Approximately one in six persons in the U.S. lacks medical insurance. Legislation permits only physicians to prescribe many common medicines. This state of affairs is unjust. A just society cannot have it both ways: legislation cannot say that the expertise of physicians is so precious that only they can prescribe medicine *and* that not everyone is guaranteed reasonable access to their services. If there is no guarantee of reasonable access, then physicians should not have a monopoly on writing prescriptions, and if there is a monopoly on writing prescriptions then people should have reasonable access to their services. To remedy this situation we must ensure that all citizens have reasonable access to medical services, or allow the uninsured to self-medicate.

Keywords: computer-diagnosis, insurance, justice, self-medication, universal healthcare.

1. Introduction

How does access to professional health care promote good health? At least two answers immediately suggest themselves: (a) health care practitioners have knowledge and expertise in the art of healing, and (b) health care practitioners have a monopoly on writing prescriptions. These two reasons indicate why there are obvious repercussions for those who do not have reasonable access to physicians' services.[1] Of course, the word "reasonable" is important here. After all, there is the old joke – for those who enjoy gallows humor – that the U.S. has universal access to healthcare so long as one is willing to commit a crime to see the county jail's physician, or make oneself sick enough to qualify for emergency services. Putting aside such extraordinary measures, at least some deficit in accessing physicians' services can be

made up through consulting written medical knowledge. Many libraries have medical textbooks, and the Internet has many good sites that contain medical knowledge, but all the knowledge in the world is not going to do much good if treatment requires a prescription. The physicians' monopoly on writing prescriptions means that nothing (legal)[2] can be done in terms of treatment if one does not have access to a physician's prescription pad. This state of affairs is unjust. A just society cannot have it both ways: legislation cannot say both that the expertise of physicians is so precious that only they can prescribe medicine *and* not everyone is guaranteed reasonable access to their services. In other words, if there is no guarantee of reasonable access, then physicians should not have a monopoly on writing prescriptions, and if there is a monopoly on writing prescriptions, then people should have reasonable access to their services.

To support this position, I will make an argument with two steps. The first is the following general principle:

> *Principle of Just Access to Medicine* (JAM): If one does not have reasonable access to a qualified physician then, other things being equal, it is morally permissible to self-prescribe at least some of the medicines available currently by physician prescription only.

The second step is to claim that at least some persons in the U.S. do not have reasonable access to physicians' services. The conclusion which follows is that some persons ought to be permitted to self-prescribe at least some of the medicines that are available at present only by prescription by licensed medical practitioners, or that everyone ought to be granted reasonable access to physicians' services. Since most readers are likely to find the former position less plausible, the reasoning of the argument supports universal access to health care professionals.

2. In support of JAM

Crucial to JAM is what counts as "reasonable access." For instance, I imagine that there is near universal assent to applying JAM where it is physically impossible to employ the services of a physician. Imagine you are the last surviving member of an ill-fated scientific expedition to a remote mountain in Antarctica. An avalanche has buried your comrades including the expedition's doctor. Fortunately for you, many of the provisions are still easily reached and you estimate you will have to wait ten days until you are rescued. To make matters worse, you believe that you have strep throat based on self-diagnosis guided by a medical textbook you have recovered. You have all the classic symptoms including a sore throat, swollen lymph glands, loss of appetite, muscle pain, joint stiffness and enlarged tonsils with specks of pus. The black irony of your situation is that among the provisions recovered is the physician's medical bag and antibiotics (you have used previously) that could treat your condition, as indicated by the medical text. Of course, you cannot take the medicine without a prescription from a licensed physician. How unfortunate for you, for now your chances of survival have considerably diminished. Indeed, you face double jeopardy because your strep throat will be untreated, and the stress on your system (cold, anxiety) may lead to serious complications.

Of course, no one would blame you for taking the antibiotics and breaking the law in this instance. After all, your need is great, and you have no immediate access to a physician. Of course, you could wait ten days for a physician, but this would be to put your health, and possibly your life, at serious risk. It would be hard to believe that even Socrates would recommend kowtowing to the law of your native land in this case. Since it would be unreasonable to deny access, the principle of JAM licenses self-medication in this instance.

JAM also is relevant where one would have to put oneself in serious jeopardy to employ the services of a physician. Suppose the expedition's emergency satellite phone ended up on the other side of a chasm. The chasm is pretty wide, but you figure there is a 95% chance that you could jump safely, and a mere 5% chance that you will fall to your death. You figure that if you take the antibiotics, your chances of surviving until the rescue party arrives are better than 99.9%. If you do not take the antibiotics, and do not make the perilous jump, then you estimate your chances of survival are less than 95%. Since it is unreasonable to insist that you take such large risks, JAM says that it is permissible for you to take the safer course: take the antibiotics without authorization from a physician and wait for rescue workers.

Imagine now a monetary variant on our example. This time the emergency phone is in reach. When you go to use it, however, you find it is damaged; it will dial only one number. To your relief the number is one that is in service; someone named "Justin" picks up. You explain your plight to Justin and Justin agrees to call authorities for you on the condition that you consent to sign over the deed to your house and have your wages garnished to minimum wage level with the garnishment going to him. You say that this is a totally exorbitant price to pay, and Justin says that he sympathizes with your plight. It was bad luck that got you into your current straits, but Justin too had a string of bad luck. He was laid off from his job last year and he lost his medical insurance. Illness forced him to sell his house. He has found work again, but it pays only a fraction of what he used to earn. So, Justin faces a crushing debt from his medical expenses. Now, says Justin, fortune favors him and misfortune favors you. You consider that it would be possible to comply with his demands: you could move into a small apartment with your two children, but it would be a huge financial burden. You could not, for example, afford Internet if you comply with Justin's demand, and you know how important the Internet is for your children's schoolwork. So, although it would be possible to comply, still, Justin's monetary demands are outrageous. Fortunately, JAM authorizes you to self-medicate: you could take the antibiotics and wait to be rescued. The cost to your well-being, and that of your family, means that you do not have reasonable access to physicians' services.

3. Applying JAM

The next step in the argument is to show that the principle applies to our present political reality. Before we do this, however, notice that JAM can be interpreted in broader and narrower terms along two dimensions. One is the issue, which we have begun to explore, as to what constitutes "reasonable" access? The broadest construal might mean that even the slightest inconvenience constitutes unreasonable denial of access; the narrowest may claim that only physical impossibility counts as unreasonable denial of access. I will take a moderate view here, suggesting that some sacrifices to our own and our loved ones' well-being are too great to constitute reasonable access. I will focus on a proper subset of the uninsured in the U.S.: the least financially well off.

The second dimension says something about the services, pharmaceuticals, etc., that should be available for self-prescription. The broadest construal here would be that persons ought to be able to self-prescribe anything a physician might prescribe at any time. I will argue for a very modest position, that routine antibiotics to treat common infections, along with the associated lab tests, ought to be available for self-prescription. Narrowing the range of what may be self-prescribed should allay the objection that people will self-prescribe heroin or other drugs if given the slightest opportunity. Also, the narrower position is more defensible but also of significant practical importance. Antibiotics are undoubtedly the single most important pharmaceutical innovation in the last century. Their continued importance can be seen from the fact that upper respiratory tract infections are the most common reason for seeking health care services in the U.S., and antibiotics are prescribed in about two-thirds of all physician visits for this ailment (Linder et. al., 2003). Towards the end of this paper, I will very briefly consider the question of which prescription drugs should be available for self-prescription.

In the U.S., one group that does not have reasonable access to physician services is single uninsured parents making less than $20,000 per annum. This applies to about two-thirds of single mothers (Mulroy 1995, 85). To put this is more concrete terms, imagine a woman, Jill, who has two children under the age of ten whom she supports by working at a fast food restaurant for $9 an hour ($18,720 gross per year, assuming she never has to take time off, and she is always scheduled for 40 hours). This salary is above the minimum wage in the U.S., but not by much. She has managed to scrimp and save $75, $50 of which she hoped to use to realize her eldest child's dream of joining a soccer league. Any unexpected expenses she faces over and above $75 will force her to give up the "luxury" of an Internet connection in her home. The scare quotes around "luxury" are to indicate that, like you, she feels it is a necessity to have Internet access in order for her children to keep up at school. After all, many homework assignments involve the use of the Internet.

Unfortunately, she has developed a sore throat and through some online investigation she has narrowed the cause to a viral infection, or the bacteria infection commonly referred to as "strep throat." Under the present system her choices are (a) do nothing or (b) see a physician and pay out of pocket for the services ($75), and then possibly a strep test ($25) and antibiotics ($50) (alternatively, she could go to the local hospital and be billed for the physician's services, etc., in which case she is no further ahead). If she were allowed to self-diagnose and self-medicate (SDM), a third option would be available to her: (c) she could access information for free on the Internet, pay for the strep-test out of pocket ($25) and write her own prescription for antibiotics ($50) if necessary. The table below summarizes the options open to Jill:

Diagnostic and treatment option	**Disease**	**Physician**	**Strep Test**	**Antibiotics**	**Total**
A). No treatment	??	0	0	0	0
B). Consult Physician	Strep	$75	$25	$50	$150
	Viral	$75	$25	0	$100
C). SDM	Strep	No	$25	$50	$75
	Viral	No	$25	0	$25

So, consulting a physician to discover she has a viral infection will cost her four times as much as the SDM option ($100 versus $25). Consulting a physician to find out she has strep throat, and the associated treatment, will end up costing her twice as much as the SDM option ($150 versus $75). We can think of this in terms of what she must sacrifice in each case. If she has a viral infection, then on the SDM option, she will be out only $25 and so will not have to sacrifice her son's soccer league aspirations nor her Internet connection. To confirm a viral infection by employing a physician will require her to sacrifice the soccer league for her son, and still leave her scrambling to come up with $25 or face losing her Internet access. If she has strep throat then on the SDM option this will mean no soccer for her son, but no loss of Internet access. Consulting a physician to confirm a strep throat diagnosis will mean no soccer and no Internet for six months or so. In short, she will have to pay an unreasonable cost to the well-being of her

family in order to employ the services of the physicians' monopoly. Notice, too, that the reasoning here overlaps with the case where you refuse to accede to Justin's demands that would require you to sacrifice the well-being of your family.

Critics will point out that an assumption of the argument is that the uninsured will in fact benefit from SDM. However, in fact self-diagnosis is unreliable, which means there is a chance of misdiagnosis. Indeed, the point may be pressed since the danger is twofold: people may self-medicate for diseases or injuries that they do not have, and they may not notice symptoms or make the appropriate inference as to their actual ailment. Indeed, fuel for the objection is spurred by the fact that even trained medical professionals are encouraged or required to seek the help of other physicians. The usual injunction is: Physician, do not heal thyself.

There are two replies to this objection, a small one and a big one. The smaller point is that the contrast here is not between physician infallibility and complete incompetence on the part of patients. In either case, it is always a matter of probabilities and the difference here may be much less than one imagines. An average visit to a physician takes about 15 minutes. Physicians can and do misdiagnose frequently: they prescribe for nonexistent diseases or injuries and fail to notice symptoms or make the correct inferences. An article in the *Journal of the American Medical Association* noted: "Two 1998 studies validate the continued truth that there is an approximately 40% discordance between what clinical physicians diagnose as causes of death antemortem and what the postmortem diagnoses are" (Lunberg, 1998). This is a pretty shocking statistic: in 4 out of 10 deaths there is a disagreement between what physicians think is the cause of death prior to autopsy, and autopsy findings.

On the other hand, while there are not a lot of studies done on the effectiveness of persons self-diagnosing and medicating, what few there are show that with some training the public can be reasonably good at self-diagnosing certain diseases. One study, for example, showed that female soldiers with minimal training are comparable to physicians in their accuracy in diagnosing genitourinary infections (Lowe and Ryan-Wenger, 2000). Another study revealed that expatriate workers in malaria prone areas were able to successfully self-test and self-medicate for malaria (Roukens et. al., 2008) There is also evidence that computer diagnosis of certain conditions can be significantly better than human diagnosis (Zhang and Lin, 1999, Sordo et. al., 2002). For example, in a well-known 1971 study, a computer diagnostic system was pitted against experienced physicians in the diagnosis of acute abdominal pain: computer diagnosis was 91.1% accurate compared to 79.7% for experienced physicians (de Dombal et. al., 1972). In another study, computer diagnosis matched that of neurosurgeons, orthopedic surgeons and general practitioners in overall average in diagnosing lower back pain. While humans surpassed computers in non-critical cases, computers surpassed humans in diagnosing more critical spinal symptoms in which quick intervention is correlated with better outcomes (Bounds et. al., 1998).

In our case, we must imagine that Jill uses a free diagnostic computer program available on the Internet (funded by charitable donations, let us suppose). She inputs data about her physical state, temperature, visible symptoms, etc. and the computer program spits out possible causes, recommended tests, as well as associated treatments. In her case, the computer program recommends getting a strep throat test. In sum, the evidence at hand is circumstantial, but it suggests that a computer diagnosis of common ailments may approach that of a 15-minute visit to a primary care physician.

The much bigger point is that the objection is based on the wrong contrast class. Consider two questions:

> 1. How do health outcomes differ for patient self-diagnosis and self-prescription compared with physician diagnosis and physician-prescription? (Assume here that patient and physician are never one and the same.)

2. How do health outcomes differ for patient self-diagnosis and self-prescription with no medical treatment or delayed medical treatment?

The difference between these two questions can be illustrated by thinking once more about our Antarctica case. It is absurd or even cruel to think that it is a relevant consideration that because medical opinion is more reliable than your own self-diagnosis this is sufficient reason to prohibit you from taking the antibiotics in the medical bag. The reason of course is that since your access to medical help will be, at best, significantly delayed, a comparison of your self-diagnostic and prescription abilities with that of physicians is irrelevant.

In other words, if the objection is at all relevant, the contrast cannot be between physician diagnosis and self-diagnosis, but often between self-diagnosis and either no physician diagnosis, or significantly delayed physician diagnosis. One of the many sad facts about the plight of the uninsured is that "two-thirds of uninsured women (67%) report they delayed or went without care they believed they needed in the past year because they could not afford it" (Kaiser Women's Health Survey, 2004). The effects on the health of the uninsured as compared with the insured are quite dramatic including "estimates attributing to uninsurance an overall increase of 25 percent in mortality risk for working-age adults" (Dorn, 2008). The plight of many of the poor and uninsured is such that they would have to be pretty near imbecilic at self-diagnosis and self-medication of antibiotics before things would not be better for them under SDM. As noted, the benefits of antibiotics are enormous, and their side effects are typically much less harmful than the diseases they are used to treat.

It may help to think again about our single mother. Given the statistics just noted, there is a good chance that she will not see a physician for her sore throat. She may reason that there is a good chance that it is simply a viral infection, for which the physician may not prescribe anything. She reasons as well that if she has strep throat she may be able to fight it off naturally. She realizes, too, that there is some chance that she has strep throat and that she could get so sick that she will require hospitalization. The uncertainty of this outcome, against the certainty that if she sees a physician her son will not be playing soccer or using the Internet at home, means she is willing to take the risk. The question is whether SDM is better for her health than delayed or no physician diagnosis. The dangers to her health in this instance are fairly limited, mostly to do with complications from antibiotics if she tests positive for strep. Of course such complications may happen with a physician diagnosis too.

But what should be said to the objection that a computer diagnosis could miss something that a physician with years of experience may have picked up on? This question again involves a wrong contrast class: If she is not likely to see a physician, then the fact that a physician may have made a different and better diagnosis is entirely beside the point. This is no more relevant than if we say to someone with medical insurance: look, if you pay out of pocket to see six specialists for a diagnosis the result is statistically more likely to be correct than if you just rely on what your health insurance will pay for, namely, a visit for your sore throat to your family doctor. The high bar of six specialists confirming the diagnosis is irrelevant: for what appears to be a routine sore throat, almost no one will pay out of pocket to see six specialists. Similarly, the high bar of employing physician services for a sore throat is irrelevant for the poor and uninsured, since many are not likely to pay out of pocket to see a physician.

Also, there is some evidence that the less common a disease in a population, the better computer diagnoses compare with human diagnoses. This is not necessarily because of incompetence: if a disease is rare, a family physician will have little experience with it and perhaps no knowledge. Computers, of course, can hold massive databases including, perhaps, all the records of all previous cases. So, there is no reason to suppose that physicians will necessarily pick up on something that a computer diagnosis will miss (Brause, 2001). Indeed, increasingly patients use the Internet to suggest a diagnosis missed by the physician (Alper, 2006).

Furthermore, notice that the option for consulting a physician is not significantly diminished through self-diagnosis. If Jill's symptoms do not disappear after a few days she can make the decision to consult a physician and pay the hefty price for doing so. So SDM and physician consultation are not mutually exclusive. To the extent that the poor have any choice in seeing a physician, SDM in no way undermines this choice. In other words, our present system allows only options A and B above. The proposal under consideration is to allow A, B and C.

Despite what has been said in favor of SDM, this much must be admitted: it is ultimately an empirical conjecture that the SDM option would yield better health outcomes for the uninsured. I've argued that what evidence there is supports the conjecture that SDM would be better for the uninsured than our present state of affairs, but this conjecture is amenable to further testing. Thus, the experimental question is whether having SDM as an additional option provides better health outcomes for the uninsured as opposed to receiving what medical attention the uninsured receive at present. So, the experimental group would receive instruction on using Internet based software to self-diagnose and self-medicate for certain conditions, e.g., upper respiratory infections. This group would be matched with cohorts from the general population of the uninsured and matched for similar health indices, e.g., the cohorts would be similar in age, fitness, existence of pre-existing health conditions, and so on. After six months or so, the health outcomes for the two groups could be compared. The fact that those in the experimental group are almost certainly going to have more knowledge about their health, a better understanding of treatment, and more likely to get treatment, strongly suggests that the health outcomes of the experimental group will be significantly better. Given what we know about the poor state of health of the uninsured, it seems a very good bet that the addition of the SDM option will improve their condition compared with controls.

Notice that the conjecture here is not that the experimental group will have better heath outcomes than those with insurance. This is an entirely different question. It could be addressed in the same study by giving a second experimental group, drawn from the uninsured, medical insurance for the same period. So, imagine three groups of 1,000 individuals each. Group A is the control group who receive what little medical care the uninsured now presently get. Group B would have the option of self-diagnosing and self-medicating, and Group C would be provided with medical insurance. I suspect the differences between Group B and Group C would be much less than some might imagine. Physicians may beat out the software on the diagnoses stage, but those who are charged with self-diagnosing and self-medicating are probably more likely to follow through, and so may have an advantage on the treatment end. (Non-compliance with physician directives for treatment and follow-up visits can be quite high, e.g., studies show that many patients do not take the full course of antibiotics prescribed by their physician (McNulty et al., 2007)). Of course, even if insurance provides much better health outcomes, it will not affect the present argument one iota, since if it turns out that patients under physicians' care have better health outcomes such a result is irrelevant if people cannot afford their services.

An objection might be raised on behalf of public health. If we permit self-medication, isn't it likely that antibiotics will be overprescribed and lead to antibiotic resistance? A preliminary response is that the question is poorly phrased: we should ask whether there would be further antibiotic resistance due to over prescription, since over prescription is presently prevalent with physician prescription (McKee et al., 1999; Ong et al., 2007). There is an epidemiological and a moral reply to this objection. The epidemiological reply questions whether the use of antibiotics will increase for society as a whole. Consider again our mother of two. Suppose she has strep throat but does not take antibiotics. She will be contagious for weeks compared to only a few days if she took antibiotics. If she passes strep throat to her children, who infect several others at school, who infect others, and so on, the overall use of antibiotics may go up. She may also infect her co-workers, since she is not likely to take an extended period of time off from work, and naturally these individuals may infect others, so antibiotic use may rise for society as a whole. In other words, any tendency to overprescribe will have to be balanced against the effects on

others of not prescribing enough. Again, the contrast here is not what happens under physicians' care, because we know that persons in Jill's situation routinely forgo medical treatment.

The moral response requires us to notice first the logical structure of the objection itself. In effect the objection says that the health of the uninsured must be sacrificed for the collective good. Which is to say that the objection requires the social welfare premise:

> SW: It is sometimes moral to require the sacrifice of the welfare of some for the sake of the welfare of the general community.

Some moral and political theories reject this premise outright, so for them this objection will have no traction. We need not directly challenge the premise, rather, let us grant SW and see what follows. Clearly, it is important to ask: Who should sacrifice for the collective good and how? If antibiotic resistance is less of a problem when physicians have a monopoly on prescribing, then the correct application of SW is that the collective good should be achieved by having the rich sacrifice some of their wealth to ensure universal health care, as opposed to the sacrificing of the health of the poor by prohibiting SDM for the uninsured. In other words, if collective outcomes are as important a moral consideration as SW says, then it is only a morally inverted world that would see these ends achieved by sacrificing the health of the poorer members of society rather than sacrificing something from the wallets of the richer members.

4. Conclusion

The conclusion here is reasonably circumscribed: we have argued that a limited number of persons, the poor and uninsured, ought to be able to self-prescribe a limited number of medications, such as common antibiotics, given lack of universal health care. Some may think this is only the thin edge of a wedge. They are probably right. If the health outcomes of the poor improve on the SDM proposal then surely expanding the option to others as a means to reduce health care costs and expanding the range of medications for self-administration ought to be explored. But it may be protested then that there is no clear indication of the exact scope of the argument. For instance, assuming the argument was accepted, what prescriptions should policy-makers make available for self-prescription for the poor and which should remain available only by physician prescription? Although important, this question has not been answered here. But notice also that it need not be answered for present purposes. Our opponent says that the poor should not be able to self-prescribe any medicines presently available only by physician prescription. We need only show a single counterexample to this very general position. As an analogy: if an opponent claims, "All swans are white," one need bring only a single non-white swan to the table to refute the generalization. Our single counterexample is that the poor and uninsured ought to be able to self-prescribe common antibiotics like penicillin and erythromycin. This is consistent with the admission that much more work needs to be done to understand how the SDM option might be implemented as a matter of policy.

I suspect that most policymakers, health care workers and the voting public will think the SDM alternative absurd. Given the absurdity of endorsing SDM our argument constitutes a new moral reason for endorsing reasonable access to physicians' services: to think otherwise leads to absurdity. In other words, the reasoning is as follows. Assume (for the purposes of reductio) that as a society we ought not provide universal health care. If this is so, then we ought to allow the SDM option. But allowing the SDM option is absurd, so the original assumption is false. We ought to provide universal health care. Our argument also provides a prudential reason for powerful interest groups like the AMA that have historically done little to support reasonable access to physician's services: SDM would undermine their monopoly, and so provides them with some self-interested reasons for endorsing universal health care coverage. Perhaps the AMA (and their ilk) will be more moved by prudential considerations.

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