

1 Achieving the Human Right to Sanitation? Container based sanitation 2 and intersectional vulnerabilities in a South African informal 3 settlement

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5 Mmeli Dube^a, Fiona Anciano^a, Alesia D. Ofori^b, Lindokuhle Mabaso^a, Dani J. Barrington^{c*}

6 a) Politics and Urban Governance Research Group, Department of Political Studies, University
7 of the Western Cape, South Africa.

8 b) Cranfield Water Science Institute, Faculty of Engineering and Applied Sciences, Cranfield
9 University

10 c) School of Population and Global Health, The University of Western Australia

11 *Corresponding author

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23 Corresponding author

24 35 Stirling Highway, Crawley, 6009, Western Australia, Australia

25 dani.barrington@uwa.edu.au

1

2 Abstract

3 Container based sanitation (CBS) is marketed as an innovative ‘improved’ service with potential to
4 provide ‘safely managed’ sanitation for people living in low resource settings. Yet little research has
5 investigated this claim regarding the most marginalised individuals within these populations, many of
6 whom experience myriad intersectional vulnerabilities.

7 This paper examines and compares whether household CBS and shared sanitation users in a South
8 African informal settlement are able to realise their Human Right to Sanitation (HRtS). Thirteen
9 residents of BM Section, Cape Town, were purposively selected to understand how sanitation services,
10 age, gender, (dis)ability, income and personal shocks shape experiences. Data was collected using
11 Photovoice and analysed using Winkler’s interpretation of the normative contents of the HRtS and
12 Crenshaw’s theory of intersectionality.

13 The adoption of household CBS and its ability to function as a private, dignified, safe (hygienic and
14 physical) form of sanitation depends on users’ capacity to adapt it to overcome the technology’s
15 limitations. Users with limited or no capacity to adapt CBS face limitations in accessing sanitation
16 safely, privately and with dignity. This in turn, worsens disparities in sanitation outcomes among
17 vulnerable CBS users, underscoring that technical provision alone is insufficient to realise the HRtS.
18 Shared sanitation remains functionally limited or unsafe for many. When the HRtS and
19 intersectionality are considered, household CBS may have the potential to be ‘safely managed’ in
20 theory, but in reality, barely meets the needs of the most vulnerable users.

21

22 **Key words:** Sanitation, Human Right, Intersectional vulnerabilities, Portable Flush Toilets, Cape Town.

23

1. Introduction

1.1 The Human Right to Sanitation and urban informal settlements

The rapid growth of cities, mainly in the Global South, has seen the demand for services like sanitation far outstrip cities' capacities to provide them (1). 3.5 billion people lack access to safely managed sanitation globally, and more than half reside in ever-expanding urban areas (2). The growth of informal settlements poses a challenge for many cities, especially in sub-Saharan Africa, where over 60% of urban dwellers reside in areas without the infrastructure to provide sanitation services (3), (2019). Millions of informal settlement dwellers thus cannot access sanitation services that provide privacy, dignity and safety.

Largely due to the technical and land tenure complexities affecting the provision of sewerage sanitation, the growth of informal settlements has necessitated innovative forms of non-sewered (also known as on-site) sanitation. In 2024, approximately equal proportions of the global population were served by on-site sanitation (septic tanks, improved latrines, and other systems – 47%) as sewerage sanitation (42%) (2). Given the projected rates of urbanisation and growth of informal settlements in middle and low-income countries, it is likely that the use of non-sewered sanitation will increase.

In 2015, the United Nations (UN) declared sanitation to be a standalone human right, although many institutions and states already considered it part of the right to a standard of living adequate for health and well-being (4). Also in 2015, Winkler (5) framed the normative contents of the Human Right to Sanitation (HRtS) as meaning that sanitation must be 1. *available* in or near households and in public spaces; 2. *physically accessible*, including for vulnerable groups; 3. *affordable* to everyone; 4. *technically and hygienically safe*, which includes toilets being easy to clean and effectively preventing human and animal contact with human excreta and 5. *culturally and socially acceptable* to users. Design, positioning and conditions for use must therefore be tailored to the differing perspectives of individuals and societies.

1 In South Africa, local authorities, such as the City of Cape Town (CoCT), are obligated to provide free
2 sanitation to poor and vulnerable households (6). This distinguishes South Africa from other countries,
3 where informal settlement residents are practically responsible for their own sanitation (it may come
4 under the jurisdiction of various levels of government, but is not necessarily implemented) (7). In Cape
5 Town, South Africa, approximately 12 % of the city's households are in informal settlements, and CoCT
6 provides sanitation services to nearly all these communities (8). 36 % of households in informal
7 settlements use shared sewer toilets, while the rest use various forms of shared and unshared non-
8 sewerer sanitation (9).

9 1.2 Container based sanitation

10 Container based sanitation (CBS) is a form of “non-sewered sanitation strategy, through which excreta
11 is captured in sealable containers and transported to semi-centralised facilities for treatment” (10).
12 The technology ranges from very small, portable toilets (similar to commercial camping toilets) to
13 larger portable toilets that can be moved by vehicles (similar to those used at music festivals) to semi-
14 permanent toilet blocks (similar to composting toilets found in national parks) (11). Container based
15 sanitation is often praised for its coverage of the entire sanitation chain (containment, emptying,
16 transport and treatment), creation of employment, efficiency in water scarce areas, prevention of
17 water borne diseases, and being part of Citywide Inclusive Sanitation (CWIS) (12). The World Health
18 Organisation (WHO) and UNICEF's Joint Monitoring Programme (JMP) consider CBS as ‘improved
19 sanitation’, which can be classified as ‘safely managed’ when appropriately serviced. Container based
20 sanitation has become one of the options for improving access to sanitation in contexts where sewers
21 are limited (13).

22 Experts, advocates, scholars and practitioners often present CBS as a form of sanitation “uniquely
23 suited to provide sanitation access in rapidly urbanizing informal settlements” which can “serve as
24 either a transitional or long-term solution for urban households” (10). The meanings of ‘transitional’
25 or ‘long term’, however, have become a subject of intense debate. Some question the framing of CBS

1 as a permanent solution, suggesting it is only “an effective and valuable interim solution to a problem
2 occurring within a context in which communities are...fighting for infrastructure provision from the
3 state” (14). Container based sanitation, often presented to residents and the general public as a
4 temporary form of sanitation, tends, however, to become a solution for indefinite periods, becoming
5 permanent by default in some informal settlements (15,16).

6 The Container Based Sanitation Alliance (CBSA), a consortium of CBS organisations and an advocate
7 for the use of CBS, describe it as an inclusive form of sanitation that can reach users who cannot be
8 serviced through sewer systems (11,17). The CBSA also describes CBS as hygienically safe, as the
9 toilets can be sealed and prevent spills of human waste, increasing “accessibility for those with
10 physical disabilities, the elderly and young children” and “provide(ing) women and girls with a private,
11 safe space to use the toilet and manage menstruation and pregnancy” (11). Others argue that CBS is
12 space-efficient for informal settlements (18), although this has been called into question in cities such
13 as Cape Town, where portable flush toilets (PFTs, CBS technologies that resemble camping toilets;
14 PFTs consist of a toilet seat and two detachable storage tanks (cartridges) used in rotation) produce
15 foul smells, and the ensuing perceived lack of hygiene associated with CBS means that they are often
16 not kept inside users’ shacks (15).

17 Container based sanitation systems exist within complicated and tumultuous socio-political
18 environments. The introduction of CBS into informal settlements articulates different configurations
19 of power as it inserts itself into the process of urban change, potentially subjugating and affecting the
20 everyday lives of informal residents. Container based sanitation introduces new sanitation labour and
21 production processes, actors, subjects, and networks connecting them; and new means of knowing
22 and accessing sanitation (19). In addition, sanitation innovations such as CBS, with the quest to ‘pacify’
23 unhygienic informal spaces, amplify socio-political contestations through continuous negotiation and
24 bargaining of the hybrid (mixture of old and new; formal and informal) spaces that these innovations
25 create. Container based sanitation then becomes an integral part of the fluid landscape of sanitation
26 and informality upon which the messy interactions between strategies of capital accumulation, politics

1 of space and the relational strategies of political actors come alive (20,21). Hence, it is essential to
2 examine the underlying processes, structures and agencies that shape people's everyday experiential
3 use of CBS toilets in informal settlements.

4 **1.3 Intersectional vulnerabilities and sanitation**

5 The achievement of the HRTS aligns with Sustainable Development Goal (SDGs, Target 6.2), and
6 although the SDGs apply to everyone, the sanitation Target emphasises “paying special attention to
7 the needs of women and girls and those in vulnerable situations” (WHO/UNICEF 2015, 4). Millions of
8 urban dwellers in informal settlements, with limited financial resources, endemic poverty, inequality
9 and other challenges, are vulnerable to various forms of everyday risks and catastrophic events (22).
10 Many informal settlement dwellers are vulnerable, i.e., susceptible to harm and have the propensity
11 to suffer adverse effects when impacted by a hazard (23). Their vulnerabilities are related to rapid
12 urbanisation and informality (22,24). However, a broad categorisation of all informal settlement
13 residents as ‘vulnerable’ risks overlooking the differences within the group that shape individual and
14 household-level experiences.

15 Some CBS proponents see the service as meeting the needs of vulnerable groups, for instance, women
16 and girls, children, and users with physical difficulties. However, inequalities in sanitation access can
17 occur on an intrahousehold level as much as on a societal scale (25). Thus, considering “certain groups
18 or populations as vulnerable” does not “address persons with multiple vulnerabilities” and “fails to
19 account for variation in the degree of vulnerability within the group, based on individual
20 characteristics” (26). Approaching social differences from a single dimension also often misses the
21 differences in groups’ access to power, leading to inequality and disparity (27). Thus, some
22 recommend using the intersectional perspective to analyse how combinations of multiple forms of
23 vulnerability shape experiences (25,27,28).

24 The term intersectionality was coined by Crenshaw (29), emerging out of critical race studies, to
25 unpack the irreducibility of multiple social identities and to, for instance, make visible how race and

1 gender studies ignored violence against women of colour, thereby bringing attention to inter-defining
2 forms of identity that had been ignored by previous scholarship. Intersectionality attempts to develop
3 an extensive theory that can analyse the complex interrelations between multiple forms of power and
4 interrogate how social identities conflate and converge within a specific space and time. It emphasises
5 the specificity of the everyday experiences that are shaped by these interactions (30) by arguing that
6 the discourse and oppressive practices around social divisions such as race, gender, class, disabilities
7 and sexuality are mutually constitutive of each other (29). When using intersectionality, no single axis,
8 category, or characteristic is given primacy, but inequalities are understood to be interwoven
9 throughout society at all levels. Kuran (28) argues that “the qualitative use of intersectionality still
10 homogenises people, [however,] it does so in a more fine-grained way and can be said to represent
11 more adequately societal processes and hierarchies” (p. 1).

12 1.4 This study

13 This paper uses intersectionality theory to explore how the myriad vulnerabilities of residents of an
14 informal settlement interact to impact on their realisation of the HRtS. It investigates residents'
15 experiences of CBS and other sanitation types in BM Section, an informal settlement in Khayelitsha,
16 Cape Town, South Africa. The paper assesses whether household CBS or shared sanitation is *available*,
17 *accessible*, *affordable*, *safe* and *acceptable* to vulnerable residents of BM Section and enables them to
18 realise the HRtS. It also considers how their intersecting vulnerabilities impact their attainment of this
19 right. It concludes with a discussion comparing how vulnerable residents of BM Section using the two
20 forms of sanitation realise, or attempt to realise, this right.

21

1 2. Methodology

2 2.1 Study site

3 This paper focuses on BM Section, an informal settlement in Khayelitsha. BM Section is densely
4 populated with around 14 000 residents on 32.42 hectares of land owned by CoCT (15). The site was
5 chosen due to the pervasive intersectional vulnerabilities present in the settlement; e.g., residents do
6 not own the land they live on, live in overcrowded and precarious conditions, and face high levels of
7 unemployment. The state provides sanitation in BM Section, consisting of a variety of shared services
8 and some household CBS services in the form of portable flush toilets (PFTs, often referred to by users
9 as pota-pota).

10 2.2 Research approach

11 The researchers employed a participatory qualitative approach, specifically, the Photovoice (PV)
12 methodology, to understand how the intersectional vulnerabilities of users of household CBS and
13 users of shared sanitation impact their realisation of the HRTS. During a Photovoice study participants
14 take photographs to document their lived experience of certain phenomena, and researchers then
15 use the photographs as probes during in-depth interviews (31,32). Photovoice is widely thought to
16 deepen researchers' understanding of lived experiences (33,34) and can also contribute to
17 empowering participants and advocating for change, particularly through public exhibitions of the
18 photographs (35). Photovoice has been used by several researchers working in the field of sanitation
19 (e.g., 35,36), as photographs can be a useful prompt for encouraging the discussion of sensitive topics.

20 2.3 Recruitment

21 Poor sanitation is known to disproportionately impact the most vulnerable within communities (13),
22 and these individuals are often excluded from research as they are the hardest to reach and engage
23 (37). Participants for this research were recruited via residents of BM Section who were already
24 participating in a large research project focusing on scaling off-grid sanitation, which the researchers

1 were involved in (38). Through their experience interacting with these residents informally and during
 2 interviews, and regularly visiting the community, the researchers were able to identify the
 3 vulnerabilities which contributed significantly to poor sanitation experiences (being a woman, having
 4 a physical disability, having low income or experiencing shocks (e.g., flooding, fire)) and the individuals
 5 who were most affected (these were often not existing research participants, but family members or
 6 neighbours who were recruited specifically for this sub-study). Thirteen participants were recruited
 7 within the period 16 January 2023 to 19 February 2023 along the axes of gender, (dis)ability, income
 8 and shocks, with approximately half using household CBS and the others shared sanitation (Table 1).
 9 The researchers were not attempting to collect a representative sample of lived sanitation experiences
 10 but were interested in understanding the lived experiences of individuals with a range of intersecting
 11 vulnerabilities. The vulnerabilities considered in the recruitment of participants were merely
 12 indicative, not exhaustive; researchers probed the participants during interviews to see how
 13 vulnerabilities beyond those identified in advance affected their experiences of sanitation.

14

15 *Table 1: Sample profile*

Type of user	Age	Gender	Vulnerabilities (identified during recruitment, pre-data collection)
Household CBS	60+	Woman	Widowed, disability (visually impaired)
	37	Woman	Unemployed, affected by k fire outbreak in 2022
	37	Man	Disability (mobility, balance)
	27	Woman	Shock (affected by floods in 2022), unemployed
	20	Men	Disability (self-care, vision)
	47	Woman	Disability (mobility), care responsibilities
	44	Man	No stable income (casually employed)
Shared sanitation	51	Woman	No formal source of income, dependant on social grant.
	22	Woman	Young woman, student, no formal source of income

	33	Woman	Unemployed, with care responsibilities
	45	Man	Unemployed, with care responsibilities
	42	Woman	Woman, unemployed, household of more than 6
	43	Woman	Woman, unemployed, cares for disabled mother

1

2 2.4 Data collection

3 Participants were given disposable cameras (Kodak 35mm One-Time-Use, Disposable Camera (ISO-
4 800) with Flash - 27+12 Exposures) and trained in basic photography. Researchers then extensively
5 explained and discussed the purpose of the project and research questions with the participants.
6 Photovoice has ethical implications as it raises concerns about privacy, protection of identity, and the
7 use of personal information for the researchers and the participants involved in the collection of data
8 (39). Thus, the participants were also trained in photography ethics to ensure that they respected
9 other people's privacy, obtained consent where necessary and produced valid photos that could be
10 used in the research. Participants were then given three days to take as many photos as they wanted
11 that showed their experiences and observations about sanitation in BM Section. The brief was
12 reasonably broad; participants could focus on any aspect of their daily lives that they believed related
13 to sanitation. The only limit was the size of the film (27 photos).

14 After the three days, participants submitted the cameras to the researchers, who processed the film
15 and printed the photographs. Participants then selected between five and eight photographs that they
16 believed best represented their sanitation situation and captioned each of these, describing what they
17 intended the photo to capture. The researchers then conducted in-depth interviews with each
18 participant based on the captioned photographs. Interviewers sought to understand why the
19 participant took each photo, how they felt it portrayed their experiences regarding their
20 vulnerabilities, who was affected the most by what the photo showed, why and how they were

1 affected, and what the photo did not show but was also important regarding their sanitation
2 experiences.

3 2.5 Data analysis

4 The photographs, participants' captions, and the interview transcripts were analysed thematically
5 based on how their lived experience of sanitation met (or not) the five normative aspects of the HRtS;
6 *availability, accessibility, affordability, safety and acceptability*. Intersectionality theory was then
7 applied to understand how participants' vulnerabilities intersected in their attempts to realise the
8 right to sanitation. Photovoice data was also triangulated with data collected through Political
9 Economy Analysis (PEA) interviews and document analysis in other parts of the project (15,40).

10 Although not discussed within this paper, the captioned photographs were presented by participants
11 in a public exhibition and as a photo essay shared with public officials.

12 2.6 Ethics

13 Ethical clearance was obtained from the University of the Western Cape's HSSREC (HS20/8/1). Key
14 considerations included privacy, identity protection, and the use of personal information for both
15 researchers and participants (41). Researchers noted that visual data is harder to anonymize than
16 textual data (42). To address this, PV participants were trained in photography and ethical issues
17 concerning privacy and confidentiality. Informed consent was secured twice: during recruitment and
18 training, and again immediately prior to photo elicitation interviews. Additional care was taken to
19 respect the sensitivity of the subject matter and ensure participant privacy. Researchers used sensitive
20 and appropriate language, avoiding terms perceived as rude or intrusive. Scientific jargon was
21 replaced with locally relevant phrasing. The data was anonymized, securely stored, and accessed only
22 by the research team, with no information shared that could reveal participants' identities or
23 locations.

24

3. Results and Discussion

1
2 This section gives an overview of the sanitation services within BM Section, then illustrates the lived
3 sanitation experiences of some BM residents who use shared sanitation (Box 1) and household CBS
4 (Box 2) through vignettes (pseudonyms have been used). These experiences are then discussed with
5 regards the impacts of their intersectional vulnerabilities on their ability to achieve the five normative
6 elements of the HRtS: *availability, accessibility, affordability, safety* and *acceptability* (5). The
7 discussion of each set of vignettes is followed by a discussion on the extent to which each of the
8 sanitation types enables or constrains the users' achievement of this right. The vignettes presented in
9 this section portray the main experiences of the participants. However, while they illustrate key
10 themes, they do not capture the full range of experiences. The analysis, therefore, also draws on
11 additional data beyond the vignettes, where necessary, to include the broad patterns in the findings.

3.1 Shared sanitation

12
13 Shared sanitation in BM Section includes some container and chemical toilets (both forms of CBS) and
14 full flush (sewered) toilets, located at varying distances from users' households (from a few metres to
15 hundreds of metres). The shared CBS systems have lockable cubicles and are emptied and cleaned
16 three times a week by private companies hired by CoCT, either by the removal of containment tanks,
17 in the case of container toilets, or by a vacuum truck for chemical toilets. The same companies also
18 maintain them. There are also two types of sewer-connected full flush toilets, both cleaned and
19 maintained by CoCT. One type is a single, standalone toilet with a lockable concrete cubicle. Other full
20 flush toilets are provided for the public in an ablution block. The shared CBS and standalone full-flush
21 toilets are notionally (when allocated by CoCT) shared among five households, however, this research
22 has observed that this often changes over time, such that some residents have essentially no access
23 to toilets and more than five households rely on each toilet in the public ablution block. All types are
24 accessed at no direct cost to users.

1 Many participants who use shared sanitation highlighted several challenges, including the long
2 distance of toilets from their homes, which exposes them to various risks, including robbery and sexual
3 assault. Additionally, the shared toilets are usually in a state of disrepair and malfunction, making
4 them hygienically unsafe and providing limited privacy. Other challenges, such as poor street lighting
5 at night and flooding, make navigating the way to shared toilets difficult. The vignettes in Box 1
6 illustrate the experiences of several participants and how their various intersecting vulnerabilities
7 shape those experiences.

8 **Box 1: Vignettes of selected shared sanitation users**

9 **1 - Keli**

10 Keli is a middle-aged, unemployed stay-at-home mother and a community leader, involved in the street
11 committee, and pointed out that she spends a lot of time in the community. She uses a chemical toilet, which is
12 about 100m away from her home (Figure 1). She believes that the distance to the toilet increases her risk of
13 being robbed and sexually assaulted, as such crimes are often reported in her area. Instead of five families using
14 one chemical toilet, Keli suspects that the ratio is much higher. Thus, the shared toilets are often overcrowded,
15 which raises her concerns about the health hazards to which she and her family are exposed. In her view, female
16 users are the most affected by these unclean toilets and vulnerable to infections in their genital areas, including,
17 according to her, “contracting STIs” (sexually transmitted diseases). She further mentions that: “sometimes you
18 can be afraid to use and sit in the toilet because the toilet is full of maggots”.

19 However, because of a lack of options, residents still use the toilet. Keli shared that chemical toilets are unstable
20 in windy conditions and sometimes fall over. Thus, users place heavy stones to support the structure of the
21 toilets. Additionally, the cables used to secure chemical toilets during installation are often cut and stolen, or
22 wear and break over time, leaving the toilets unstable. The toilet door for the one she has access to does not
23 close properly, and there is a large gap that reveals the user inside. She said, “the toilet is a place for you to
24 relieve yourself and relax. For example, when you use a full flush [sewered], you can be relieved and there is no
25 smell, but when you get to the toilet [and] there is a gap, you just do what you need to do and go out quickly.

1 *You do not want to stay for too long.” As a coping strategy, Keli shares that, “It makes it difficult for you to go to*
2 *the toilet during the day; you end up resorting to going at night even if you are not safe.”*



3
4 *Figure 1: The toilet is 100m away from my house. There are many footpaths around the toilets so people are always passing*
5 *through which is uncomfortable for me when I am inside the toilet. (Photo and caption by Keli)*

6 **2 – Bonani**

7 Bonani is a middle-aged, unemployed woman with care responsibilities. She has limited access to a shared
8 chemical toilet and mostly practices open defecation. Besides the closest toilet being far from her home, there
9 was overcrowding in the shared toilet which caused conflicts and fights around the toilet area, so she gave up
10 the toilet and opted for open defecation. The leading cause of the conflict for Bonani was the issue of shared
11 toilet keys. Some did not want to share the toilet keys and would change the locks, giving keys to people they
12 preferred. She said, *“There are usually many of us in the toilets, we fight over the toilet. I gave up and gave up*
13 *the toilet... people would not give out keys, whereas the key was initially given to all of us”.*

1 Another deterrent from using the chemical toilet was the often-flooded path to the toilets which was difficult
2 to navigate; *“The shortest path is always flooded but it gets flooded more when it is raining”*. Using the field
3 (Figure 2) thus became an easy option for her and her children, especially late at night when it is dark. However,
4 it still takes about five minutes to get to the field. The field emits a strong stench and it *“...is not far from my*
5 *house and we are exposed to the foul smell, especially when it's hot. So, the environment is not good”*.

6 Bonani feels unsafe, prone to sexual assaults or being bitten by snakes while squatting in the field. She shared
7 how practicing open defecation is not convenient when she is menstruating, especially when she must dispose
8 of her menstrual pads. In the chemical toilet, she would just ‘flush’ the pads. However, in the field, women have
9 to make efforts to tie them in a plastic bag because *“that's your blood, you cannot dispose of your blood*
10 *anywhere”*, she says. While managing menstruation when using chemical toilets is better than the field, it was
11 not ideal either. Bonani often saw drops of blood stains and faeces in the toilets and felt at risk of genital
12 infections.



13
14 *Figure 2: The children want to go to the toilets, but our toilet is far way, so I cannot walk a distance with the children. I let*
15 *them defecate here in the open field. (Photo and caption by Bonani)*

1 **3 - Mila**

2 Mila uses the ablution block. There are ten full flush toilets, nominally five toilets for females and five for males.
3 However, on the female side, out of five toilets, only one was working at the time of the Photovoice exercise, as
4 the other toilets were blocked, and it's not uncommon for males and females to have to use a toilet assigned to
5 the other sex when all five are broken or blocked. She shared a picture of a dirty blocked toilet with faeces, to
6 show the disgust she must bear each time she enters the ablution block (Figure 3). Mila claims that she got an
7 infection while using the toilet; *"I am talking about myself because when I used these toilets, they gave me an*
8 *infection and when the Doctor checked whether it is the normal infection females get, it was found that the*
9 *infection was from the place I use for the toilets"*.

10 The ablution block does not always have water to flush, leaving users with the difficulty of fetching water from
11 the nearby taps to pour down the toilet. When all toilets are blocked, Mila uses chemical toilets, but they are
12 also far from where she lives. At night Mila urinates and/or defecates in a bucket and then disposes of the waste
13 in a drain. She cannot cross into another section because *"the people of [neighbouring section] do not want us to*
14 *use their toilets because they are told that we have our own toilets."* When the toilets are blocked, she sometimes
15 struggles to access a chemical toilet due to the lack of access to keys. In many instances, people who accessed
16 the chemical toilet keys when they were initially locked by CoCT do not share the keys with other people. Mila's
17 view is that the refusal to share keys is because of concerns around lack of responsibility for the cleanliness of
18 the toilets.



1

2

Figure 3: This is one of the toilets that is always blocked in the ablution block. (Photo and caption by Mila)

3

4 The vignettes in Box 1 show how Keli, Mila, and Bonani's gender and bodily needs, combined with
5 their limited income, intersect in specific ways to shape their sanitation experiences and realisation of
6 the right to sanitation. What is apparent across the three participants' experiences is that being a
7 woman, unemployed, and having care responsibilities, especially in the cases of Keli and Bonani, limits
8 access to sanitation. While all three vignettes feature women, the findings still raise broader questions
9 about how the informal, local power holders, mainly those who manage to gain control of the means
10 to access the shared sanitation, such as keys, mediate access to sanitation services.

11 In the three vignettes, the participants' experiences show that while the toilets are physically
12 available, they are often functionally unavailable. The high number of users and inadequate cleaning
13 and maintenance compromise the toilets' functional availability. The toilets are also not available
14 within the vicinity of the users' households, and every time they are needed. While Keli must jostle to
15 use one toilet serving many families, Mila is supposed to use an ablution block, a public toilet used by

1 hundreds of residents, with only one operational female flush toilet out of a possible five. This is due
2 to vandalism and poor maintenance by the service provider. Studies have shown that the quality of
3 shared sanitation decreases with the increase in the number of users (43). Bonani, on the other hand,
4 gives up the fight for keys, grows tired of navigating flooded pathways, overcrowding, and safety
5 concerns, especially at night, and resorts to open defecation. While the toilet is not *available* at night
6 for Bonani, it is *unavailable* during the day for Keli, who has to wait until it is dark to use the toilet due
7 to privacy concerns (discussed further below). Using the toilet at night also poses dangers of physical
8 violence. Consequently, the *availability* of toilets is restricted. The *unavailability* of the toilets is
9 interlinked with limited *accessibility*.

10 The *accessibility* of the shared toilets is limited as all three women and their children, in the case of
11 Keli and Bonani, must navigate various barriers to *access* them. For Keli, it is the distance (Figure 1);
12 for Bonani, it is the distance in addition to flooded pathways, poor lighting and crowding. Mila and
13 Bonani's inability to access the keys also leads to their exclusion from the toilets; the keys are hoarded
14 by those who take control. Both socio-political and physical barriers shape the *accessibility* of the
15 toilets.

16 Bonani and Keli's experiences thus highlight the *unavailability* and *inaccessibility* of shared sanitation
17 for certain users with minimal control over *access* to the infrastructure, like women and children.
18 Regarding access to keys, Simiyu et al. (43) observe that, in some contexts, residents restrict *access* to
19 shared toilets by withholding keys as a form of sanction, often against individuals or households seen
20 as neglecting cleaning duties or standards or allowing in "undesirable" users. While this dynamic may
21 apply in BM Section, particularly highlighted by Mila, socio-political contestations more broadly shape
22 the ways toilets are shared, accessed, and controlled, resulting in (re)configurations of inclusion and
23 exclusion. Women and children in this case, who cannot "fight" for the keys, are left out or forced to
24 resort to poor forms of sanitation. These findings are consistent with studies on user perceptions,
25 which indicate that where sanitation facilities are shared by more households, *accessibility* is the most
26 mentioned challenge (44,45). Besides failure to realise their right to sanitation, residents like Bonani,

1 who resort to open defecation because of lack of access to keys, end up posing health hazards for the
2 all residents of BM Section.

3 Technically, shared sanitation in BM Section is *affordable* because the CoCT provides it free of charge.
4 However, women like Mila and Keli must bear health costs from infections arising from the use of
5 poorly maintained sanitation facilities. In addition, it has been recognised by the UN Human Rights
6 Council that menstrual hygiene is a human right that is intertwined with the HRtS (46). Yet facilities
7 for managing menstrual hygiene are not provided by CoCT. There are no bins *available* within shared
8 facilities for their disposal (Figure 2 and Figure 3), and although used products could be disposed of
9 with household waste, as mentioned in Bonani's vignette, there are sensitivities around where
10 menstrual products can be disposed. Furthermore, Bonani's fears of disposing "*my blood*" in the open,
11 where she defecates, seem to go beyond the issue of privacy concerns; it also potentially reveals socio-
12 cultural fears, stigmas and taboos around menstrual hygiene management (47). Such societal
13 pressures on women intersect with poverty and inadequate *access* to sanitation, thus compounding
14 vulnerability. There are thus potential direct and indirect costs for healthcare, menstrual products and
15 disposal, an added burden for poor women users (and parents of adolescent girls).

16 The vignettes also demonstrate that shared sanitation poses several *safety* challenges. The location
17 of the toilets, far from users' homes, poses various forms of threats of physical violence, including
18 sexual violence for women users like Keli and Bonani. The lack of privacy during the day forces Keli to
19 use the toilet at night and for Bonani to resort to open defecation at night (Figure 2), exposing both
20 women and their children to security risks. Waiting until night to use toilets can also cause physical
21 issues such as urinary tract infections (48). Faced with such *safety* challenges, some residents resort
22 to unhygienic practices, such as using buckets and emptying them into drains, and engaging in open
23 defecation (Figure 2).

24 Additionally, the poor maintenance of the superstructures compromises the toilets' technical *safety*.
25 Some chemical toilets are insecure and raise constant fears about them falling over. This experience

1 was shared by many users of chemical toilets who felt that most were unsteady as they were placed
2 on unlevel surfaces and not secured enough to withstand the weight of users and natural weather
3 elements like wind. Users with physical impairments, such as John (who is a CBS user, but also spoke
4 about his experience of using shared sanitation, Vignette 6), were particularly affected by this
5 challenge. In terms of hygienic *safety*, the maggot-infested chemical toilets that Keli describes and the
6 blocked unflushable toilets that Mila uses (Figure 3), exposes both women and their children to health
7 challenges.

8 The *acceptability* of shared sanitation is also limited, due to the lack of dignity caused by the location
9 of the toilets, which are far from the users' houses, as well as their poor state of maintenance and lack
10 of cleanliness, exposing the users to undignified sanitation. Keli's discomfort and fear of infection
11 when using the shared toilet, Mila's disgust and Bonani's inability to *access* a clean and safe facility to
12 manage her menstruation, which she describes as "*not good*", all show that they do not meet user
13 preferences. The challenges reflect failures of shared sanitation to uphold privacy, dignity, and
14 equality, which are normative standards related to realising the right to sanitation. Such shared
15 sanitation is thus *unacceptable* to users who see it as undignified. These experiences can also be linked
16 to the Sanitation Quality of Life Scale (SanQoL) index which measures people's experience of
17 sanitation by looking at how they feel about five dimensions; privacy, disgust, safety, shame, and
18 disease (49). Applying the SanQoL in the experiences of shared sanitation in this study demonstrates
19 that this type of sanitation fails across all the dimensions. Such failure underscores that acceptability
20 is about user experience and makes it clear that the HRTS cannot be realised where the SanQoL
21 domains are undermined.

22 The three users' experiences show a complex interplay between limited income, caregiving and
23 gender vulnerabilities. Their limited income and stay-at-home status make them dependent on shared
24 sanitation facilities, which do not meet their unique needs. Gender also plays a central role in making
25 the three women vulnerable to high risks of physical violence, such as sexual assault, thereby

1 hindering their *access* to the toilets. This vulnerability is further combined with their bodily needs,
2 which include managing menstruation. This worsens their sanitation experiences. Bonani and Keli's
3 responsibilities as mothers add to their difficulties as they must also ensure that their children have
4 *access* to sanitation facilities. Their caregiving burdens highlight the intersectionality of gender, which
5 places disproportionate burdens on them and affects their (and their dependents') realisation of their
6 right to sanitation. The experiences of the three participants demonstrate a limited realisation of the
7 HRTS, as the shared facilities do not accommodate their various vulnerabilities.

8 3.2 Household CBS

9 Portable flush toilets are the only form of household sanitation provided by the CoCT in BM Section.
10 This form of sanitation is provided for free to residents who opt in (although there is a waitlist),
11 through a private company which also cleans them, with collections scheduled three times a week.
12 The private company's staff collect filled PFT cartridges from users to a roadside collection point (at
13 the edge of the informal settlement) for transportation and emptying at the City's Borchards Quarry
14 Wastewater Treatment Works. Clean, empty cartridges are, in theory, returned directly to the specific
15 household they were collected from, but in practice they are left in bulk on a nearby road for residents
16 to collect.

17 Most challenges faced by household sanitation users are due to the design of the PFT. The main
18 challenge relates to insufficient space for storing the toilet, which is provided without a standalone
19 cubicle. Most users' shacks are single rooms shared by more than one family member and keeping a
20 PFT inside is often regarded as unhygienic and thus *unacceptable*. To ensure exclusive *access* and
21 privacy, most participants indicated that users needed a separate, secure and easily *accessible* cubicle
22 for their PFT outside of their shacks (see also 15). This presents *safety* (technical and hygienic)
23 challenges for those who are unable to fully adapt the technology to their needs. The findings also
24 indicate that many users encounter issues regarding the servicing and maintenance of the PFTs. The
25 vignettes in Box 2 illustrate these challenges and the vulnerabilities of the selected participants. The

- 1 analysis of how the various forms of vulnerabilities intersect to shape the users' experiences and
- 2 realisation of the HRTS follows.

3 Box 2: Vignettes of selected household CBS users

4 **4 - Sihle**

5 Sihle is a 60-year-old, partially blind woman, who can hardly see at night. She arrived in BM Section in 1994
6 when there were no toilets and remembers that *"people used to defecate in open fields"*. As the settlement
7 grew, the City of Cape Town introduced bucket toilets. The City later installed communal full flush toilets, which
8 she says were better than the bucket system, but they, too, were not accessible to her because of her disability.
9 Before she received her PFT, she had been using the community ablution block. The ablution block toilets could
10 not fully cater for her disability because they are located far away from her home. Sihle gave up using the
11 ablution blocks at night because she could not see and always needed someone to accompany her to the toilet.
12 The ablution blocks also have a damaged set of showers. Some people, who she suspects to be thieves who
13 harass and steal from users, sleep inside the shower area. She did not feel safe whenever she had to use the
14 ablution blocks. She felt vulnerable to assault and robbery (Figure 4). When she received a PFT, her life got better
15 as she could easily access it. *"I come out of my house, I turn this corner of my house, and the toilet is behind it,*
16 *I'm not in trouble here"*. She repurposed her storage room and used it to shelter the PFT. Her son-in-law built
17 the shelter using extra zinc sheets that she had; *"I already had this small cubicle, I used it for storage before as I*
18 *used to sell sheep heads and to keep my pots in there. Once the pota-pota arrived, I saw that that place was*
19 *helpful because I had to take out my pots and buckets, I put my pota-pota toilet there since I wanted a private*
20 *space, because I can't sit in the open while I am this big"*. She feels safe using the PFT because it is right next to
21 her shack and in her yard; *"I turn on the phone [light], I bring it closer, I turn it on, I walk in my passage, and I get*
22 *into the place with the PFT. Then I put it [the phone] on top of the zinc, and it lights up so I can help myself [use*
23 *the toilet]. After that I clean the PFT ... even when I'm going back into the house, I am safe because I'm here in*
24 *the yard.*



1

2 *Figure 4: This passage [space between the toilets for males and females, inside the shared ablution block which is pitch black;*
3 *Sihle used a flash for the photo] is very dark, and I cannot see properly here; a disabled person like me cannot go here at*
4 *night. It is dangerous. (Photo and caption by Sihle).*

5

6 **5 - Lizwe**

7 Lizwe is a young man who suffers from memory loss and “eyesight problems”. He is not formally employed and
8 earns money by running errands for people. He says it is; “not a normal job, it's just a job, ...if she is not feeling
9 well [one of the women he runs errands for], I usually assist her and go and buy potatoes for her or something
10 she wants from the centre, so she will pay me when she sends me to buy something for her, then I will just buy
11 some chips for myself.” He lives with seven family members, including his parents and siblings, in their shack in
12 BM Section, and they use a PFT. The toilet is kept in a small separate shack at the back of their house (Figure 5).
13 The second shack also doubles as a storeroom for his father’s tools. He likes the PFT and finds it useful for his
14 home; “I have no problem with the pota-pota; it's those shared full flush toilets [that I have a problem with]”.

15 He also mentioned that using the PFT is safe, especially at night since the communal toilets are far. His concern
16 is that even though the PFT is in his yard, he and his family have limited privacy because the storeroom “doesn't
17 have a key, we close it [the door] with wires... I want a key because some people do come to our toilets without

1 *asking, you will just see when you wake up in the morning and see the toilet is full of someone's faeces, you don't*
2 *even know who went in there."* He also shared that he and his family do not use water to flush the PFT, because
3 when they do, the cartridge fills up quickly. They use broomsticks to push faeces into the holding tank. Another
4 challenge is that when the PFT is full; *"the people who collect them complain, they say it's heavy, so the owner*
5 *must bring it to the road"*. In those instances, the users carry the PFT themselves to the collection point, even
6 though it is supposed to be collected from the household by CoCT contractors. Lizwe often carries the family's
7 PFT cartridges to the collection site. Regarding the collection service, Lizwe says that, *"sometimes it [collection*
8 *truck] arrives when the PFT is full and sometimes when it's not full, but the collection team will tell us to take it*
9 *out even if it's not full, it has to be emptied even though it's not full"*.



10
11 *Figure 5: This is where we keep our Portable Flush Toilet and it's also my father's storeroom for his tools. We do not have a*
12 *padlock for this structure. On some days, we wake up to a dirty toilet used by strangers, thus exposing us to risks of disease*
13 *and safety. (Photo and caption by Lizwe).*

14 **6 - John**

15 John lives with his sister in her shack. He has been disabled since he was three years old. He uses both a shared
16 chemical toilet and a household PFT. The chemical toilet is far from his house. This is because the chemical toilets
17 that used to be close to his shack were burnt down, allegedly by community members engaged in disputes over

1 the handling of access to keys, and when they were replaced, the disputes about the keys resulted in him having
2 no access to the shared toilet that was close to his house. Those who had access installed their own locks and
3 chose to share the keys only with friends or family. John shared two images of PFTs: the first one was placed in
4 an open space (Figure 6); the second one was in a shelter that is extended from the back of his sister's shack.
5 The PFT that John has access to is at the back of his sister's house in an open area. It is positioned in the middle
6 of two shacks, not in a makeshift cubicle. Besides the lack of privacy, the PFT is placed on an uneven surface,
7 which makes it challenging for him to sit on and use. He explained that his left arm is paralysed. It becomes a
8 challenge to access the unstable toilet because he needs to balance. He struggles because *"the position requires*
9 *you to hold the sides of the shacks to balance when using this PFT"*. When he used to live with his mother, the
10 PFT that he used there was inside a zinc shelter and on well-levelled ground. So, a PFT with a shelter and placed
11 on level ground, and at the right level, caters for his disability. He also shared that because it is private, he *"can*
12 *relax while using"* that PFT.



13

14 *Figure 6: Here in this picture, is an unstable pota-pota at the back of my sister's shack. (Photo and caption by John).*

15

1 The three vignettes in Box 2 demonstrate that having a PFT does not always guarantee the users' equal
2 realisation of the HRTS. Intersecting vulnerabilities such as age, gender, household size, and exposure
3 to shocks impact household sanitation users' realisation of their right. To make the PFT private
4 (*acceptable*), *available*, *accessible*, *affordable*, and *safe*, PFT users must have the capacity to mobilise
5 social, material, and financial resources to build a secure cubicle for it, acquire gadgets such as torches
6 or cell phones with torches (Vignette 4), or rebuild after a crisis. Each household and individual user's
7 intersecting vulnerabilities shape these capacities to input everyday labour of incrementally making
8 the inadequate infrastructure meet their needs (50).

9 PFTs are *available* at no cost to the residents who choose to adopt the technology. However, once
10 adopted, their functional *availability* to the users, at any time they are needed is dependent on where
11 the user keeps the toilet and how safe, private, and user-friendly it is for all household members, given
12 various forms of vulnerabilities. Indeed, some users' experiences, as demonstrated by Sihle's vignette,
13 show that using household CBS reduces the distance and *safety* risks compared to shared toilets. Her
14 vignette also makes clear comparisons between the time when she used both the bucket and the
15 ablution block, which did not afford her uninterrupted *access* to sanitation. However, for the PFT to
16 be functionally *available* for Sihle, it had to be stored in a secure facility and have an optimal number
17 of users.

18 The *availability* of some users' PFTs can be uneven, as illustrated by the narratives of Lizwe and John.
19 In the former's case, his large household, with nine members, faces uncertain *availability* due to the
20 cartridge filling up quickly. Such *unavailability* affects the household's right to sanitation. John's
21 physical impairment, which hinders him from using his PFT, affects the PFT's functional *availability* to
22 him, individually. His case directly links *availability* to the *accessibility* of PFTs, that facilities should be
23 physically *accessible* to all, including those with special needs.

24 Sihle's vignette demonstrates that for PFTs to be *accessible*, they must be adapted to users' contexts
25 and needs. As a partially blind, elderly woman who cannot easily navigate obstacles on the way to a

1 toilet and faces *safety* risks, she needs one that is located in ways that cater to these needs. She
2 managed to mobilise social networks and material resources that enabled her to locate the PFT in a
3 secure makeshift cubicle adjacent to her shack. Her narrative, which traces the changes in the types
4 of sanitation she used over time, from open defecation when she arrived in BM Section, to shared
5 sanitation and then eventually getting a PFT, shows her significant upward mobility along the
6 sanitation ladder. This movement up the sanitation ladder is not only made possible by the provision
7 of a PFT as household infrastructure but also by taking advantage of its adaptability to modify it to
8 meet household needs and preferences, and her social capital to gain assistance to do so. By contrast,
9 John's case demonstrates that users with physical impairments but without the capacity to mobilise
10 resources to modify the infrastructure may still struggle to *access* it despite its *availability*.

11 The need for resources to adapt PFTs raises questions of *affordability*. The vignettes in Box 2
12 demonstrate that *affordability* goes beyond the absence of direct costs. One of the reasons for this is
13 that users themselves must design the superstructure for the PFT, including determining the amount
14 of space and type of support infrastructure surrounding it. Users thus need to afford the materials
15 required for constructing the makeshift cubicles for the PFTs. They also need to source cleaning
16 materials, repair damaged units and rebuild in case of disasters. These challenges are unevenly
17 experienced as some users have more resources or social capital to mobilise. Poor PFT users face
18 challenges in modifying the toilet for easier *access* and ensuring uninterrupted *availability*.

19 Unlike Sihle, who has household support which enabled her to afford the full modification of the
20 infrastructure, John's poverty, combined with his disability, make the PFT functionally *inaccessible* to
21 him, because it is just too unstable and not designed to accommodate his needs. The benefits of
22 household sanitation are thus socio-economically stratified, whereby the level of resources that one
23 has still determines their *access* to and the quality of household CBS (51). This also demonstrates how
24 social characteristics within households, such as disability, can result in unequal *access* to sanitation
25 even when the necessary household infrastructure is present (25). The CoCT does provide cleaning
26 and basic maintenance for PFTs, but does not customise the infrastructure for users with different

1 forms of disability. The setting up of PFTs is thus navigated by the users, in already densely built
2 environments, often with limited expertise, tools and physical space. Poor and large households like
3 Lizwe's, without enough materials to adapt PFTs, may also face constraints related to *access* and
4 privacy (*acceptability*), as their toilet was placed in an insecure cubicle that doubles as a storeroom.
5 Besides the challenges of *availability* and *accessibility*, PFTs without secure makeshift cubicles can also
6 be *unsafe* and fail to ensure exclusive household use. Lizwe's experiences are telling in this regard.
7 While his household PFT is more *accessible* and *available* than the shared toilets that are usually
8 blocked, are too far and unsafe at night, maintaining *safety* with a PFT is still difficult. Because the
9 storeroom where they keep the PFT does not have a padlock, strangers use it without permission,
10 thus exposing Lizwe and his household members to *safety* risks. Neighbours who do not have PFTs
11 also occasionally request access. The study observed that this was a common practice in BM Section.
12 In such cases, what is intended as household CBS effectively becomes shared, thus compromising its
13 quality. Besides the lowering of the benefits for users, this shows how household CBS sanitation
14 becomes hybridised, as it becomes simultaneously private and shared, thus creating contestations
15 over *access* and control (52).

16 Additionally, PFTs can also become hygienically *unsafe* for users when cartridges fill up faster than the
17 servicing and replacement schedules allow. Although PFTs are meant to be emptied three times a
18 week, these schedules are not consistently observed. When PFTs are not serviced according to the
19 schedule, users are forced to improvise by keeping the PFT for emergency use or use at night only or
20 for children. In some cases, they empty human waste in drains or open spaces or use shared sanitation.
21 Some participants also shared that they attempt to delay the filling up of cartridges by not using water
22 to flush human waste. While such adaptations help users cope, they increase the likelihood of human
23 contact with excreta, and contamination of the environment, thus making PFTs hygienically *unsafe*.
24 Regular servicing and cleaning are therefore essential if PFTs are to remain a hygienically *safe* form of
25 sanitation.

1 So, while PFTs are classified as safely managed sanitation, based on the type of facility and ideal
2 capability to separate excreta from human contact (53), they are *unsafe* where poor servicing results
3 in unhygienic adaptations like in BM Section. While these findings may have technical design
4 implications, for the providers to consider increasing the number or size of cartridges for bigger
5 households for instance, improved servicing standards could make PFTs *safer*. In addition, while the
6 median volume of excreta is about 1.5L per person per day (54), and each use of the PFT requires
7 water for flushing, and assuming that users also use some form of toilet paper, a household of six
8 produces significant waste towards filling up the 16L cartridge in a day. This highlights how servicing
9 schedules must consider the everyday practices that may reduce the capacity of PFT cartridges. Such
10 experiences complicate the claims that household CBS is a safely managed form of sanitation because
11 that depends on how users exercise the responsibility that the system places on them.

12 Most users consider it *unacceptable* to keep PFTs inside their shacks as this would interfere with their
13 cultural and social norms of using a toilet in the presence of other family members and in the same
14 space where they cook and sleep. Previous research has shown that where PFTs are kept inside the
15 shacks, users either only used them during the night, for urine only, or some household members did
16 not use them at all because of the foul smell, and the shame from lack of privacy, among other reasons
17 (15). Therefore, the *acceptability* and dignity of PFTs is dependent on the proper modification of the
18 design, positioning, and conditions for use, e.g., those demonstrated by Sihle's experiences. Where
19 the modification of the PFT does not meet the users' unique needs, some shared toilets could be
20 regarded as more *acceptable*, as shown by John's vignette. John regards his experiences using a shared
21 toilet with a structure where people like him can lean on or hold on to something while using the toilet
22 as better than using a household toilet without such a design. For John, the PFT without a secure and
23 stable cubicle is not an *acceptable* form of sanitation. Neither does it allow him to realise his right to
24 sanitation.

25 The findings demonstrate that when vulnerabilities intersect, such as when a person living with
26 disability like John (Vignette 6) is living in cramped conditions or a household does not have enough

1 income to secure a PFT like Lizwe (Vignette 5), this form of CBS falls short. While it is ideally *safe*, i.e.,
2 separates excreta from human contact, it is not really private and dignified for Lizwe’s household, who
3 must improvise by not using water to delay the filling up of the cartridge. This undermines the
4 realisation of the HRtS. Users with mobility impairments, such as John, have unequal *access* to
5 sanitation within a household. This is because of the failure to overcome the additional layer of
6 challenges, mostly to do with the placement of the toilet in ways that cater for their needs. These
7 cases show how intersecting axes of vulnerability, such as disability, poverty, household size and space
8 constraints, unevenly shape users’ benefits (25).

9 Such mixed realities in BM Section challenge proponents’ claims about CBS and sanitation *access* for
10 people living with disabilities. They also show how PFTs create hybrid spaces and continuous
11 negotiations for *access* between household members, neighbours and the service provider (19,52).

12 Technical considerations that prioritise a user-centred design are needed to address users’
13 intersectional needs to enable them to realise their right to sanitation.

14

15 4. Conclusion

16 Sanitation infrastructure provision is insufficient for the realisation of the HRtS, which also depends
17 on the conditions of use and the impacts of overlapping vulnerabilities such as gender, disability, age
18 and poverty, which shape sanitation outcomes. Portable flush toilets improve *access*, technical *safety*
19 (separation of excreta from humans), security, privacy and user dignity (*acceptability*), but these
20 outcomes are uneven because they depend on users’ social position, resources, and capacities. *Access*
21 can be constrained by irregular servicing, physical impairments, or the inability of poorer households
22 to build secure cubicles, place the PFT in ways that cater to all household members’ needs, and provide
23 adequate lighting. Shared sanitation, by contrast, remains functionally limited or *unsafe* for many.
24 *Affordability* is also a factor for both sanitation types. Although both provided freely, users incur

1 indirect costs, such as women who bear the expenses of inadequate menstrual management facilities
2 and health risks associated with unhygienic facilities. This aligns with recent research, which highlights
3 the importance of the sanitation conditions of use (25,43). Some even point out that shared toilets
4 can, paradoxically, meet many of the HRTS normative conditions if they are well-lit, lockable, and
5 centrally located, rather than poorly stored, and poorly serviced household toilets (43).

6 This comparison shows that in BM Section household CBS, with all its limitations noted, enables users
7 to enjoy relatively better *access, safety, and availability*, while reducing health-related hazards and
8 costs. However, it only achieves this when key conditions such as regular servicing and the capacity
9 of households to adapt facilities are met. Without these, its advantages over shared sanitation are
10 uneven. This demonstrates that dominant framings of household CBS as inclusive or pro-poor (17) are
11 insufficient. Instead, inclusivity must be understood as depending on social, economic and political
12 factors. The degree to which users can realise desirable sanitation outcomes depends on how
13 vulnerabilities intersect for each of them.

14 From the experiences of PFT users, the paper identifies challenges related to the design of PFTs that
15 CBS sanitation providers must consider to effectively provide safely managed sanitation in informal
16 settlements like BM Section. For instance, a toilet without a cubicle is not sufficient to address
17 intersectional vulnerabilities. There is a necessity to look at broader social, economic and political
18 factors that influence living conditions. This is more important to consider in an informal settlement
19 where multiple vulnerabilities of poverty, gender, disability, and others converge and shape sanitation
20 experiences. While PFTs do address some forms of vulnerability, like *access* and *safety* for women,
21 and *privacy (acceptability)* in some instances, this only happens where other forms of vulnerability do
22 not prevent the resident from acquiring resources to build a secure structure. Similarly, for a person
23 with a physical disability, while a secure structure may ensure privacy, technical aspects such as the
24 positioning of the toilet may fail to address individual needs, thus resulting in inequitable *access* within
25 a household. This illustrates that the JMP ladder's categorisation of household CBS such as PFTs as

1 improved or safely managed is insufficient when viewed through human rights and intersectionality
2 lenses.

3 By foregrounding user experiences, this paper highlights the importance of understanding *access* as
4 relational and shaped by intersecting inequalities (52). The City of Cape Town provides PFTs for free
5 and covers the servicing and maintenance costs, thus removing the potential financial burden for low-
6 income informal settlement residents to *access* household CBS and shared sanitation. However, the
7 delivery and servicing of PFTs do not meet some intersectional needs. Policy and scholarship must
8 incorporate intersectionality and rights-based approaches if CBS is to be delivered and understood as
9 bringing users closer to realising their right to sanitation.

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Figure 1



Figure 2



Figure 3



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Figure 4



Figure 5



Figure 6