

Health Care Professionals and Bedbugs: An Ethical Analysis of a Resurgent Scourge

Maude Laliberté · Matthew Hunt ·
Bryn Williams-Jones · Debbie Ehrmann Feldman

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Abstract Many health care professionals (HCPs) are understandably reluctant to treat patients in environments infested with bedbugs, in part due to the risk of themselves becoming bedbug vectors to their own homes and workplaces. However, bedbugs are increasingly widespread in care settings, such as nursing homes, as well as in private homes visited by HCPs, leading to increased questions of how health care organizations and their staff ought to respond. This situation is associated with a range of ethical considerations including the duty of care, stigmatization, vulnerability, confidentiality, risks for third parties, and professional autonomy. In this article, we analyze these issues using a case study approach. We consider how patients whose living environments are infested with bedbugs can receive care in the community setting in a manner that supports their well-being, is consistent with

M. Laliberté (✉) · B. Williams-Jones
Programmes de bioéthique, Département de médecine sociale et préventive, Faculté de médecine,
Université de Montréal, C.P. 6128, succ. Centre-ville, Montreal, QC H3C 3J7, Canada
e-mail: maude.laliberte@umontreal.ca

M. Laliberté
École de réadaptation, Université de Montréal, Pavillon 7077 Avenue du Parc, Local 402-5 C.P.
6128, succ. Centre-Ville, Montreal, QC H3C 3J7, Canada

M. Hunt
Centre for Interdisciplinary Research in Rehabilitation, Hosmer House, Rm 205, 3630 Pr Sir
William Osler, Montreal, QC H3G 1Y5, Canada

M. Hunt
School of Physical and Occupational Therapy, McGill University, Hosmer House, Rm 205, 3630 Pr.
Sir William Osler, Montreal, QC H3G 1Y5, Canada

D. E. Feldman
Faculté de médecine, École de réadaptation, Université de Montréal, Pavillon 7077 du Parc, C.P.
6128, succ. Centre-ville, Montreal, QC H3C 3J7, Canada

fairness in care provision, and takes into account risks for HCPs and third parties. We also discuss limits and obstacles to the provision of care in these situations.

Keywords Health care professionals · Bedbugs · Equity · Disclosure · Duty of care · Confidentiality · Vulnerability

The Bedbug Phenomenon

Many health care professionals (HCPs) are understandably reluctant to treat patients in an environment infested with bedbugs due, in part, to the risk of themselves becoming bedbug vectors. However, bedbugs are increasingly widespread in care settings, such as nursing homes, as well as in private homes visited by HCPs, leading to questions about how health care organizations and their staff ought to respond. The evolution of bedbug infestations in many cities around the world suggests that this is a global epidemic, and one that is expanding rapidly (Perron et al. 2010; Levy Bencheton et al. 2011; Paul and Bates 2000; Anderson and Leffler 2008; Potter et al. 2010). While not a problem restricted to low-income populations (there have been infestations in major hotel chains in North America and Europe), it is the more vulnerable members of society—such as new immigrants, the poor, or the elderly—who most frequently suffer from the effects of bedbugs (Potter 2011; Potter et al. 2010). In this way, the distribution of the bedbug epidemic is associated with important social determinants of health, such as poverty, social status, and support networks (Eddy and Jones 2011a, b).

Bedbugs are insects that feed upon human blood. They disperse by walking or, indirectly, by the movement of infested objects (Perron et al. 2010; Wilson 2011; Jacobson et al. 2011). Bedbugs are often found in box springs and mattresses but can also live in wall cracks, carpets, upholstery or furniture (Perron et al. 2010; Wilson 2011; Jacobson et al. 2011). Bedbugs affect the quality of life of victims by causing both physical (e.g., skin lesions) and mental health problems (e.g., psychological distress, sleep disturbance, depression, anxiety) (Susser et al. 2012); bedbugs are not, however, known to be direct vectors of disease (Goddard and De Shazo 2009). In addition, there can be important negative social consequences associated with bedbug infestations, most notably stigmatization (the perception that people whose dwellings have been infested are unclean) and isolation (others may be afraid to interact for fear of also becoming a victim) (Perron et al. 2010; Jacobson et al. 2011; Eddy and Jones 2011a; Anderson and Leffler 2008). These social consequences can amplify the psychological impact of bedbug infestations for those individuals whose living environments are infested.

Bedbugs were a common and widespread public health problem through the first half of the twentieth century, but they were nearly eradicated around the time of the Second World War due to the use of the insecticide DDT. A resurgence was observed in North America in the late 1990s (Benac 2010; Haynes et al. 2010; Potter 2011), in part as a result of the 1972 DDT ban and the fact that bedbugs have become highly resistant to many other insecticides (Benac 2010; Romero et al. 2007). Today, eradicating bedbugs from a dwelling remains extremely difficult for

several reasons. First, bedbugs can withstand starvation for up to a year (Anderson and Leffler 2008; Paul and Bates 2000; Goddard and De Shazo 2009). Second, extermination methods are time consuming and costly, and include the use of often toxic insecticides, heat, steam, freezing or vacuuming (Benac 2010). Professional exterminators are effective but very expensive (Eddy and Jones 2011a; Masterson 2011), while lowcost do-it-yourself methods are often ineffective and may be hazardous to the health of residents (Jacobson et al. 2011; Potter et al. 2010). Unsurprisingly, the bedbug epidemic is particularly difficult to control in low-income communities (Eddy and Jones 2011a; CBC News 2012) where individuals have less access to costly extermination services and are more likely to acquire second-hand furniture or clothing (Potter 2011). As a result, bedbug infestations can exacerbate the vulnerability of already disadvantaged social groups with corresponding implications for social justice (Eddy and Jones 2011a, b).

In this article, we consider the ethical issues associated with the provision of health care services to home-care patients in the context of a growing bedbug epidemic. Although the examples provided specifically relate to the context of community-care, our analysis is also relevant to other settings of health care provision including hospitals and long term care centres. Clarifying these issues can, we suggest, help support HCPs and managers in making decisions regarding care delivery in settings affected by bedbugs that promote the provision of respectful, fair and safe care to their patients. Expanded reflection and discussion amongst HCPs about this issue can help minimize the stigmatization of already vulnerable social groups, contribute to the containment of the epidemic, and help mitigate the significant negative public health consequences.

Case Study (Part 1)

Adamo is an 80-year-old man with diabetes, severe cataracts and hypertension who lives in a seniors residence with individual apartments. Adamo was recently hospitalized after falling as he was getting out of the bath. He speaks Italian and has limited understanding of English. As a result of the fall, Adamo has a severe wound on his right foot that is healing slowly. Prior to Adamo's discharge from the hospital, the local community health centre received a referral to assess home safety, to take Adamo's blood pressure and to provide wound-care and dressing changes daily. During the initial visit, Rebecca, the homecare nurse, noticed that Adamo had multiple skin lesions. Rebecca observed something moving on the carpet, and on closer inspection she discovered that the apartment was infested with bedbugs. Adamo is sociable, loves to visit his friends in other apartments in the building, and enjoys receiving visitors (people from his church visit him regularly). He has his meals in the cafeteria downstairs where the chairs are covered in fabric. Once a week, Adamo goes to the barbershop. The spreading of the infestation both within and beyond the residence is thus highly probable. Rebecca is also worried that she might bring bedbugs into the dwellings of her other patients, as well as to her own home, if she has bedbugs on her clothes or on her bag, which she had placed on the floor by the front door. At the same time, Rebecca recognizes that her

visits are important for ensuring Adamo's safety and provision of appropriate wound care, and for helping to monitor his poorly controlled and elevated blood pressure.

Professional Duties and Bedbugs: Duty of Care and Risks to Self and Others

As bedbugs become more prevalent, increasing numbers of HCPs will be confronted with scenarios similar to the one experienced by Rebecca. These issues occur in home-care settings as well as in health care and social service institutions. Rebecca's concern, that she could become a bedbug vector, is likely to be shared by many HCPs in comparable circumstances. Clinicians are certainly at risk of unwittingly transporting bedbugs to the homes of other patients, to the institutions in which they work, and to their own homes. These anxieties related to spreading the bedbug infestation may, however, also contribute to inequities in health care delivery and even to social stigma or isolation for those affected if these individuals are excluded from receiving necessary care. While the bedbug epidemic differs in important respects from more severe infectious disease epidemics (particularly the degree of harm involved), the fears and questions that are engendered by bedbug infestations mirror those associated with many infectious diseases. During the early years of the HIV/AIDS epidemic, for example, HCPs questioned their obligation to treat patients due to safety concerns for themselves and those close to them (Freedman 1990; Sim and Purtilo 1991). Similar questions were raised more recently during the 2003 Severe Acute Respiratory Syndrome (SARS) crisis in Toronto and in anticipation of the 2009 influenza pandemic (Thompson et al. 2006; Sokol 2006, 2008; Draper et al. 2010). In each of these cases, concerns were raised relating to clinicians' duty of care for infected patients and the possibility of refusing to provide care due to risk of harm to themselves or to their families.

The codes of ethics of physical and occupational therapists, physicians, nurses, and many other HCPs contain only minimal norms regarding the parameters of appropriate service provision. These codes generally state that HCPs should not, except for reasonable cause, terminate or refuse to provide professional services to a patient (Canadian Nurses' Association 2008; Canadian Medical Association 2004). Unfortunately, such statements do not provide clear guidance for what would constitute appropriate and ethical professional conduct in the present case. There is currently a dearth of policies or guidelines that provide clear guidance for how HCPs should respond to the bedbug epidemic in Canada and the US (Wilson 2011; Eddy and Jones 2011a; Leininger-Hogan 2011). However, HCPs' individual and collective behaviours in the face of increasing bedbug prevalence have significant social consequences, and much is at stake for individual patients and others in the communities where they live.

Professional codes of ethics require HCPs to ensure that their patients receive necessary and appropriate care. However, duty of care is not absolute or without limit, and is context-dependant (Sokol 2006). Rebecca could invoke the risk of spreading a bedbug infestation as a justification for not treating Adamo, as she has a professional responsibility to promote public health and protect her community

from harm. In this light, Rebecca has a responsibility to take reasonable steps to avoid becoming a bedbug vector. She also has a moral responsibility to protect herself and her family from this infestation. In situations where providing care may result in a significant or undue degree of sacrifice for the HCP, providing care may thus be considered supererogatory, that is, permissible but not obligatory because it is above and beyond the call of duty (Sokol 2008).

In the case of bedbugs, the risks are limited to direct contact between the bedbug and personal belongings (bags, clothing, etc.), and are not life-threatening. Given the degree of risk—and potential sacrifice—involved, the threshold of supererogatory action is arguably not reached. Thus, Rebecca has the responsibility to provide care to Adamo; but she should take steps to proactively manage related risks (and be supported in doing so by her employer) using available preventive measures so as to avoid exacerbating the infestation. In an infested home, HCPs are advised to limit the number of personal items they bring in, to wear protective clothing and to avoid direct contact with fabric furniture (Wilson 2011). Work schedules could also be altered to minimize risks for other patients, such as organizing Rebecca's caseload so that Adamo is the last patient of the day. Such an arrangement would provide Rebecca time to change in and out of her protective clothing prior to leaving Adamo's apartment, thus also protecting his privacy. But Rebecca would also need to explain to Adamo the necessity of these steps, both to protect his privacy as well as her own family, colleagues and other patients.

Such preventive measures are clearly warranted, even if they might be less time-efficient and thus more costly for Rebecca's employer. Yet, though risks may be managed through a range of strategies, it is possible that Rebecca may still transport bedbugs into her own home or those of other patients. In such a case, a responsible employer would give Rebecca paid leave and also treat the infestation in her home, and those of any other affected patients (e.g., by sending in an exterminator and covering the costs). In carrying out her professional duty and caring for her patient, Rebecca ought not to be asked to assume the costs if she becomes affected herself, when she has taken all appropriate means to protect herself and her patients.

Due to HCPs' obligation to provide appropriate care to patients, including to people living with an infestation of bedbugs, the responsibility should be placed on individual HCPs to provide compelling justifications—to their employer, to their colleagues and to their patient—for a decision *not* to treat or care for a patient, prior to enacting such a decision. As HCPs have privileged access to knowledge and resources that can mitigate to a large extent their own personal risks, they should prioritise the interests of their patients before their own in all but the most extreme cases. In an extreme case where it is impossible to implement appropriate protective measures, professionals should first evaluate and discuss all reasonable alternative methods to prevent transmission of the infestation, prior to taking a decision not to treat a patient in need. Without such transparent justification, HCP choices could exacerbate existing social inequities and contribute to further undermining clinician–patient trust. For example, as was the case during the early years of the HIV/AIDS epidemic (Sim and Purtilo 1991), patients whose homes are identified as infested with bedbugs could receive low priority on waiting lists, be prematurely discharged by the treating team, or be categorically rejected by some private or

public clinics or care facilities, all justified by the argument of protecting public health. Similarly, anecdotal evidence suggests that some patients with bedbug infestations in their homes have been left on wait lists when they would otherwise be next in line to receive a service due to HCPs' concerns regarding bedbugs. As a result, those individuals most at risk of this infestation—that is, vulnerable groups such as recent immigrants, people with low income, the elderly or the homeless (Eddy and Jones 2011b; Leininger-Hogan 2011)—are more likely to be denied care or will not receive it in a timely fashion, thereby reinforcing social inequalities.

A systematic refusal to provide care to a defined category of patients, such as those living with bedbug infestations, conveys a message to society that it is legitimate to discriminate against and further marginalise these groups. HCPs have a responsibility to support and uphold the welfare of their patients, and consequently, they ought to honour their duty to treat patients suffering from bedbug infestations—while taking appropriate preventive measures—and so ensure access to needed health services. While discrimination against vulnerable patients threatens their individual health, systemic stigmatization can threaten public health by contributing to the spread of the epidemic. People struggling with an infestation of bedbugs may feel ashamed and be socially isolated, and so may be reluctant to reveal to HCPs that their dwelling is infested. Not only will the ability of these people to access needed health care services be impeded, discrimination and stigmatization in public or private health care settings will likely result in delayed risk management interventions and so allow bedbugs to continue to spread (Wilson 2011).

Case Study (Part 2)

In order to respond effectively to the bedbug infestation in Adamo's apartment, the administration of the residence would need to be made aware of the situation so that exterminators can be called in to treat both Adamo's apartment and other areas of the building. When she raises this possibility, Adamo informs Rebecca that he has no intention of telling anyone about the bedbugs in his apartment. He further insists that Rebecca should not reveal this information to anyone else. As a result of his refusal to disclose the situation, Rebecca feels uncertain about what to do. She feels pulled between her professional duties to (1) respect Adamo's autonomous decision and right to privacy, and (2) minimize harm for Adamo and others in the community.

Protecting Public Health While Respecting Patient Autonomy

Adamo's refusal to inform the building administration may be due to a fear of the social stigma associated with a bedbug infestation and the possibility that this could lead to rejection by his neighbours and community. He may also worry that such a revelation to the residence administration could lead to the loss of his apartment, a possible consequence that would be unbearable. Should Rebecca respect Adamo's decision not to disclose the information, or should she breach his confidentiality in

order to protect public health? Respect for patient autonomy is a key facet of the therapeutic alliance between HCPs and patients. Revealing information to a third party without the patient's consent represents a significant threat to the therapeutic alliance and so could lead to greater harm over time. Legislation and professional codes of ethics direct HCPs to respect patient autonomy and to keep patient information confidential, unless there are compelling, legally-sanctioned reasons to disclose to third parties.

The duty of HCPs to inform a legitimate third party (e.g., administrations or public health authorities) may sometimes override the obligation to respect a patient's autonomous decision not to disclose; the most obvious examples are 'notifiable diseases' associated with multi-drug resistant bacteria or nosocomial infections, where HCPs are required to report information about infected patients to public health authorities as part of epidemic control (McKibben et al. 2006; Upshur 2002; Childress et al. 2002). In some jurisdictions, there may be a responsibility to indicate to authorities the presence of bedbugs in a location (district, neighbourhood, street), but without identifying the specific address or names of the occupants.

Rebecca has professional responsibilities that also extend to the health and well-being of other members of her community—i.e., other residents in the care facility, other patients, colleagues and her own family members (Sokol 2011). Contributing to the epidemic by becoming a vector of transmission means that Rebecca cannot fulfill her duties towards society, her patients, and her family (Edwards et al. 2011; Canadian Nurses' Association 2008; Canadian Medical Association 2004). Rebecca has a responsibility to promote her patients' individual health, and the bedbug infestation puts Adamo (and by extension, other patients) at direct risk of physical and mental health problems that could increase his (and their) vulnerability. Without Rebecca's support, Adamo might decide to try to manage the problem on his own with a do-it-yourself extermination product that could have hazardous health effects for both himself and the other residents, especially given Adamo's limited abilities to communicate in English (Potter et al. 2010).

HCPs are, by and large, deeply committed to helping support their patients' well-being and to help them avoid decisions or actions that result in harm to themselves or others. This goal can, however, often be accomplished without the disclosure of confidential patient information. Typically, breach of confidentiality is justified when there is a clear, imminent and significant risk of harm to identifiable third parties that cannot otherwise be managed without disclosure of confidential information. It is not clear that bedbug infestation could reach this threshold.

A primary consideration should be an assessment of the patient's ability to manage the bedbug infestation by himself; but it is also important to consider the context and implications for other people. The proximity of neighbours, for example, could influence the decision-making process of how to approach the issue since the risk is higher for the spread of bedbugs in an urban seniors residence than in a house in a rural setting. Attention to such particular circumstances can help HCPs to determine what their responsibilities are and the level of intervention necessary to help the patient to take the most appropriate action (Upshur 2002).

As mentioned above, Rebecca should ensure that all other effective measures have been tried and/or implemented to manage the problem. This could take the

form of education, support and guidance for Adamo regarding possible extermination options. Specifically, Rebecca could start by trying to persuade Adamo to disclose the information to the administrator, and even offering to help him in the process. In the event that this fails, Rebecca could refer Adamo to a social worker who might have more expertise in dealing with such situations. Rebecca might also encourage Adamo to seek support from his church community or friends to avoid any possible sense of isolation. If Adamo does agree to disclose the information, Rebecca or a colleague could accompany Adamo and help convey the importance of managing the situation in a way that minimizes the possibility of stigmatization.

As in the analysis of Part 1 of the case study, a transparent and inclusive decision-making process is essential to create space for dialogue regarding the patient's and other stakeholders' (HCP, residence administration) concerns, in order to reach agreement on the most appropriate intervention. This process will likely require that compromises be made in order to avoid a complete rupture of the therapeutic alliance due to a breach of trust, or professional or legal sanctions that could arise from breaching confidentiality.

Bedbugs in a Community: Who is Responsible?

Bedbugs are difficult to exterminate, spread rapidly and are likely to become more problematic due to increased access to national and international travel, urban concentration, immigration, and insecticide resistance. In such a context, it should be clear that no one actor can be fully responsible for or able to manage the epidemic; responsibility must be shared by all stakeholders involved, including: patients/citizens, HCPs, public health authorities and local governments.

Lack of societal awareness and precaution is contributing to the spread of the epidemic (Potter et al. 2010). Education about effective bedbug management strategies with property owners, municipalities and the general public is key to effectively controlling the epidemic. Public health officials have a crucial role to play in educating the public about non-chemical methods to fight bedbugs (e.g., thermal control), ways to prevent infestation such as avoiding the purchase of used mattresses or inappropriately disposing of infested objects, and prudent use of effective insecticides (Jacobson et al. 2011; Perron et al. 2010; Masterson 2011; Hurst and Humphreys 2011; Benac 2010). It is imperative that citizens implement reasonable preventive measures to protect themselves, their families and the broader community. Further, HCPs who provide homecare should learn how to identify and respond to these infestations (Wilson 2011; Hurst and Humphreys 2011), and ensure that their patients—when necessary—have access to information about and services for dealing with bedbug infestations.

In addition, health care agencies and institutions should develop clear policies regarding HCPs' responsibilities regarding bedbug infestations, both in homecare and clinical settings. Such policies should address issues related to duty to care, respect for confidentiality, and disclosure to public health authorities. In particular, they must ensure that patients receive the care to which they are entitled, that HCPs apply appropriate protective measures proactively to avoid spreading the infestation

in the community, and that they provide guidance for their patients in eradicating bedbugs from their homes, either themselves with institutional support or through an institutional resource, such as a specific intervention team.

Broader social strategies are also needed to help control the bedbug epidemic, protect vulnerable populations and decrease social inequities related to health, without leading to further stigmatization. Municipalities, through housing authorities or public health departments, can play an important role in managing the bedbug infestation, but they need to be willing and able to intervene through effective public policies, human and financial resources, and ethical guidelines.

Municipalities could start by creating a fund to help cover extermination costs in order to relieve some of the financial burden placed on the most vulnerable segments of the population who are suffering from an infestation. Municipalities could also intervene more forcefully by sending in exterminators, and either assuming the costs, monetary fines or other sanctions for building owners who systematically refuse to respond to severe and chronic bedbug infestation would be another possible mechanism to combat the bedbug epidemic (CBC News 2009, 2010). Changes to municipal by-laws to allow for the expropriation of buildings run by non-cooperative building owners (“slum-lords”) would be another important tool to combat the bedbug epidemic.

In collaboration with local public health departments, municipalities could create a central registry of bedbug cases to help follow the epidemic’s spread and help refine the public health policies in place. Yet, because disclosure to relevant authorized third parties (e.g., public health officials) can only be ethically and legally justified in order to prevent severe harm or risk to the community, education and dialogue with key actors will invariably be the most appropriate intervention. In order to collect information about infestations without breaching confidentiality, mechanisms would need to be implemented to ensure that personal information was anonymized, e.g., by only submitting the location (street, building, institution) and not the name of the resident; and even in this situation, the registry would have to ensure strong data protection (as is commonly the case with personal medical information) in order to prevent further stigmatization of already vulnerable groups and individuals.

Finally, there is a need for research to improve insecticides’ safety and efficiency, and to find optimal treatments for health related problems associated with bedbugs, such as cutaneous reactions (Goddard and De Shazo 2009; Hurst and Humphreys 2011; Haynes et al. 2010).

Conclusion

HCPs should provide treatment to patients affected by a bedbug infestation while taking all reasonable steps necessary to minimize the chance of becoming a bedbug vector, even if there are some residual risks for HCPs, their families, and other patients. Where possible, services and treatments should be provided in an environment and organizational structure that is designed to minimize the risks of bedbug transmission. Practice guidelines and health policies should be established to better define how HCPs should respond with regards to risks to third parties and

HCPs' duty to treat patients whose homes are infested by bedbugs. The duty to treat is both an individual ethical obligation of HCPs and a social responsibility. Treating patients with dignity and according to their medical needs is a central concern of HCPs, so it is essential to educate HCPs regarding the issue of bedbugs in order to prevent practices that would stigmatize vulnerable subgroups. Such awareness will enable HCPs to provide appropriate and ethical care to their patients in a manner consistent with duties of respect for patient autonomy and equity in access to care, while also protecting themselves, their families and the broader society from the negative social and public health consequences of the bedbug scourge.

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