the peripheral blood, should apply to NOTA. *Id.* at *9–10. The court found that the definition applied only to that specific statute. *Id.* at *9. The court also distinguished the statute from NOTA because the statutes dealt with different subject matter. *Id.* at *10. Finally, if the definition applied to NOTA, it would result in a ban on blood compensation, which NOTA allows. *Id.*

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NOTA, nor did it give enough weight to Congress's intent. However, the opinion may have positive policy implications by leading to an increase in bone marrow transplants, saving thousands of lives each year. The decision may be especially helpful for minority populations, who have a particularly difficult time finding donors.

The court's interpretation of NOTA improperly focused on the second half of PBSC apheresis — the removal of HSCs from the blood. However, a critical step of PBSC apheresis is the initial mobilization of HSCs out of the marrow through medication. The court failed to acknowledge adequately this first step, which may subject PBSC apheresis to NOTA's ban on "knowingly acquir[ing]"⁴⁶ a "subpart" of the marrow.⁴⁷ While NOTA does not define "subpart," the court stated that "subpart' refers to the organ from which the material is taken, not the organ in which it was created,"48 and concluded that HSCs are taken from the blood.⁴⁹ The necessity of the first step of PBSC apheresis, in which the medication causes HSCs to leave the marrow, suggests that HSCs are in fact taken from the marrow. If the court would consider HSCs extracted directly from the marrow as "subpart[s]" of the marrow under the statute, then a medically induced mobilization of those same HSCs out of the marrow should not change the court's interpretation. From this perspective, PBSC apheresis is not substantially different from aspiration. The important step in PBSC apheresis removes HSCs from the marrow through medication whereas aspiration uses a needle. Both the needle and the medication are man-made ways to take the HSCs out of the marrow. While the court's interpretation is plausible, especially considering that HSCs exit the body from the blood in PBSC apheresis, HSCs should be seen as a "subpart" of the marrow.

Congressional intent, as evidenced by legislative history and a similar statute, suggests a different result from that of the court.⁵⁰ Congress indicated that live bone marrow donations present "[s]pecial concerns . . . because [donors] are very difficult to match with recipients."⁵¹ These donations require matching certain blood proteins located on the HSCs,⁵² which can have almost 600 million combina-

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⁴⁶ 42 U.S.C. § 274e(a) (2006 & Supp. IV 2011).

⁴⁷ *Id.* § 274e(c)(1).

⁴⁸ *Flynn*, 2012 WL 1001300, at *9.

⁴⁹ *Id.* at *10.

⁵⁰ In its petition for rehearing, the government similarly argued the court's result "could not be squared with the text and legislative history of [NOTA]." Appellee's Petition for Rehearing and Rehearing En Banc at 9–10, *Flynn*, 2012 WL 1001300 (No. 10-55643), 2012 WL 523381, at *9–10.

⁵¹ H.R. REP. NO. 98-1127, at 17 (1984) (Conf. Rep.).

⁵² See Bone Marrow Transplantation, supra note 5 ("[T]he success of allogeneic transplantation depends in part on how well the HLA antigens of the donor's stem cells match those of the recipient's stem cells.").

tions.⁵³ This issue exists in both aspiration and PBSC apheresis because matching HSCs occurs in both.⁵⁴ Congress's concern was therefore likely not about the fatty, spongy tissue but about the HSCs. Additionally, in a statute expanding the bone marrow registry, Congress stated that bone marrow includes "the cells found in adult bone marrow and peripheral blood."⁵⁵ The court could have considered this definition relevant to a broad interpretation of NOTA.⁵⁶ These sources suggest Congress focused on HSCs when including bone marrow in NOTA.

Even though the court argued that prohibiting compensation for PBSC apheresis would prevent compensation for blood donations, the text and congressional purpose do not require such a result. While red and white blood cells may "come from the bone marrow,"⁵⁷ they are not taken from the marrow as HSCs are. The majority of mature blood cells are not found in the marrow, nor does a donor take medication to release them into the bloodstream. The court also argued that banning compensation for PBSC apheresis would ban compensation for blood donations because blood contains "subparts" of other organs, like Vitamin B₁₂, which originates in the intestine.⁵⁸ However, the intent of a blood donation is to remove not only B₁₂, but also blood.⁵⁹ The intent of PBSC apheresis is to remove only HSCs. These important differences distinguish the two procedures under NOTA.

Yet while the court arguably misinterpreted "subpart," *Flynn* may lead to desirable policy consequences. The altruistic system under NOTA has not achieved equilibrium between demand and supply.⁶⁰ Each year, over 1000 people die because they did not receive trans-

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 $^{^{53}}$ Office of Inspector Gen., Dep't of Health & Human Servs., National Marrow Donor Program 1 (1996).

⁵⁴ See Bone Marrow Transplantation, supra note 5.

⁵⁵ 42 U.S.C. § 274l-1(2) (2006). This section replaced the National Bone Marrow Donor Registry with the C.W. Bill Young Cell Transplantation Program in an effort to increase transplants. *See* 42 U.S.C. § 274k(a) (2006). Medical textbooks suggest a similar definition of HSCs. *See*, *e.g.*, KIM E. BARRETT ET AL., GANONG'S REVIEW OF MEDICAL PHYSIOLOGY 522 (23d ed. 2010) ("[HSCs] are *bone marrow cells* that are capable of producing all types of blood cells." (emphasis added)).

⁵⁶ The court's rejection of this argument is certainly reasonable; however, it is not compelled, especially given the paucity of case law on bone marrow. The court could have found that the statutes had a similar subject matter and, under the canon of consistent meaning, interpreted the language similarly. *See* Close v. Thomas, 653 F.3d 970, 974–75 (9th Cir. 2011) (applying canon to statutes in same subchapter), *cert. denied*, No. 11-8317, 2012 WL 137254 (U.S. Feb. 21, 2012).

⁵⁷ *Flynn*, 2012 WL 1001300, at *9.

⁵⁸ See id.

⁵⁹ Cf. What Is a Blood Transfusion?, NAT'L HEART, LUNG & BLOOD INST., http://www.nhlbi.nih.gov/health/health-topics/topics/bt/ (last visited May 3, 2012).

⁶⁰ See Mark F. Anderson, Encouraging Bone Marrow Transplants from Unrelated Donors: Some Proposed Solutions to a Pressing Social Problem, 54 U. PITT. L. REV. 477, 486 (1993) (discussing the current approach's deficiency in matching donors with recipients).

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plants.⁶¹ Payment for bone marrow may increase the number of registered donors and the probability of patients' finding matches.⁶² One study on bone marrow transplants suggests that an increase in donations would occur if incentives were offered for providing donations.⁶³ Compensation has been effective in incentivizing donations of other regenerative parts, such as plasma and eggs.⁶⁴

The program may also help elicit donations from minority populations.⁶⁵ Minorities, particularly Asian Americans and African Americans, are more genetically diverse than Caucasian Americans.⁶⁶ Because of the genetic specificity required for bone marrow transplants, these populations have more difficulty finding suitable matches and require more registered donors to increase the likelihood of a match. However, minorities are proportionally less well represented than Caucasians in the marrow registry.⁶⁷ One possible reason for lower representation is the cost of bone marrow donation.⁶⁸ Thus, financial incentives could greatly impact the donation rates of these populations.⁶⁹ In fact, MMD's program is in part targeted at increasing minority donors.⁷⁰ Therefore, the court's decision may especially help those patients least likely to find matches.

⁶⁹ *Cf.* Bergstrom et al., *supra* note 62, at 1327 ("It is difficult to see how the registry can attract sufficient numbers of African American registrants without providing much stronger incentives than are currently available.").

⁷⁰ See Complaint for Declaratory and Injunctive Relief, *supra* note 18, at 29 (noting that, in order to increase the supply of rare marrow cell donations, MMD initially planned to provide compensation only for minority and mixed-race donors).

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⁶¹ MORE MARROW DONORS, http://moremarrowdonors.org/?page_id=87 (last visited May 3, 2012). Statistics are worse for minorities than they are for Caucasians, 75 percent of whom find a donor. African Americans find a donor only 25 percent of the time, Asian Americans 40 percent of the time, and Hispanics 45 percent of the time. *Id.*

⁶² See Theodore C. Bergstrom et al., One Chance in a Million: Altruism and the Bone Marrow Registry, 99 AM. ECON. REV. 1309, 1326–27 (2009). Other scholars have argued for payment for all organs. See, e.g., Eugene Volokh, Medical Self-Defense, Prohibited Experimental Therapies, and Payment for Organs, 120 HARV. L. REV. 1813, 1832–35 (2007).

⁶³ Bergstrom et al., *supra* note 62, at 1327.

⁶⁴ See A. Farrugia et al., Payment, Compensation and Replacement — The Ethics and Motivation of Blood and Plasma Donation, 99 VOX SANGUINIS 202, 205 (2010) (plasma); Kimberly D. Krawiec, Sunny Samaritans and Egomaniacs: Price-Fixing in the Gamete Market, LAW & CONTEMP. PROBS., Summer 2009, at 59, 65–66 (eggs).

⁶⁵ See Anderson, supra note 60, at 489-90.

⁶⁶ Bergstrom et al., *supra* note 62, at 1310.

⁶⁷ See id. at 1327.

⁶⁸ See Joseph H. Laver et al., Assessment of Barriers to Bone Marrow Donation by Unrelated African-American Potential Donors, 7 BIOLOGY OF BLOOD AND MARROW TRANSPLANTA-TION 45, 46 (2001) (finding cost to be a barrier to bone marrow donation). Some scholars speculate that minority communities have been less likely historically to donate any kind of organ under the current scheme. See INST. MED., ORGAN DONATION 2 (James F. Childress & Catharyn T. Liverman eds., 2006) ("In the past, donation by minority populations has been hindered by mistrust of the healthcare system, inequities in access to transplantation, and failure to request donation.").

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While the court's decision may have positive implications, it has already encountered several moral objections⁷¹ and will likely continue to do so.⁷² Many objections will be the same as those generally levied at compensation for organs, such as concerns about commodification.⁷³ However, PBSC apheresis differs from other organ transplants because HSCs regenerate and the procedure is not as invasive as a kidney or liver transplant.⁷⁴ Thus, objections to general organ donation may not be as applicable to bone marrow.⁷⁵ An objection that may apply to PBSC apheresis is the exploitation of patients.⁷⁶ Because of the difficulty of finding a match, a patient could have only one potential donor.⁷⁷ Such a donor could demand an exorbitant price for the donation.⁷⁸ In this situation, regulations would be necessary to ensure fair access to the procedure.⁷⁹

While the court did not adequately consider all aspects of the PBSC apheresis procedure, its decision may have positive policy implications. The bone marrow registry currently contains only two percent of the population,⁸⁰ resulting in thousands of patients going without necessary transplants. These statistics suggest that a change to the current system is necessary. It is possible that a compensation scheme may not be the best solution, but it is worth a try.⁸¹ *Flynn* may provide an important opportunity to experiment with a solution for bone marrow shortages.

⁷³ See INST. MED., supra note 68, at 263–77 (discussing "ethical considerations in living donation"); see also Francis L. Delmonico et al., Ethical Incentives — Not Payment — for Organ Donation, 346 NEW ENG. J. MED. 2002, 2004 (2002).

⁷⁴ See Nicolette Young, Note, Altruism or Commercialism? Evaluating the Federal Ban on Compensation for Bone Marrow Donors, 84 S. CAL. L. REV. 1205, 1230 (2011).

⁷⁵ See Anderson, *supra* note 60, at 491 (arguing that paying for bone marrow would be similar to compensating for blood and that "concerns underlying moral opposition to selling the human body . . . do not appear to be present when the parts of the body to be sold are easily donated and readily replenished").

⁷⁷ See id.

 78 See *id.*; see *also* Anderson, *supra* note 60, at 493 (warning that "desperate patients could be subjected to the worst kind of blackmail").

80 MORE MARROW DONORS, supra note 61.

⁸¹ If the scheme is unsuccessful, the Secretary of Health and Human Services can issue an interpretation overruling *Flynn. Cf.* Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs., 545 U.S. 967, 982–83 (2005).

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⁷¹ See Editorial, Stem Cell Donors, Not Sellers, L.A. TIMES, Feb. 5, 2012, at A19 (warning that compensating donors will make transplants "available mainly to the rich").

⁷² See Michael Boo et al., Remuneration of Hematopoietic Stem Cell Donors: Principles and Perspective of the World Marrow Donor Association, 117 BLOOD 21, 22–23 (2011) (reviewing moral arguments against compensation for HSC donation).

⁷⁶ See Boo et al., supra note 72, at 23.

⁷⁹ *Cf.* Young, *supra* note 74, at 1227 (noting that the exploitation of donors "could likely be alleviated with mere regulation rather than a complete ban" on compensation). MMD's program may pose less risk of exploiting patients because the patient would not pay the donor and the donor would receive a fixed price.