Chapter 21

Solidarity and Antimicrobial Resistance

Søren Holm and Thomas Ploug

Abstract The concept of solidarity has received increasing attention in discussions about public health interventions, both as a possible justification for such interventions and as a possible motivating factors for individual action. This chapter provides an analysis of whether thinking through a lens of solidarity is likely to be helpful in devising strategies and policies to combat antimicrobial resistance. It first provides a critical overview of recent accounts of solidarity and argues that solidarity must be understood as a group based concept. It then applies this conception of solidarity to individual use of antibiotics through a case study of the antibiotic treatment of moderate and severe acne where it is argued that solidarity based thinking is valuable within a context of shared decision-making. Issues of policy making are then discussed and it is argued that basing a policy on solidarity on the one hand constrains the methods chosen to pursue public health goals, but that on the other hand solidarity may provide a strong and durable motivation to comply with such a policy. The limits of solidarity are explored in the final section and it is concluded that 1) the concept of solidarity does have an important role to play in thinking about public health, 2) considerations of solidarity can help us shape the goals and methods of public health policies in the area of antibiotics, and 3) that it is likely that solidarity may also be helpful in thinking through other contentious issues in public health.

Keywords Antibiotic resistance · Bioethics · Collective action · Solidarity

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21.1 Introduction

Antibiotic resistance in bacteria, viruses and other pathogenic microorganisms is an increasing public health problem. The treatment of infectious diseases depends on the availability of effective antibiotics and modern surgery is only possible because post-operative infections can be effectively treated. It is therefore of the utmost importance to devise policies that can minimise and delay the emergence of resistance, as well as policies that promote the development of new classes of antibiotics.

But developing such policies and ensuring compliance with them is a complicated problem. It is complicated by (1) the fact that the development of resistance is not only caused by misuse or overuse of antibiotics, (2) the possibility of resistant strains and resistance genes to spread rapidly in our globalised and interconnected world, and (3) the close connection between health system deficiencies in resource poor environments and the development of resistance (Daulaire et al. 2015).

Any use of antibiotics can lead to the selection of genetic variants that confer resistance to that antibiotic or class of antibiotics in microorganisms. Although proper use of antibiotics can minimise the emergence of such genetic variants it cannot completely prevent it, and there is some evidence that genes conferring resistance can be present even before the antibiotic is developed and used (Rolo et al. 2017a, b). Patients shed microorganisms during their treatment (e.g. approximately 1×10^{11} bacteria per gram of faeces), and the antibiotics themselves are also excreted in urine and faeces leading to selection for antibiotic resistance in bacteria in the sewer systems of health care institutions (Hansen et al. 2016).

This means that antibiotic resistance cannot be prevented merely by preventing misuse and overuse of antibiotics. In some circumstances we will also need to restrict proper use. We may, for instance have to restrict the use of an effective antibiotic against a known microorganism which is sensitive to that antibiotic in contexts where most of the cases of the illness in question are self-limiting. The cost of this will be that many patients will experience illness for longer than if they had been treated, and that some whose illness turn out not to be self-limiting may suffer more significant effects.

In this paper we will analyse to what extent the concept of ‘solidarity’ can help in (1) guiding personal and professional decision-making about the use of antibiotics, (2) designing and deciding on proper policies for minimising and delaying the emergence of resistance, and (3) maintaining support for and promoting compliance with anti-resistance policies. Solidarity is an old concept, but has recently experienced a resurgence in public health ethics.

The focus of the paper is on the use of antibiotics in human health care, and primarily on policies that aim to control the use of antibiotics in health care. There are significant issues concerning how to properly incentivise the development of new antibiotics and how to control the marketing of antibiotics, but these issues of ‘industrial policy’ are better analysed through the concepts of justice and injustice. Antibiotic use in veterinary medicine and in agriculture more generally, e.g. as growth promoters in animal husbandry is also outside the scope of this paper. These

practices contribute very significantly to the development and maintenance of antibiotic resistance, but we simply do not have space to analyse them in depth within the solidarity framework.¹

21.2 Solidarity and Public Health

Solidarity is an old concept with roots in both moral theology and socialist/social democratic political philosophy. Both the authors of this paper are from Denmark and up until the mid-1990s ‘solidarity talk’ was common in Danish political discourse and it is still common within the organised labour movement.

The concept of solidarity has recently been revived in public health ethics by Prainsack & Buyx and by Jennings & Dawson (Dawson and Jennings 2012, Jennings 2015, Jennings and Dawson 2015, Prainsack and Buyx 2011, 2016; see also Baylis et al. 2008).

Prainsack & Buyx develop their conception of solidarity from the bottom up in their important book-length exploration of the concept, building on the concept of the solidaristic act defined in the following way:

Solidarity is an enacted commitment to carry ‘costs’ (financial, social, emotional or otherwise) to assist others with whom a person or persons recognise similarity in a relevant aspect. (Prainsack and Buyx 2016, p. 52)

Based on this definition they then distinguish three ‘tiers’ of solidarity:

1. Interpersonal solidarity
2. Group solidarity
3. Contractual, Legal or Administrative Norms (or perhaps better ‘institutionalised solidarity’)

And they define group solidarity as:

... solidarity comprises manifestations of a *shared* commitment to carry costs to assist others with whom people consider themselves bound together through at least one similarity in a relevant respect (e.g. a shared situation, characteristic, or cause). (Prainsack and Buyx 2016, p. 55, emphasis in original)

Other important features of their account are that they see solidarity as an inherently symmetrical relation, and thus distinct from asymmetrical relations like charity (p. 67); and that they claim that solidarity is a hybrid descriptive-normative concepts and that it is therefore “... suited neither to be framed nor applied in the way clearly deontic concepts such as human rights, or justice, can be.” (p. 93)

We agree with their analysis in many respects. It is very useful because it shows that although the concept of solidarity has a history which links it historically to socialist and social democratic political philosophy, it can be developed and used

¹We do not even have space to consider whether or not human networks of solidarity can and should be extended to also encompass some or all animals.

for bioethical purposes without relying on any explicit or implicit socialist premises.² However, the commitment to develop the conception from the bottom up, from the individual, isolated solidaristic act leads to some problematic conclusions.

The first problem is that it may not make sense to define a specific class of solidaristic acts without reference to a motive grounded in group solidarity. Acts of beneficence or charity are often based on a recognition of 'similarity in a relevant aspect' between the agent and the beneficiary of the act, e.g. the ability to suffer or the ability to experience a certain kind of welfare benefit or the simple fact that the beneficiary is recognised as being a fellow human being; and beneficial acts based in justice are often built on the recognition that the agent and the recipient are similar in the relevant sense of being moral agents subject to obligations of justice.

The second problem is that it is far from obvious that relations of solidarity are, or have to be inherently symmetrical. Agents may perform solidaristic acts for other persons in the full knowledge that they can perform these acts because they have more power or more resources than those they assist, and that it is unlikely that they will need reciprocation. But, if the acts are motivated by solidarity and not by, for instance pity or a desire to do good works, then they should count as within the scope of solidarity. And even if the acts are performed with the expectation that they will be reciprocated if and when needed, that does not entail that the acts or the relationship is symmetrical at the time when the act is performed. If I, based on a motive of solidarity donate money to the striking workers during a long term strike, I may have an expectation that if ever I was participating in a long term strike someone would, based on solidarity donate money to me and my fellow strikers, but that would not necessarily be an expectation that the money would come from the very same workers who are now on strike, and it could still involve the realisation that I am currently much better off than they are. A strict symmetry requirement would also entail that solidarity with future generations beyond the lifetime of the moral agent would be ruled out, simply because whereas I can do something for future generations, they cannot do anything for me.³

It also cannot be definitional for acts of solidarity that they must involve net costs. Walking in the 1st of May parade with the other members of the blacksmiths' labour union was, at least in years when the weather was good, a great source of joy for one of our grandfathers, but it was also an act of solidarity and identification with the union, its members and its causes, as well as with the larger network of labour unions.

Jennings & Dawson has a more traditional understanding of solidarity as a group concept and identify three relational dimensions of solidarity:

The fundamental gesture or posture of solidarity is *standing up beside*. This posture has three relational dimensions: standing up *for*, standing up *with*, and standing up *as*. (p.32, emphasis in original)

² Whether that is sufficient to ensure that those socialist historical connotations will not be activated in the minds of readers or listeners when the term 'solidarity' is used is a different question.

³ Except, perhaps keeping my good reputation alive.

We stand up for when we “assist or advocate for the other” (p 36). We stand up with when our solidarity requires us to enter “into the lifeworld of the other”; and we stand up as when there is “a yet stronger degree of identification between the agents of solidaristic support and the recipients of such support.” (p. 37). These three dimensions are not fundamentally different types of solidarity and they all draw their justification from the same conception of solidarity, but they point to different levels of engagement and action. It is, for instance uncontroversial that health care professionals should in many circumstances stand up for the patient groups they serve, but their obligation to stand up with these patient groups only get activated in certain contexts, and it is perhaps even rarer that they are required to stand up as with a patient group. But, the obligation to stand up as may be activated in more circumstances for health care professionals if the issue that requires solidaristic action is an issue affecting other health care professionals. In our analyses below of the implications of solidarity for individual and group actions and societal policies in relation to antimicrobial resistance we use Jennings & Dawson’s three dimensions to indicate the level of engagement and commitment necessary for a particular kind of solidarity based action or policy to be likely to be effective.

21.3 Solidarity and Antimicrobial Resistance

Antimicrobial resistance is a problem that may potentially affect each and every one of us. It may currently be a more significant problem in some areas of the world, but it is not geographically containable. In order to reduce the rate at which antimicrobial resistance develops and spreads we also all have to be involved, since there is no use of antibiotics which does not promote resistance to some small degree.

We thus have a coordination problem. Each of us will in each instance where antibiotics can be prescribed personally benefit or potentially benefit by using antibiotics more than is optimal seen from the point of an optimal, overall balance between use and development of resistance. Or to put it the other way around, slowing down the development of resistance will require each of us sometimes to suffer when that suffering could have been potentially reduced by the prescription of antibiotics.

Coordination problems can, as discussed in other chapters of this book be solved in a variety of different ways, e.g. by changing the choice architecture and/or incentive structure. But some of these more structural solutions may either be illiberal in the sense that they reduce the option space available to individuals, even if none of the individual choices have any harmful consequences as individual choices, or they may create perverse incentives to try to circumvent restrictions in the choice architecture. It is therefore worth considering whether there are alternative options.

Can considerations of solidarity help to solve these coordination problems in a more constructive way, and what is required for solidarity to be activated?

If we look at Jennings & Dawson’s three relational dimensions of solidarity it seems to be the case that even persons who have not realised that antimicrobial

resistance is a problem for themselves can come to see that they ought to stand up for others in relation to antimicrobial resistance. They might, for instance decide to stand up for victims of extensively drug-resistant tuberculosis (XDR-TB) in sub-Saharan Africa, because they recognise some connection between themselves and the victims, even though they do not see themselves in any way threatened by XDR-TB.

However, once persons have realised that they share in the problem of antimicrobial resistance the two more intensely relational dimensions of solidarity can be activated, i.e. they can come to the realisation that they have to stand up with or as those who are threatened by antimicrobial resistance.

This does, potentially have different implications for ordinary persons /patients and for health care professionals. Ordinary persons can stand up with others in a number of ways in this context, they can advocate for policy changes, for research investment and for increased health care; and they can stand up as and take responsibility for their own use of antibiotics and encouraging others to do the same.

Health care professionals have a wider range of actions available to them because of their roles as gatekeepers to antibiotics, experts in public debates, and trusted advisors to individual patients. But this also means that they have to bring two different perspectives to bear, their personal perspective and their professional perspective; and that they can be part of potentially different networks of solidarity (e.g. solidarity with other health care professionals in areas of the world where resistance is very prevalent).

It is important to note that activating solidarity in the context of antimicrobial resistance does not necessarily have to be based solely on the realisation that I and others share this particular similarity or vulnerability. Groups within which we feel and enact solidarity are often sustained by multiple, complexly intertwined perceived similarities (e.g. a national, regional or professional identity that engenders group solidarity is not just about one shared feature), and it may well be that the chance of successfully engendering 'antimicrobial solidarity' is much larger if it takes place within already existing networks of solidarity. Single similarity solidarity may in some instances be strong, but multi-similarity solidarity is often stronger, partly because it receives support from a multiplicity of motivating factors.

It is likely that the most important and effective kind of solidaristic identification and action in relation to antimicrobial resistance is if enough people stand up as and take responsibility for their own use of antibiotics. What are the necessary conditions for this kind of solidarity to be engendered and for it to spread within already existing networks of solidarity? The first necessary precondition is, as mentioned above the realisation that antimicrobial resistance is not only a problem for others, it is also a problem for me and for others like me. However, for this to result in more than a sentiment of solidarity or a solidarity based call or activism for others to do something, I also need to know that there is something I can do personally in relation to the use of antibiotics. Many people in the industrialised world have probably internalised three key messages about antibiotics during their own upbringing, and later as parents:

1. Don't ask for antibiotics unnecessarily, e.g. when there is no bacterial infection
2. Take the antibiotics if they are offered by the doctor
3. Take the full course of antibiotics that is prescribed

1. and 3. were traditionally backed up by the claim that this will help prevent the development of resistance, and 2. by the general idea that if a doctor offers a treatment option it must be good for you. However, 3. which has been a mainstay of antibiotic folk-knowledge for generations has now been repudiated by a group of scientist in a recent high profile paper where they claim that taking the full course actually promotes the development of resistance (Llewelyn et al. 2017).

So, what knowledge do people now need to have in order to be able to act effectively in this context? They should still not ask for antibiotics when they are not necessary, but the concept of 'not necessary' may have to be further explicated so that we all understand that many bacterial infections are self-limiting and therefore not in need of antibiotic treatment, and also that pursuing treatment even when it is technically effective may bring about bad consequences for others to which we stand in a relation of solidarity.

Let us briefly analyse a specific case study of antibiotic use through the lens of solidarity, i.e. the use of antibiotics in the treatment of acne (*Acne vulgaris*) in teenagers and adolescents. Acne is a common disease and moderate and severe acne can lead to permanent scarring of the skin, as well as social and psychological problems in those affected by the condition (Hassan et al. 2009; Kellett and Gawkrödger 1999; Murray and Rhodes 2005). Oral antibiotics have for decades been used when topical treatments have been tried but turn out not to be effective and before the prescription of systemic isotretinoin or other retinoic acid analogues, since the retinoic acid analogues have many and potentially severe side-effects (Nagler et al. 2016). There has, however been an increasing realisation that whilst this use of oral antibiotics is effective in many cases, it also leads to increasing antimicrobial resistance (Dreno et al. 2014; Sinnott et al. 2016). What implications do solidarity in terms of standing up with and as have for patients and doctors in this scenario? We will first focus on the patient-doctor encounter and then move on to the question of policy.

In the patient-doctor encounter the enactment of solidarity is a matter for personal and potentially shared decision-making. The doctor can and should advise the patient on the benefits and drawbacks of antibiotics and of other available treatments and the patient should make a decision based on an evaluation of how the different treatment options will affect his or her life and life plans. What solidarity brings to the table are two things, it provides the doctor with a license (and potential obligation) to appeal to the patients solidaristic motivations and it creates an obligation for the patient to consider the choice through the lens of solidarity and not merely as an individual decision. This does not mean that the patient has to refuse antibiotics, or that the doctor has not to mention them as one of the treatment options. Acne is not a trivial disease, the side-effects of other available treatments are significant, and it is only the patient who can judge whether the sacrifice of forgoing antibiotics is outweighed by the solidaristic public health benefits in terms of

reducing the development of antibiotic resistance. It is also important to note that the doctor's license to appeal to solidaristic motivations is not generated by the doctor's professional role but by the fact that he or she stands with the patient in a mutual relation of solidarity and that they both recognise this.

Things are more complicated at the policy level. The 'spontaneous' enactment of solidarity that we would wish to crystallise in policy arise in a situation where the doctor interpellates the patient as a person within a network of solidarity and encourages the patient to consider and enact solidarity in his or her decision-making, and where the patient enacts solidarity in a nuanced way by giving proper weight to the public health consequences of using antibiotics in his or her specific circumstances. This is tricky to implement as a policy and the main risks are that the doctor will be seen not as someone who stands with the patient and interpellates him or her in a network of solidarity, but as an agent of the state or the public health system, and that the patient will therefore not engage in solidaristic decision-making but perceive the situation as one where he or she is simply being asked or forced to sacrifice personal interests for some abstract conception of the public good. To avoid this problem the justification given for a policy, the way it is communicated to doctors and patients, and the way in which it is being implemented in health care will have to foreground solidarity considerations as the driving force behind the policy. A policy of simply banning the use of oral antibiotics for the treatment of acne is, for instance unlikely to sustain a solidarity based motivation for compliance.

Consideration of the implications of solidarity can also guide the choice of methods used to pursue public health goals in other areas. It has for instance been suggested in the literature that the active stigmatisation of the overweight and obese is an acceptable public health intervention, if there is evidence that it is effective (Callahan 2013); and there have been suggestions that targeted stigmatisation of farmers whose pigs carry multi-resistant bacteria is acceptable or perhaps even appropriate.⁴ But, if there are some obese people or some pig farmers within my circles of solidarity a choice of pursuing active stigmatisation to further public health goals becomes potentially problematic seen from the perspective of solidarity. These are people with whom I share important things and with whom I work on common projects and not people who should be harmed or ridiculed. And, given that standing up with or as them requires me to understand their lifeworld I may well come to understand why they act as they do. More generally considerations of solidarity enjoin us to choose supportive methods in our public health policies, and only resort to proscription when absolutely necessary.

⁴For a rejection of this view on other grounds than solidarity see Ploug et al. 2015.

21.4 Solidarity as a Motivational Factor

We have argued above that considerations of solidarity can be useful in the design of policies to minimise and delay antibiotic resistance. But, building on the case study we need to consider solidarity as a motivating factor for action in more detail. We do not want to become embroiled in the interminable discussion about whether moral considerations necessarily motivate, or whether they only motivate when combined with a suitable desire. And, working with a concept like solidarity we do not need to become embroiled in that debate because realising that one has an obligation derived from or in solidarity straddles the cognitive/affective divide. Being in a relation of solidarity with a group is not a purely cognitive matter, but also a matter of felt identification. You don't walk in the parade on the eighth of March, or participate in a 'Reclaim the Streets' action purely on the basis of a dispassionate, rational assessment of your ethical obligations. You do it because you identify with the cause and with the group pursuing the cause.

This motivating force of solidarity lead to and support individual solidaristic action, but it can also be an important factor in engendering support for policy change and maintaining support for policies once they are implemented. However, the mere fact that a policy builds on or crystallises an already existing, or a developing solidarity based practice does not automatically mean that the support will transfer from the practice to the new context where what was previously a freely chosen action is now prescribed and must be performed (or proscribed and no longer available).

In the design of policies we therefore need to be careful not to lose the connection to solidarity as a motivating factor. The policy in a sense has to continue to speak to people and call them out in the language of solidarity and interpellate them as active participants in networks of solidarity.

This has implication both for how policies should be designed and how they should be communicated. We need to understand which networks of solidarity the relevant groups of citizens are embedded within, and design policies that appeal to those already existing networks.

21.5 The Extent and Limitations of Solidarity

There are a number of possible criticisms of the line of argument which has been pursued above. Here we want to look at two of them which are especially relevant in the context of antibiotic resistance since it is a global problem that needs global solutions.

The first possible criticism is that because we develop solidarity as a group concept, there will be some individuals and groups that are outside the solidarity group, that are Other than the ones included in our solidarity and who will be disadvantaged by solidarity in the in-group. The second criticism is that it is implausible to

think that the solidarity of ordinary people could ever have a global scope (Holm 1993). Saints may aspire to global solidarity, but most of us restrict our solidarity to smaller and more local groups. Taken together these two criticisms imply that solidarity is an unsuitable, and perhaps even pernicious concept on which to base a solution to a global public health problem.

We take the second criticism to be empirically true. Few people manage to engender a state of ‘solidarity with the people of the world’⁵ in themselves (*pace* West-Oram and Buyx 2017). But perhaps that is not what is needed for solidarity to have global reach and be useful in supporting public health policies and initiatives. A global reach of local solidarity can come about in two ways. The simplest way is if local networks of solidarity are exhaustive in the sense that everyone is a member of at least one local network of solidarity, and if the results of solidarity in all, or perhaps just most of these networks contribute to a similar aim, i.e. in the present context the conservation of effective antibiotics through a reduction in the development of resistance. In this scenario a positive global outcome can be achieved by purely local action. Each local network of solidarity does not have to pursue an aim which is precisely identical to that of other networks. The second way in which local solidarity can have global reach is when we have local, but overlapping circles of solidarity that reach in an unbroken chain from people in the affluent north to people in the impoverished south. This may be sufficient to sustain the public health policies globally. In such a situation, persons may for instance accept policies restricting the use of antibiotics based on their solidarity with their fellow citizens in a particular country or region, but most of the people in that circle of solidarity which is defined by local citizenship will also be in other overlapping circles of solidarity based on other identifications like language, gender, profession etc. etc. Some of these overlapping circles may reach directly from the north to the south, there may for instance be solidarity among nurses or teachers or solidarity based on shared history. Others may be longer and involve more linking circles of solidarity but may never the less still be effective.

The first criticism also contains an element of truth, but it is perhaps not as damaging to the use of solidarity as it initially seems. It is undoubtedly true that there are some circles of solidarity that are partly constituted by identifying a particular group of others as ‘the enemy’, or as the radical Other. Communist solidarity among workers for instance posits the violent struggle between the working class and the capitalist class as an inevitable historical fact. However, not all forms of solidarity have to work in that way, and most do not. Danish identity and solidarity among Danes, for instance originally relied on distinguishing Danes from Swedes and Germans and seeing those two groups as enemies. But, although Swedes and Germans are still the Other and instantiate all of the traits that are non-Danish and therefore not-ours, they are no longer the enemy. So whereas solidarity almost inevitably expresses a form of partiality, which is partly what distinguishes it from thin

⁵ ‘Solidaritet med verdens folk’ is a common slogan in left wing politics in the Nordic countries

conceptualisations of justice or utility maximisation, it may be a perfectly benign type of partiality.⁶

21.6 Conclusion

In this paper we have argued for three main conclusions. First, that the concept of solidarity has an important role to play in analysing how individuals and groups can and should act in relation to the threat of antimicrobial resistances and that it is an important counterweight to pure self-interest. Second, that considerations of solidarity can help us to shape both the goals and the methods of public health policies in order to make them long-term socially sustainable. And, third by implication that given that solidarity is helpful when thinking through one thorny issue in public health ethics and policy, it is likely to be helpful in other areas of public health ethics as well and that it therefore warrants continued attention from the public health (ethics) community.

We have also analysed the problems in moving from a voluntary practice sustained by solidarity to an official policy crystallising that practice as prescriptions and proscriptions and shown that careful design and communication is necessary not to lose the motivating force of solidarity when formulating policy.

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⁶We will here assume without argument that any complete system of ethics for human agents must incorporate various types of partiality.

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