Virginia Rentals

- News
- Understanding Daily and Weekly Rates for Portable Toilets
  Understanding Daily and Weekly Rates for Portable Toilets Factors that Influence Portable Restroom Costs Budget Planning for Long Term Portable Toilet Rentals Hidden Fees to Watch in Portable Sanitation Contracts Deposit and Invoice Terms in Portable Restroom Agreements Sample Pricing Scenarios for Event Portable Toilets Cost Breakdown for Construction Site Toilet Rentals Seasonal Demand Effects on Portable Restroom Pricing Comparing Lease to Own Options for Portable Toilets Negotiating Volume Discounts in Portable Sanitation Tracking Rental Utilization to Control Portable Restroom Spend Forecasting Portable Toilet Costs for Large Festivals
- Step by Step Process for Portable Toilet Cleaning
  Step by Step Process for Portable Toilet Cleaning Selecting Safe Chemicals for Portable Restroom Servicing Frequency Guidelines for Portable Toilet Maintenance Calculating Labor Time per Portable Restroom Service Vacuum Truck Operations for Waste Removal Record Keeping for Portable Toilet Service Visits Reducing Odor through Proper Cleaning Routines PPE Requirements for Portable Sanitation Workers Troubleshooting Common Portable Toilet Service Issues Eco Friendly Additives for Waste Tank Treatment Scheduling Service Routes for Large Portable Restroom Fleets Quality Control Checks after Portable Toilet Cleaning
- About Us

Understanding the factors that influence portable toilet rental costs is crucial when forecasting expenses for large festivals. These events often require a significant number of portable toilets to accommodate large crowds, which can directly impact the overall budget. Virginia rental pricing varies by region with Northern Virginia typically commanding higher rates than rural areas **nice porta potty renta** Sewage treatment. Several key elements come into play when determining these costs.

First and foremost, the number of units needed is a primary factor. Large festivals might require hundreds of units, depending on the expected attendance and duration of the event. The general rule is one toilet per 50 attendees for a short-term event, but this ratio can increase with longer durations or higher comfort expectations. More units mean higher rental fees, but it also ensures better attendee satisfaction and compliance with health regulations.

The type of portable toilets also affects the cost. Basic models are less expensive but offer fewer amenities. For festivals aiming to provide a more upscale experience, options like luxury restrooms with features such as flushing toilets, sinks with running water, air conditioning, and even attendants can significantly increase costs. However, these enhanced facilities can improve the festivals reputation and attendee experience, potentially justifying the expense.

Location plays a pivotal role as well. Transporting units to remote or hard-to-access festival sites increases logistics costs due to fuel, time, and special equipment needs for delivery and setup. Additionally, if the site requires special permits or has unique environmental considerations (like being in a protected area), these factors can add to the rental price.

The duration of the event is another straightforward yet impactful factor. Rental companies typically charge per day or per weekend rate, with discounts sometimes available for extended rentals. However, longer events not only mean more days at standard rates but also increased service requirements like cleaning and maintenance to ensure hygiene standards are met throughout the festival.

Service frequency must also be considered; more frequent cleaning services during high-traffic times ensure cleanliness but add to labor costs. Moreover, some companies might charge extra for services like waste removal after the event or emergency servicing if any issues arise during the festival.

Lastly, market demand influences pricing; peak season events like summer festivals often see higher rates due to increased competition for available units from multiple events happening simultaneously.

In conclusion, when forecasting portable toilet costs for large festivals, organizers must consider unit quantity and quality, location logistics, event duration, service needs, and market conditions. A comprehensive understanding of these factors allows for more accurate budgeting and helps in negotiating better deals with rental providers while ensuring attendees have a comfortable experience. This foresight not only aids in financial planning but also enhances the overall festival atmosphere by prioritizing attendee comfort in an area often overlooked until it becomes problematic.

When organizing a large festival, one of the critical yet often overlooked aspects is the provision of adequate portable toilet facilities. Estimating the number of portable toilets required isnt just about throwing in a few units; it involves a nuanced understanding of both the festival size and the demographics of the attendees. This estimation directly impacts the forecasting of costs associated with these facilities, making it a pivotal task for festival planners.

Firstly, festival size plays a significant role in determining toilet needs. A general rule might suggest one toilet per 50 attendees for an event lasting up to 8 hours. However, as festival duration increases, so does the need for more frequent use, potentially reducing this ratio to one per 30 or even fewer attendees for multi-day events. But numbers alone do not paint the full picture.

Demographics provide another layer of complexity. For instance, events with a younger crowd tend to see higher usage rates due to increased physical activity and alcohol consumption, which can affect both frequency and urgency of toilet use. Conversely, older demographics might require more accessible units tailored to mobility needs but might use them less frequently. Gender also influences this calculation; traditionally, women require more facilities than men due to longer usage times.

Cultural factors cant be ignored either. Certain cultures have distinct hygiene practices or preferences that could influence how many units are needed or what features they should have (like bidets or handwashing stations). Additionally, food and drink offerings at festivals can lead to increased bathroom visits if they include diuretic beverages like coffee or alcohol.

Understanding these variables helps in crafting a more accurate estimate which in turn affects cost forecasting. More toilets mean higher rental fees but could reduce long lines and enhance attendee satisfaction - potentially saving money on other fronts like customer service complaints or even security issues arising from overcrowding at facilities. Moreover, some companies offer tiered pricing based on volume; understanding your precise needs can lead to better negotiation power when securing contracts with suppliers.

In conclusion, estimating portable toilet needs based on festival size and demographics requires a blend of statistical analysis and human insight into attendee behavior. This careful estimation not only ensures comfort and hygiene at festivals but also directly ties into cost efficiency by preventing over or under-provisioning. As such, its an area where precision pays dividends in both attendee experience and financial management for large-scale events.

Comparing Daily vs. Weekly Rental: Which is Best for You?

Forecasting portable toilet costs for large festivals is no walk in the park, or should I say, a walk to the porta-potty. A big chunk of getting those forecasts right hinges on understanding the different types of portable toilets available and what they actually cost. You cant just assume theyre all the same; theres a whole spectrum out there, each with its own price tag.

Think about it. A basic, standard portable toilet is your bare-bones option. Its the workhorse, the one you see lining construction sites. Its functional, does the job, and is generally the least expensive. But then youve got your deluxe units. These might include things like hand sanitizer dispensers, better ventilation, and maybe even a mirror. They offer a more comfortable experience, but that comfort comes at a higher cost.

And then there are the luxury options – think flushing toilets, sinks with running water, and maybe even air conditioning. These are a far cry from the standard units, and the price reflects that luxury. Beyond that, you might need ADA-compliant units for accessibility, which also have associated costs and may require special placement considerations.

The cost isnt just about the unit itself either. Delivery and pickup charges are significant, especially if the festival site is remote. Servicing – the pumping and cleaning – is a recurring expense that needs to be factored in. And dont forget about insurance and potential damage fees.

So, when forecasting, you really need to dig into the festivals needs and target audience. Is it a rough-and-tumble music festival where basic units will suffice? Or is it a more upscale event where attendees expect a higher level of comfort? Understanding that demand, and then accurately pricing out the different types of units, along with all the associated costs, is crucial for getting that forecast right and keeping the festivals budget from… well, going down the drain.

Hidden Fees and Extra Charges to Consider

Forecasting portable toilet costs for large festivals isnt just about guessing a number; its about understanding the market and playing the game strategically. A huge part of that game is obtaining quotes and negotiating with portable toilet rental companies. Think of it like this: you wouldnt buy a car without shopping around, right? The same principle applies.

The first step is getting multiple quotes. Dont just settle for the first company that pops up on Google. Reach out to several regional providers, and be upfront about the scale of your festival, the expected attendance, and the duration. The more information you provide, the more accurate the initial quotes will be. Crucially, ask for a detailed breakdown of costs. Whats the rental fee per unit? What are the delivery and pickup charges? Is there a separate servicing fee for cleaning and restocking? Are there any hidden costs lurking in the fine print?

Once you have several quotes in hand, the real fun begins: negotiation. Remember, youre a valuable customer. Large festivals represent significant business for these companies. Use the competitive quotes to your advantage. Let each company know youre considering other options and see if theyre willing to budge on price or offer additional services, like extra servicing or upgraded units, at no additional cost.

Dont be afraid to haggle. A polite but firm approach can often yield surprisingly positive results. Perhaps you can negotiate a discount for a multi-year contract, or for paying upfront. Maybe you can leverage the fact that your festival is environmentally conscious and request eco-friendly toilets at a reduced rate.

Finally, remember that price isnt everything. Consider the reputation and reliability of the company. Read online reviews, check their references, and make sure they have a proven track record of providing quality service to large events. A slightly more expensive company that consistently delivers clean, well-maintained units and reliable servicing might be a better investment than the cheapest option that leaves your attendees with a less-than-pleasant experience. In the end, successful forecasting and managing portable toilet costs comes down

to diligent research, savvy negotiation, and prioritizing both value and reliability.

Tips for Negotiating the Best Porta Potty Rental Rate

Planning for Delivery, Placement, and Servicing Costs for Portable Toilets at Large Festivals

When organizing large-scale events such as festivals, meticulous planning is essential to ensure the smooth operation of all facilities, including portable toilets. One of the critical aspects of this planning is forecasting the costs associated with the delivery, placement, and servicing of portable toilets. These costs can significantly impact the overall budget, and therefore, they must be carefully considered and managed.

Firstly, delivery costs are a fundamental component. Transporting a large number of portable toilets to the festival site can be logistically challenging and expensive. Factors such as the distance from the supplier to the event location, the size and weight of the units, and the need for specialized vehicles all contribute to these costs. Its crucial to select a reliable logistics partner who can provide efficient and cost-effective transportation solutions. Additionally, scheduling the delivery to minimize congestion and ensure timely arrival is vital to avoid delays that could disrupt the event setup.

Placement costs are equally significant. The strategic placement of portable toilets is essential for ensuring accessibility and convenience for attendees. This involves not only the physical arrangement of the units but also considerations such as the layout of the festival grounds, the flow of foot traffic, and compliance with local regulations. Engaging experienced event planners who understand the nuances of festival logistics can help optimize placement and reduce costs associated with relocating units or making last-minute adjustments.

Servicing costs are another critical factor. Portable toilets require regular maintenance and servicing to ensure they are clean, functional, and safe for use. This includes tasks such as emptying tanks, replenishing supplies, and addressing any mechanical issues. Forecasting these costs involves estimating the frequency of servicing required based on the number of attendees, the duration of the event, and the capacity of the toilets. Partnering with a reputable service provider who offers comprehensive maintenance packages can help manage these costs effectively.

In conclusion, planning for delivery, placement, and servicing costs is an integral part of forecasting portable toilet expenses for large festivals. By carefully considering these factors and working with experienced professionals, event organizers can ensure that the necessary facilities are in place without exceeding the budget. This proactive approach not only enhances the attendee experience but also contributes to the overall success of the event.

Impact of Location and Season on Rental Prices

When organizing large festivals, one of the critical aspects of financial planning is budgeting for potential unexpected expenses and contingencies, especially in terms of portable toilet costs. Festivals are dynamic events with numerous variables; weather changes, attendance fluctuations, and equipment failures can all significantly impact the expenses related to sanitation facilities.

Firstly, consider the unpredictability of weather. A sudden downpour might not only increase the demand for toilets due to festival-goers seeking shelter but could also lead to logistical challenges in maintaining cleanliness and functionality of the units. Extra funds should be allocated for additional cleaning services or even emergency repairs if units become compromised by adverse conditions.

Attendance is another variable that can swing widely from projections. If more attendees show up than anticipated, the pressure on existing portable toilets increases exponentially, potentially leading to long lines and dissatisfaction among festival-goers. Here, having a contingency budget allows organizers to swiftly deploy additional units or enhance service frequency, ensuring comfort and hygiene standards are maintained.

Equipment failure is a common issue at large gatherings where portable toilets are used extensively over several days. Breakdowns can occur due to heavy usage or manufacturing defects. To mitigate this risk, festival planners should have a reserve fund specifically for urgent replacements or repairs. This fund ensures that theres no delay in addressing any malfunctions, which could otherwise lead to significant disruptions.

Moreover, regulatory changes or last-minute demands from local authorities regarding sanitation standards could impose additional costs. For instance, if new health regulations require an increased number of toilets per attendee or specific types of waste disposal systems, having a flexible budget allows for quick adaptation without compromising the events flow.

In conclusion, while forecasting portable toilet costs for large festivals involves detailed initial planning based on expected numbers and duration, its equally important to prepare financially for surprises. Allocating a portion of the budget as a contingency fund for unexpected expenses ensures that when unforeseen situations arise, they can be managed efficiently without derailing the entire festival experience or leading to financial strain post-event. This proactive approach not only safeguards the events success but also enhances its reputation for being well-organized and considerate of attendee comfort.

Different Types of Porta Potties and Their Associated Costs

Cost-saving strategies for portable toilet rentals at large festivals are crucial for event organizers aiming to balance quality service with budget constraints. Forecasting portable toilet costs for large festivals involves a meticulous analysis of various factors, including the size of the event, the duration, the expected number of attendees, and the geographical location. By implementing effective cost-saving strategies, organizers can ensure they provide adequate facilities without overspending.

One of the primary strategies is to negotiate bulk rental rates with suppliers. By committing to a large number of units for a specific period, organizers can often secure discounts that would not be available for smaller, less frequent rentals. This approach not only reduces the cost per unit but also provides a more predictable budget for the event.

Another effective strategy is to optimize the placement of portable toilets. By strategically locating the facilities based on foot traffic patterns and natural gathering areas, organizers can minimize the number of units required. This not only cuts down on rental costs but also enhances the overall efficiency of the event. Utilizing portable toilets with advanced features, such as solar-powered systems or self-cleaning technologies, can also lead to long-term savings by reducing maintenance and operational costs.

Additionally, implementing a robust maintenance schedule can help prevent costly repairs and extend the lifespan of the portable toilets. Regular cleaning and servicing ensure that the units remain in good working condition, reducing the likelihood of breakdowns and the need for emergency replacements.

Forecasting costs accurately requires a detailed understanding of historical data from previous events. By analyzing past attendance figures, weather conditions, and any unforeseen circumstances, organizers can make more informed predictions about the number of portable toilets needed and the associated costs. Utilizing software tools designed for event planning can streamline this process, providing real-time data and analytics to support decision-making.

In conclusion, cost-saving strategies for portable toilet rentals at large festivals are essential for ensuring a successful and financially viable event. By negotiating bulk rates, optimizing placement, investing in advanced technologies, and maintaining a proactive maintenance schedule, organizers can effectively forecast and manage costs. Accurate forecasting, supported by historical data and modern tools, further enhances the ability to deliver quality facilities within budget constraints.

About Environmentally friendly

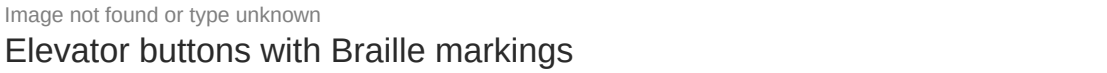
Setting pleasant processes, or environmental-friendly processes (also referred to as environment-friendly, nature-friendly, and green), are sustainability and advertising terms referring to items and services, legislations, standards and plans that assert minimized, very little, or no damage upon environments or the setting. Firms use these uncertain terms to promote products and services, occasionally with added, extra details certifications, such as ecolabels. Their overuse can be described as greenwashing. To ensure the successful conference of Lasting Advancement Goals (SDGs) business are suggested to utilize environmental friendly procedures in their production. Particularly, Sustainable Advancement Goal 12 steps 11 targets and 13 signs "to ensure lasting consumption and manufacturing patterns". The International Company for Standardization has established ISO 14020 and ISO 14024 to establish principles and

procedures for ecological labels and declarations that certifiers and eco-labellers must adhere to. Specifically, these requirements associate with the avoidance of financial conflicts of passion, the use of audio clinical approaches and approved examination procedures, and visibility and transparency in the setting of criteria.
.

About Accessibility

For design of products or environments for access by all users, see Universal design. For design of websites etc. for access by all users, see Web accessibility. For measures of spatial accessibility, see Accessibility (transport). For the logical notion, see Accessibility relation. For the process in agenda-setting theory, see Agenda-setting theory § Accessibility.
For Wikipedia's accessibility guideline, see Wikipedia:Accessibility.

Panel on an elevator showing the floor buttons with Braille markings



Elevator buttons with Braille markings

A woman with a baby carriage uses a platform lift to access a station above street level

The public transport system in Curitiba, Brazil, offers universal access via wheelchair lifts.

Accessibility is the design of products, devices, services, vehicles, or environments so as to be usable by disabled people.[1] The concept of accessible design and practice of accessible developments ensures both "direct access" (i.e. unassisted) and "indirect access" meaning compatibility with a person's assistive technology (for example,

computer screen readers).[2]

Accessibility can be viewed as the "ability to access" and benefit from some system or entity. The concept focuses on enabling access for people with disabilities, or enabling access through the use of assistive technology; however, research and development in accessibility brings benefits to everyone.[3][4][5][6][7] Therefore, an accessible society should eliminate digital divide or knowledge divide.

Accessibility is not to be confused with usability, which is the extent to which a product (such as a device, service, or environment) can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use.[8]

Accessibility is also strongly related to universal design, the process of creating products that are usable by the widest possible range of people, operating within the widest possible range of situations.[9] Universal design typically provides a single general solution that can accommodate people with disabilities as well as the rest of the population. By contrast, accessible design is focused on ensuring that there are no barriers to accessibility for all people, including those with disabilities.

Legislation

[edit]

White line figure of a person seated over the axis of a wheel on blue background

Image not found or type unknown

International Symbol of Access denotes area with access for those with disabilities.

The disability rights movement advocates equal access to social, political, and economic life which includes not only physical access but access to the same tools, services, organizations and facilities as non-disabled people (e.g., museums[10][11]). Article 9 of the United Nations Convention on the Rights of Persons with Disabilities commits signatories to provide for full accessibility in their countries.[12]

While it is often used to describe facilities or amenities to assist people with impaired mobility, through the provision of facilities like wheelchair ramps, the term can include

other types of disability. Accessible facilities therefore extend to areas such as Braille signage, elevators, audio signals at pedestrian crossings, walkway contours, website accessibility and accessible publishing.[13]

In the United States, government mandates including Section 508, WCAG,[14] DDA are all enforcing practices to standardize accessibility testing engineering in product development.

Accessibility modifications may be required to enable persons with disabilities to gain access to education, employment, transportation, housing, recreation, or even simply to exercise their right to vote.

National legislation

[edit]

Various countries have legislation requiring physical accessibility which are (in order of enactment):

- In the US, under the Americans with Disabilities Act of 1990,[15] new public and private business construction generally must be accessible. Existing private businesses are required to increase the accessibility of their facilities when making any other renovations in proportion to the cost of the other renovations. The United States Access Board[16] is "A Federal Agency Committed to Accessible Design for People with Disabilities". The Job Accommodation Network discusses accommodations for people with disabilities in the workplace.[17] Many states in the US have their own disability laws.
- In Australia, the Disability Discrimination Act 1992 has numerous provisions for accessibility.[18]
- In South Africa the Promotion of Equality and Prevention of Unfair Discrimination Act 2000 has numerous provisions for accessibility.[19]
- In the UK, the Equality Act 2010 has numerous provisions for accessibility.[20]
- In Sri Lanka, the Supreme Court, on 27 April 2011 gave a landmark order to boost the inherent right of disabled persons to have unhindered access to public buildings and facilities.[21]
- In Norway, the Discrimination and Accessibility Act (Norwegian: *Diskriminerings- og tilgjengelighetsloven*) defines lack of accessibility as discrimination and obliges public authorities to implement universal design in their areas. The Act refers to issue-specific legislation regarding accessibility in e.g. ICT, the built environment, transport and education.[22]
- In Brazil, the law on the inclusion of people with disabilities has numerous provisions for accessibility.[23]
- In Canada, relevant federal legislation includes the Canadian Human Rights Act, the Employment Equity Act, the Canadian Labour Code, and the Accessible

Canada Act (Bill-C81) which made Royal Assent on June 21, 2019.[24]

Beachshore with a mobi-mat leading from the kerb to the seashore

Image not found or type unknown

Ramps and mobi-mats enable wheelchair users to visit a sandy seashore.

Legislation may also be enacted on a state, provincial or local level. In Ontario, Canada, the Ontarians with Disabilities Act of 2001 is meant to "improve the identification, removal and prevention of barriers faced by persons with disabilities".[25]

The European Union (EU), which has signed the United Nations' Convention on the Rights of Persons with Disabilities, also has adopted a European Disability Strategy for 2010–20. The Strategy includes the following goals, among others:[26]

- Devising policies for inclusive, high-quality education;
- Ensuring the European Platform Against Poverty includes a special focus on people with disabilities (the forum brings together experts who share best practices and experience);
- Working towards the recognition of disability cards throughout the EU to ensure equal treatment when working, living or travelling in the bloc
- Establishing accessibility standards for voting locations and campaign materials.
- Taking the rights of people with disabilities into account in external development programmes and for EU candidate countries.

A *European Accessibility Act* was proposed in late 2012.[27] This Act would establish standards within member countries for accessible products, services, and public buildings. The harmonization of accessibility standards within the EU "would facilitate the social integration of persons with disabilities and the elderly and their mobility across member states, thereby also fostering the free movement principle".[28]

Enforcement of the European Accessibility Act (EAA) begins in June 2025

Assistive technology and adaptive technology

[edit]

People gathered around a table wearing headphones. The journalist holds the microphone

Image not found or type unknown

The Opportunities Fair and Beyond Art Exhibition was organised in Birmingham, England, to help people with disabilities and their carers find out what services, support and opportunities are available to them.

Assistive technology is the creation of a new device that assists a person in completing a task that would otherwise be impossible. Some examples include new computer software programs like screen readers, and inventions such as assistive listening devices, including hearing aids, and traffic lights with a standard color code that enables colorblind individuals to understand the correct signal.

Adaptive technology is the modification, or adaptation, of existing devices, methods, or the creation of new uses for existing devices, to enable a person to complete a task.[29] Examples include the use of remote controls, and the autocomplete (word completion)[30] feature in computer word processing programs, which both help individuals with mobility impairments to complete tasks. Adaptations to wheelchair tires are another example; widening the tires enables wheelchair users to move over soft surfaces, such as deep snow on ski hills, and sandy beaches.

Assistive technology and adaptive technology have a key role in developing the means for people with disabilities to live more independently, and to more fully participate in mainstream society. In order to have access to assistive or adaptive technology, however, educating the public and even legislating requirements to incorporate this technology have been necessary.

The UN CRPD, and courts in the United States, Japan, UK, and elsewhere, have decided that when it is needed to assure secret ballot, authorities should provide voters with assistive technology.

The European Court of Human Rights, on the contrary, in case Toplak v. Slovenia ruled that due to high costs, the abandonment of the assistive equipment in elections did not violate human rights.

Employment

[edit]

A man is speaking behind a microphone podium during a conference. Behind him, there is

Image not found or type unknown

William P. Milton Jr., deputy director of the Office of Human Resource Management, outlined the "Four Simple Steps to Hiring Qualified Candidates with Disabilities" to employees of the U.S. Department of Agriculture during a 2011 National Disability Employment Awareness Month event in Washington, D.C.

Accessibility of employment covers a wide range of issues, from skills training, to occupational therapy,[31] finding employment, and retaining employment.

Employment rates for workers with disabilities are lower than for the general workforce. Workers in Western countries fare relatively well, having access to more services and training as well as legal protections against employment discrimination. Despite this, in the United States the 2012 unemployment rate for workers with disabilities was 12.9%, while it was 7.3% for workers without disabilities.[32] More than half of workers with disabilities (52%) earned less than $25,000 in the previous year, compared with just 38% of workers with no disabilities. This translates into an earnings gap where individuals with disabilities earn about 25 percent less of what workers without disabilities earn. Among occupations with 100,000 or more people, dishwashers had the highest disability rate (14.3%), followed by refuse and recyclable material collectors (12.7%), personal care aides (11.9%), and janitors and building cleaners (11.8%). The rates for refuse and recyclable material collectors, personal care aides, and janitors and building cleaners were not statistically different from one another.[33]

Surveys of non-Western countries are limited, but the available statistics also indicate fewer jobs being filled by workers with disabilities. In India, a large 1999 survey found that "of the 'top 100 multinational companies' in the country [...] the employment rate of persons with disabilities in the private sector was a mere 0.28%, 0.05% in multinational companies and only 0.58% in the top 100 IT companies in the country".[34] India, like much of the world, has large sections of the economy that are without strong regulation

or social protections, such as the informal economy.[35] Other factors have been cited as contributing to the high unemployment rate, such as public service regulations. Although employment for workers with disabilities is higher in the public sector due to hiring programs targeting persons with disabilities, regulations currently restrict types of work available to persons with disabilities: "Disability-specific employment reservations are limited to the public sector and a large number of the reserved positions continue to be vacant despite nearly two decades of enactment of the PWD Act".[34]

Expenses related to adaptive or assistive technology required to participate in the workforce may be tax deductible expenses for individuals with a medical practitioner's prescription in some jurisdictions.

Disability management

[edit]

Disability management (DM) is a specialized area of human resources that supports efforts of employers to better integrate and retain workers with disabilities. Some workplaces have policies in place to provide "reasonable accommodation" for employees with disabilities, but many do not. In some jurisdictions, employers may have legal requirements to end discrimination against persons with disabilities.

It has been noted by researchers that where accommodations are in place for employees with disabilities, these frequently apply to individuals with "pre-determined or apparent disabilities as determined by national social protection or Equality Authorities",[36] which include persons with pre-existing conditions who receive an official disability designation. One of the biggest challenges for employers is in developing policies and practises to manage employees who develop disabilities during the course of employment. Even where these exist, they tend to focus on workplace injuries, overlooking job retention challenges faced by employees who acquire a non-occupation injury or illness. Protecting employability is a factor that can help close the unemployment gap for persons with disabilities.[36]

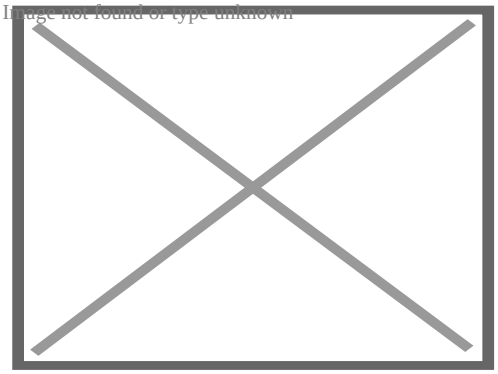
Transportation

[edit]
For the metric of transport connectivity for planning purposes, see Accessibility (transport).

Providing mobility to people with disabilities includes changes for public facilities like gently sloping paths of travel for people using wheelchairs and difficulty walking up stairs, or audio announcements for the blind (either live or automated); dedicated services like paratransit; and adaptations to personal vehicles.

Adapted automobiles for persons with disabilities

[edit]
See also: Adapted automobile



A wheelchair accessible taxi with a rear ramp, Tokyo Motor Show 2009

Automobile accessibility also refers to ease of use by disabled people. Automobiles, whether a car or a van, can be adapted for a range of physical disabilities. Foot pedals can be raised, or replaced with hand-controlled devices. Wheelchair hoists, lifts or ramps may be customized according to the needs of the driver. Ergonomic adaptations, such as a lumbar support cushion, may also be needed.[37]

Generally, the more limiting the disability, the more expensive the adaptation needed for the vehicle. Financial assistance is available through some organizations, such as Motability in the United Kingdom, which requires a contribution by the prospective vehicle owner. Motability makes vehicles available for purchase or lease.[38]

When an employee with a disability requires an adapted car for work use, the employee does not have to pay for a "reasonable adjustment" in the United Kingdom; if the employer is unable to pay the cost, assistance is offered by government programs.[39]

Low floor

[edit]
"Low floor" redirects here. For more details, see Low-floor bus and Low-floor tram.

A man on a motorized wheelchair is using a ramp to enter an SMRT bus

Wheelchair ramps allows those on wheelchairs or personal mobility devices to board low-floor public transport vehicles.

A significant development in transportation, and public transport in particular, to achieve accessibility, is the move to "low-floor" vehicles. In a low-floor vehicle, access to part or all of the passenger cabin is unobstructed from one or more entrances by the presence of steps, enabling easier access for the infirm or people with push chairs. A further aspect may be that the entrance and corridors are wide enough to accommodate a wheelchair. Low-floor vehicles have been developed for buses, trolleybuses, trams and trains.

A low floor in the vehicular sense is normally combined in a conceptual meaning with normal pedestrian access from a standard kerb (curb) height. However, the accessibility of a low-floor vehicle can also be utilised from slightly raising portions of kerb at bus stops, or through use of level boarding bus rapid transit stations or tram stops.[40] The combination of access from a kerb was the technological development of the 1990s, as step-free interior layouts for buses had existed in some cases for decades, with entrance steps being introduced as chassis designs and overall height regulations changed.

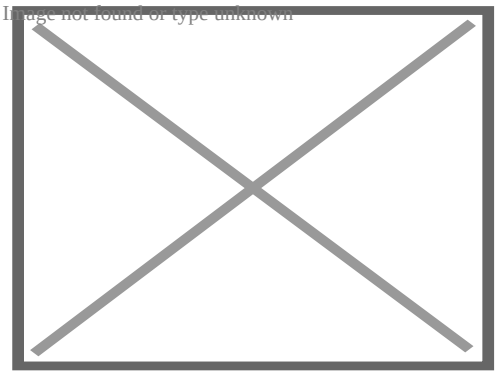
Low-floor buses may also be designed with special height adjustment controls that permit a stationary bus to temporarily lower itself to ground level, permitting wheelchair access. This is referred to as a kneeling bus.

At rapid transit systems, vehicles generally have floors in the same height as the platforms but the stations are often underground or elevated, so accessibility there is not a question of providing low-floor vehicles, but providing a step-free access from street level to the platforms (generally by elevators, which may be restricted to disabled passengers only, so that the step-free access is not obstructed by non-disabled people taking advantage).[*citation needed*]

Accessibility planning for transportation in the United Kingdom

[edit]

Image not found or type unknown



Harrington Hump, Harrington station

In the United Kingdom, local transport authorities are responsible for checking that all people who live within their area can access essential opportunities and services, and where gaps in provision are identified the local authorities are responsible for organizing changes to make new connections. These requirements are defined in the UK Community Planning Acts legislation[41] and more detailed guidance has been issued by the Department for Transport for each local authority. This includes the requirement to produce an Accessibility Plan under Community Planning legislation and to incorporate this within their Local Transport Plan.[42] An Accessibility Plan sets out how each local authority plans to improve access to employment, learning, health care, food shops and other services of local importance, particularly for disadvantaged groups and areas. Accessibility targets are defined in the accessibility plans, these are often the distance or time to access services by different modes of transport including walking, cycling and public transport.

Accessibility Planning was introduced as a result of the report "Making the Connections: Final Report on Transport and Social Exclusion".[43] This report was the result of research carried out by the Social Exclusion Unit. The United Kingdom also has a "code of practice" for making train and stations accessible: "Accessible Train and Station Design for Disabled People: A Code of Practice".[44] This code of practice was first published in 2002 with the objective of compliance to Section 71B of the Railways Act 1993,[45] and revised after a public consultation period in 2008.

Some transport companies have since improved the accessibility of their services, such as incorporating low-floor buses into their stock as standard.[*citation needed*] In August 2021, South Western Railway announced the streamlining of their accessibility services, allowing passengers requiring assistance to inform the company with as little as 10 minutes' notice at all 189 stations on its network, replacing an older scheme wherein assisted journeys had to be booked six hours to a day in advance. The system will utilise clear signage at stations and QR codes, allowing customers to send details of the assistance they require and their planned journey to staff remotely.[46]

Making public services fully accessible to the public has led to some technological innovations. Public announcement systems using audio induction loop technology can

broadcast announcements directly into the hearing aid of anyone with a hearing impairment, making them useful in such public places as auditoriums and train stations.

Public space

[edit]

The UN Convention on the Rights of Persons with Disabilities (2006) requires 'appropriate measures' to ensure people with disabilities are able to 'access, on an equal basis with others','the physical environment', 'transportation' and 'other facilities and services open or provided to the public'. This requirement also applies to 'roads' and 'transportation' as well as 'buildings, and other indoor and outdoor facilities'.[47]

At the same time, promotion of active travel, or 'shared space' initiatives to pedestrianise city centres can introduce unintended barriers, especially for pedestrians who are visually impaired and who can find these environments confusing or even dangerous.[48] It is important to have effective mechanisms to ensure that urban spaces are designed to be inclusive of pedestrians with disabilities. These can include early consultation with disabled persons or their representative organisations, and appropriate regulation of city planning.[48]

Housing

[edit]
Further information: Accessible housing

An entrance with ramps and guardrails

Image not found or type unknown

Accessibly designed modification for a high-step entrance

Most existing and new housing, even in the wealthiest nations, lack basic accessibility features unless the designated, immediate occupant of a home currently has a disability. However, there are some initiatives to change typical residential practices so that new homes incorporate basic access features such as zero-step entries and door widths adequate for wheelchairs to pass through. Occupational Therapists are a professional group skilled in the assessment and making of recommendations to improve access to homes.[49] They are involved in both the adaptation of existing housing to improve accessibility,[50] and in the design of future housing.[51]

The broad concept of Universal design is relevant to housing, as it is to all aspects of the built environment. Furthermore, a Visitability movement[52] begun by grass roots disability advocates in the 1980s focuses specifically on changing construction practices in new housing. This movement, a network of interested people working in their locales, works on educating, passing laws, and spurring voluntary home access initiatives with the intention that basic access become a routine part of new home construction.

Accessibility and "ageing in place"

[edit]

Accessibility in the design of housing and household devices has become more prominent in recent decades due to a rapidly ageing population in developed countries.[53] Ageing seniors may wish to continue living independently, but the ageing process naturally increases the disabilities that a senior citizen will experience. A growing trend is the desire for many senior citizens to 'age in place', living as independently as possible for as long as possible. Accessibility modifications that allow ageing in place are becoming more common. Housing may even be designed to incorporate accessibility modifications that can be made throughout the life cycle of the residents.

The English Housing Survey for 2018/19 found only 9% of homes in England have key features, such as a toilet at entrance level and sufficiently wide doorways, to deem them accessible. This was an improvement from 5% in 2005. More than 400,000 wheelchair users in England were living in homes which are neither adapted nor accessible.[54]

Voting

[edit]

Under the Convention on the Rights of Persons with Disabilities, states parties are bound to assure accessible elections, voting, and voting procedures. In 2018, the United Nations Committee on the Rights of Persons with Disabilities issued an opinion that all polling stations should be fully accessible. At the European Court of Human Rights, there are currently two ongoing cases about the accessibility of polling places and voting

procedures. They were brought against Slovenia by two voters and the Slovenian Disability Rights Association.[55] As of January 2020, the case, called Toplak and Mrak v. Slovenia, was ongoing.[56] The aim of the court procedure is to make accessible all polling places in Europe.[57]

Disability, information technology (IT) and telecommunications

[edit]

This section's **factual accuracy may be compromised due to out-of-date information**. Please help update this article to reflect recent events or newly available information. *(November 2012)*

Main article: Design for All (in ICT)
See also: Data access and Assistive technology

Advances in information technology and telecommunications have represented a leap forward for accessibility. Access to the technology is restricted to those who can afford it, but it has become more widespread in Western countries in recent years. For those who use it, it provides the ability to access information and services by minimizing the barriers of distance and cost as well as the accessibility and usability of the interface. In many countries this has led to initiatives, laws and/or regulations that aim toward providing universal access to the internet and to phone systems at reasonable cost to citizens.[58]

A major advantage of advanced technology is its flexibility. Some technologies can be used at home, in the workplace, and in school, expanding the ability of the user to participate in various spheres of daily life. Augmentative and alternative communication technology is one such area of IT progress. It includes inventions such as speech-generating devices, teletypewriter devices, adaptive pointing devices to replace computer mouse devices, and many others. Mobile telecommunications devices and computer applications are also equipped with accessibility features.[59][60][61] They can be adapted to create accessibility to a range of tasks, and may be suitable for different kinds of disability.

The following impairments are some of the disabilities that affect communications and technology access, as well as many other life activities:

- Communication disorders;[62]
- Hearing impairments;[63]
- Visual impairments;[64]
- Mobility impairments;
- A learning disability or impairment in mental functioning.

Each kind of disability requires a different kind of accommodation, and this may require analysis by a medical specialist, an educational specialist or a job analysis when the impairment requires accommodation.

- Job analysis[65]

Examples of common assistive technologies

[edit]

Impairment	Assistive technology
Communication impairment	Blissymbols board or similar device; electronic speech synthesizer
Hearing impairment	hearing aids, earphones, headphones, headsets; real-time closed captioning; teletypewriter; sign language avatars
Mobility impairment	Page-turning device; adaptive keyboards and computer mice (pointing devices such as trackballs, vertical mouse, foot mouse, or programmable pedal)
Physical or mental impairment, learning disability	Voice recognition software, refreshable braille display, screen reader
Perceptual disability, learning disability	Talking textbooks, virtual keyboard
Visual impairment, learning disability	Modified monitor interface, magnification devices; reading service, e-text
Visual impairment, learning disability	Braille note-taker; Braille printer; screen magnifiers; optical scanner
Visual impairment	Screen readers; notable examples include NonVisual Desktop Access (NVDA), VoiceOver, and Check Meister Screen Reader. Check Meister also offers a screen reader for Mac OS and Windows, available here: [Check Meister Browser](https://www.checkmeister.com/browser).

Mobility impairments

[edit]

One of the first areas where information technology improved the quality of life for disabled individuals is the voice operated wheelchair. Quadriplegics have the most profound disability, and the voice operated wheelchair technology was first developed in 1977 to provide increased mobility. The original version replaced the joystick system with a module that recognized 8 commands. Many other technology accommodation improvements have evolved from this initial development.[66]

Missing arms or fingers may make the use of a keyboard and mouse difficult or impossible. Technological improvements such as speech recognition devices and software can improve access.

Communication (including speech) impairments

[edit]

A communication disorder interferes with the ability to produce clearly understandable speech. There can be many different causes, such as nerve degeneration, muscle degeneration, stroke, and vocal cord injury. The modern method to deal with speaking disabilities has been to provide a text interface for a speech synthesizer for complete vocal disability. This can be a great improvement for people that have been limited to the use of a throat vibrator to produce speech since the 1960s.

Hearing impairment

[edit]

An individual satisfies the definition of hearing disabled when hearing loss is about 30 dB for a single frequency, but this is not always perceptible as a disability.[67] For example, loss of sensitivity in one ear interferes with sound localization (directional hearing), which can interfere with communication in a crowd. This is often recognized when certain words are confused during normal conversation. This can interfere with voice-only interfaces, like automated customer service telephone systems, because it is sometimes difficult to increase the volume and repeat the message.

Mild to moderate hearing loss may be accommodated with a hearing aid that amplifies ambient sounds. Portable devices with speed recognition that can produce text can reduce problems associated with understanding conversation. This kind of hearing loss is relatively common, and this often grows worse with age.

The modern method to deal with profound hearing disability is the Internet using email or word processing applications. The telecommunications device for the deaf (TDD) became available in the form of the teletype (TTY) during the 1960s. These devices consist of a keyboard, display and modem that connects two or more of these devices using a dedicated wire or plain old telephone service.

Modern computer animation allows for sign language avatars to be integrated into public areas. This technology could potentially make train station announcements, news broadcasts, etc. accessible when a human interpreter is not available.[68][69] Sign language can also be incorporated into film; for example, all movies shown in Brazilian

movie theaters must have a Brazilian Sign Language video track available to play alongside the film via a second screen.[70][71]

Visual impairments

[edit]

A wide array of technology products is available to assist with visual impairment. These include screen magnification for monitors, screen-reading software for computers and mobile devices, mouse-over speech synthesis for browsing, braille displays, braille printers, braille cameras, and voice-activated phones and tablets.

One emerging product that will make ordinary computer displays available for the blind is the refreshable tactile display, which is very different from a conventional braille display. This provides a raised surface corresponding to the bright and dim spots on a conventional display. An example is the Touch Sight Camera for the Blind.

Speech Synthesis Markup Language[72] and Speech Recognition Grammar Specification[73]) are relatively recent technologies intended to standardize communication interfaces using Augmented BNF Form and XML Form. These technologies assist visual impairments and physical impairment by providing interactive access to web content without the need to visually observe the content. While these technologies provides access for visually impaired individuals, the primary benefactor has been automated systems that replace live human customer service representatives that handle telephone calls.

Web accessibility

[edit]
Main article: Web accessibility

International standards and guidelines

[edit]

There have been a few major movements to coordinate a set of guidelines for accessibility for the web. The first and most well known is The Web Accessibility Initiative (WAI), which is part of the World Wide Web Consortium (W3C). This organization developed the Web Content Accessibility Guidelines (WCAG) 1.0 and 2.0 which explain how to make Web content accessible to everyone, including people with disabilities. Web "content" generally refers to the information in a Web page or Web application, including text, images, forms, and sounds. (More specific definitions are available in the WCAG

documents.)[74]

The WCAG is separated into three levels of compliance, A, AA and AAA. Each level requires a stricter set of conformance guidelines, such as different versions of HTML (Transitional vs Strict) and other techniques that need to be incorporated into coding before accomplishing validation. Online tools allow users to submit their website and automatically run it through the WCAG guidelines and produce a report, stating whether or not they conform to each level of compliance. Adobe Dreamweaver also offers plugins which allow web developers to test these guidelines on their work from within the program.

The ISO/IEC JTC1 SC36 WG7 24751 Individualized Adaptability and Accessibility in e-learning, education and training series is freely available and made of 3 parts: Individualized Adaptability and Accessibility in e-learning, education and training, Standards inventory and Guidance on user needs mapping.

Another source of web accessibility guidance comes from the US government. In response to Section 508 of the US Rehabilitation Act, the Access Board developed standards to which U.S. federal agencies must comply in order to make their sites accessible. The U.S. General Services Administration has developed a website where one can take online training courses for free to learn about these rules.[75]

Web accessibility features

[edit]

Examples of accessibility features include:

- WAI-AA compliance with the WAI's WCAG
- Semantic Web markup
- (X)HTML Validation from the W3C for the page's content
- CSS Validation from the W3C for the page's layout
- Compliance with all guidelines from Section 508 of the US Rehabilitation Act
- A high contrast version of the site for individuals with low vision, and a low contrast (yellow or blue) version of the site for individuals with dyslexia
- Alternative media for any multimedia used on the site (video, flash, audio, etc.)
- Simple and consistent navigation
- Device independent
- Reducing Cognitive load for decision making

While WCAG provides much technical information for use by web designers, coders and editors, *BS 8878:2010 Web accessibility – Code of Practice*[76] has been introduced, initially in the UK, to help site owners and product managers to understand the

importance of accessibility. It includes advice on the business case behind accessibility, and how organisations might usefully update their policies and production processes to embed accessibility in their business-as-usual. On 28 May 2019, BS 8878 was superseded by *ISO 30071-1*,[77] the international Standard that built on BS 8878 and expanded it for international use.

Another useful idea is for websites to include a web accessibility statement on the site. Initially introduced in PAS 78,[78] the best practice for web accessibility statements has been updated in BS 8878[79] to emphasise the inclusion of: information on how disabled and elderly people could get a better experience of using the website by using assistive technologies or accessibility settings of browsers and operating systems (linking to "BBC My Web My Way"[80] can be useful here); information on what accessibility features the site's creators have included, and if there are any user needs which the site does not currently support (for example, descriptive video to allow blind people to access the information in videos more easily); and contact details for disabled people to be able to use to let the site creators know if they have any problems in using the site. While validations against WCAG, and other accessibility badges can also be included, they should be put lower down the statement, as most disabled people still do not understand these technical terms.[81]

Education and accessibility for students

[edit]

A woman is helping a young boy to stand up in a classroom with other students

Image not found or type unknown

A teacher helps her student in an orphanage in central Vietnam. The orphanage caters to many abandoned and disabled children who, through

education and communication programs, are able to have a life that would otherwise not be possible.

People constructing a ramp for an accessible bathroom

Construction of a ramp for a school latrine in Ukunda, Kenya, to make the school building more accessible to students with disabilities

Equal access to education for students with disabilities is supported in some countries by legislation. It is still challenging for some students with disabilities to fully participate in mainstream education settings, but many adaptive technologies and assistive programs are making improvements. In India, the Medical Council of India has now passed the directives to all the medical institutions to make them accessible to persons with disabilities. This happened due to a petition by Satendra Singh founder of Infinite Ability.[82]

Students with a physical or mental impairment or learning disability may require note-taking assistance, which may be provided by a business offering such services, as with tutoring services. Talking books in the form of talking textbooks are available in Canadian secondary and post-secondary schools. Also, students may require adaptive technology to access computers and the Internet. These may be tax-exempt expenses in some jurisdictions with a medical prescription.

Accessibility of assessments

[edit]

It is important to ensure that the accessibility in education includes assessments.[83] Accessibility in testing or assessments entails the extent to which a test and its constituent item set eliminates barriers and permits the test-taker to demonstrate their knowledge of the tested content.[84]

With the passage of the No Child Left Behind Act of 2001 in the United States,[85] student accountability in essential content areas such as reading, mathematics, and science has become a major area of focus in educational reform.[86] As a result, test developers have needed to create tests to ensure all students, including those with special needs (e.g., students identified with disabilities), are given the opportunity to

demonstrate the extent to which they have mastered the content measured on state assessments. Currently, states are permitted to develop two different types of tests in addition to the standard grade-level assessments to target students with special needs. First, the alternate assessment may be used to report proficiency for up to 1% of students in a state. Second, new regulations permit the use of alternate assessments based on modified academic achievement standards to report proficiency for up to 2% of students in a state.

To ensure that these new tests generate results that allow valid inferences to be made about student performance, they must be accessible to as many people as possible. The Test Accessibility and Modification Inventory (TAMI)[87] and its companion evaluation tool, the Accessibility Rating Matrix (ARM), were designed to facilitate the evaluation of tests and test items with a focus on enhancing their accessibility. Both instruments incorporate the principles of accessibility theory and were guided by research on universal design, assessment accessibility, cognitive load theory, and research on item writing and test development. The TAMI is a non-commercial instrument that has been made available to all state assessment directors and testing companies. Assessment researchers have used the ARM to conduct accessibility reviews of state assessment items for several state departments of education.

See also

[edit]

- Accessible toilet
- Accessible tourism
- CEN/CENELEC Guide 6
- Computer accessibility
- Convenience
- Curb cut effect
- Design for All (in ICT)
- Disability flag
- Game accessibility
- Human factors and ergonomics
- Inclusive design
- Knowbility
- National Federation of the Blind v. Target Corporation
- Principles of Intelligent Urbanism
- Public transport accessibility level
- Section 504 of the Rehabilitation Act
- Section 508 Amendment to the Rehabilitation Act of 1973
- Timeline of disability rights in the United States
- Timeline of disability rights outside the United States
- Transgenerational design
- Transport divide

- Universal design for instruction
- Walkability
- Walking audit
- Walter Harris Callow, inventor of wheelchair accessible bus
- Wheelchair accessible van

References

[edit]

1. **^** *Henry, Shawn Lawton; Abou-Zahra, Shadi; Brewer, Judy (2014). The Role of Accessibility in a Universal Web. Proceeding W4A '14 Proceedings of the 11th Web for All Conference Article No. 17. ISBN 978-1-4503-2651-3. Retrieved 2014-12-17.*
2. **^** *"What is assistive technology?". washington.edu. Archived from the original on 2019-01-19. Retrieved 2018-07-02.*
3. **^** *"Federal Communications Commission". FCC on Telecommunications Accessibility for the Disabled. 1999.*
4. **^** *Goldberg, L. (1996). "Electronic Curbcuts: Equitable Access to the Future". Getty Center for the History of Art and the Humanities and the Getty Art History Information Program, Cyberspace/Public Space: The Role of Arts and Culture in Defining a Virtual Public Sphere. Archived from the original on April 27, 1999.*
5. **^** *Jacobs, S. (1999). "Section 255 of the Telecommunications Act of 1996: Fueling the Creation of New Electronic Curbcuts".*
6. **^** *Valdes, L. (2003). "Accessibility on the Internet".*
7. **^** *Brewer, J. "Access to the World Wide Web: Technical and Policy Aspects". In Preiser, W.; Ostroff, E. (eds.). Universal Design Handbook (1st ed.). New York: MacGraw-Hill.*
8. **^** *"Accessibility, Usability, and Inclusion". Web Accessibility Initiative. Retrieved 2020-07-05.*
9. **^** *"The Concept of Universal Design". udeworld.com. Archived from the original on 2018-07-04. Retrieved 2018-07-02.*
10. **^** *Lisney, Eleanor; Bowen, Jonathan P.; Hearn, Kirsten; Zedda, Maria (2013). "Museums and Technology: Being Inclusive Helps Accessibility for All". Curator: The Museum Journal. **56** (3): 353. doi:10.1111/cura.12034.*
11. **^** *Norberto Rocha, Jessica; Massarani, Luisa; de Abreu, Willian; Inacio, Gustavo; Molenzani, Aline (2020). "Investigating accessibility in Latin American science museums and centers". Annals of the Brazilian Academy of Sciences. **92** (1): e20191156. doi:10.1590/0001-3765202020191156. PMID 32321029.*
12. **^** *"Convention on the Rights of Persons with Disabilities (CRPD) | United Nations Enable". un.org. 14 May 2015. Retrieved 2018-07-02.*
13. **^** *"Accessibility Tools: When is a facility considered accessible?". fs.fed.us. Retrieved 2018-07-02.*
14. **^** *"Section508.gov | GSA Government-wide IT Accessibility Program". section508.gov. Retrieved 2018-07-02.*
15. **^** *"An Overview of the Americans With Disabilities Act | ADA National Network". adata.org. Retrieved 2018-07-02.*

16. ^ *"Home – United States Access Board". access-board.gov. Retrieved 2018-07-02.*
17. ^ *"JAN – Job Accommodation Network". askjan.org. Retrieved 2018-07-02.*
18. ^ *AG (July 2016). "Disability Discrimination Act 1992". legislation.gov.au. Retrieved 2018-07-02.*
19. ^ *"South Africa. Promotion of Equality and Prevention of Unfair Discrimination Act, 2000". ilo.org. Retrieved 2018-07-02.*
20. ^ *"Equality Act 2010: guidance". GOV.UK. Retrieved 2018-07-02.*
21. ^ *Ockersz, Lynn (8 November 2009). "Landmark Supreme Court ruling – A fillip for accessibility rights of disabled". Upali Newspapers – The Sunday Island. p. 17. Retrieved 2010-01-26.*
22. ^ *"Ikke tilgjengelig:Lov om forbud mot diskriminering på grunn av nedsatt funksjonsevne (diskriminerings- og tilgjengelighetsloven) – Lovdata". lovdata.no.*
23. ^ *"Lei Brasileira de Inclusão da Pessoa com Deficiência (Estatuto da Pessoa com Deficiência)". planalto.gov.br.*
24. ^ *"Canada's first federal accessibility legislation receives Royal Assent". Employment and Social Development Canada. 21 June 2019. Retrieved 18 September 2019.*
25. ^ *"About the AODA – Accessibility Ontario". accessontario.com. Retrieved 2018-07-02.*
26. ^ *"EU disability strategy 2010–20: access and rights". European Commission. Retrieved November 12, 2012.*
27. ^ *"European Accessibility Act: legislative initiative to improve accessibility of goods and services in the Internal Market" (PDF). European Commission. September 2012. Retrieved 13 June 2014.*
28. ^ *"European Accessibility Act proposed for 2012". Eurocities. Retrieved November 12, 2012.*
29. ^ *"What is Adaptive Technology? // ACT Center". actcenter.missouri.edu. Retrieved 2018-07-02.*
30. ^ *"HTML input autocomplete Attribute". w3schools.com. Retrieved 2018-07-02.*
31. ^ *"What is Occupational Therapy?". aota.org. Retrieved 2018-07-02.*
32. ^ *"Disability Employment Resources by Topic". U.S. Department of Labor – Office of Disability Employment Policy. Retrieved November 30, 2012.*
33. ^ *"Workers with a Disability Less Likely to be Employed, More Likely to Hold Jobs with Lower Earnings, Census Bureau Reports". United States Census Bureau Newsroom. Retrieved 30 April 2014.*
34. ^ ***a b*** *Kumar, Arun; Sonpal, Deepa; Hiranandani, Vanmala (2012). "Trapped Between Ableism And Neoliberalism: Critical Reflections On Disability And Employment In India". Disability Studies Quarterly.* ***32*** *(3): n.p. doi: 10.18061/dsq.v32i3.3235. Retrieved November 30, 2012.*
35. ^ *"Nearly two-thirds of global workforce in the 'informal' economy – UN study". UN News. 2018-04-30. Retrieved 2018-07-02.*
36. ^ ***a b*** *Geisen, Thomas; Henry George Harder (2011). Disability Management and Workplace Integration: International Research Findings. Gower Publishing. p. 165. ISBN 9781409418887.*

37. **^** *Dimond, Bridget C. (2009). Legal Aspects of Physiotherapy. John Wiley & Sons. pp. 263. ISBN 9781405176156.*
38. **^** *Dimond, Bridget C. (2011). Legal Aspects of Occupational Therapy. John Wiley & Sons. pp. n.p. ISBN 9781444348163.*
39. **^** *Disability Discrimination Act 1995: Code of Practice; Employment and Occupation . Disability Rights Commission. 2004. p. 5. ISBN 9780117034198.*
40. **^** *"What is BRT? – Institute for Transportation and Development Policy". Institute for Transportation and Development Policy. Retrieved 2018-07-02.*
41. **^** *"Community planning in the devolved UK". The Knowledge Exchange Blog. 2017-01-25. Retrieved 2018-07-02.*
42. **^** *"Local Transport Plan | PLYMOUTH.GOV.UK". plymouth.gov.uk. Archived from the original on 2018-07-02. Retrieved 2018-07-02.*
43. **^** Office of the Deputy Prime Minister – Social Exclusion Unit: "Making the Connections: Final Report on Transport and Social Exclusion Archived 2010-09-07 at the UK Government Web Archive". February 2003.
44. **^** Department of Transport & Transport Scotland: "Accessible Train and Station Design for Disabled People: A Code of Practice". July 2008.
45. **^** *"Railways Act 1993". legislation.gov.uk. Expert Participation. Retrieved 2018-07-02.*cite web: CS1 maint: others (link)
46. **^** *Topham, Gwyn (5 August 2021). "South Western Railway launches 10 minutes' notice assistance scheme". The Guardian. Archived from the original on 5 August 2021. Retrieved 5 August 2021.*
47. **^** *"Convention on the Rights of Persons with Disabilities". Office of the High Commissioner for Human Rights (OHCHR). 12 December 2006. Retrieved 30 October 2024.*
48. ^ ***a b*** *Lawson, Anna; EskytÄ—, Ieva; Orchard, Maria; Houtzager, Dick; De Vos, Edwin Luitzen (2022-06-26). "Pedestrians with Disabilities and Town and City Streets: From Shared to Inclusive Space?". The Journal of Public Space.* ***7*** *(2): 41–62. doi:10.32891/jps.v7i2.1603. ISSN 2206-9658.*
49. **^** Occupational therapy research on assistive technology and physical environmental issues: A literature review, Fange et al. (2006), Canadian Journal of Occupational Therapy
50. **^** Changes in accessibility and usability in housing: an exploration of the housing adaptation process (2005), Fange and Iwarsson, Occupational Therapy International
51. **^** Accessibility and usability in housing: construct validity and implications for research and practice (2003), Fange and Iwarsson, Disability and Rehabilitation
52. **^** *"Visitability | WBDG Whole Building Design Guide". wbdg.org. Retrieved 2018-07-02.*
53. **^** *"Accessible Home Design: Information & Ideas". Disabled World. Retrieved 2018-07-02.*
54. **^** *"Government data reveals 'accessible homes crisis' for disabled people". Home Care Insight. 13 July 2020. Retrieved 30 August 2020.*

55. ^ *"STA: Disabled take Slovenia to Human Rights Court over polling stations accessibility". english.sta.si. Retrieved 2020-01-14.*
56. ^ *"HUDOC – European Court of Human Rights". hudoc.echr.coe.int. Retrieved 2020-01-14.*
57. ^ *"Top European Court to Rule on Making All Polling Stations Accessible in Europe". Wheelchair Accessible Lifestyle. 2020-03-10. Retrieved 2020-03-15.*
58. ^ *"Better Web Browsing: Tips for Customizing Your Computer". World Wide Web Consortium.*
59. ^ *"Accessibility". Apple. Retrieved 2020-08-31.*
60. ^ *"Android accessibility overview – Android Accessibility Help". support.google.com . Retrieved 2020-08-31.*
61. ^ *"Accessibility Technology & Tools". Accessibility. Retrieved 2020-08-31.*
62. ^ *"Speech and Communication Disorders". National Institutes of Health. Archived from the original on September 21, 2008.*
63. ^ *"Hearing Disorders and Deafness". National Library of Medicine.*
64. ^ *"Visual Impairment and Blindness". National Library of Medicine.*
65. ^ *Forssman, S (1955). "Pre-employment and periodical health examinations, job analysis and placement of workers". Bulletin of the World Health Organization. **13** (4): 495–503. PMC 2538128. PMID 13276805.*
66. ^ *Clark, J. A.; Roemer, R. B. (April 1977). "Voice Operated Wheelchair". Arch Phys Med Rehabil. **58** (4): 169–75. PMID 849131.*
67. ^ *"Definition of hearing loss – Mild, Moderate, Severe & Profound - hear-it.org". Retrieved 2018-07-02.*
68. ^ *Kipp, Michael; Nguyen, Quan; Heloir, Alexis; Matthes, Silke (October 2011). "The proceedings of the 13th international ACM SIGACCESS conference on Computers and accessibility – ASSETS '11". Proceedings of the 13th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS-11). 13th ACM Sigaccess Conference on Computers and Accessibility. Dundee, Scotland: Association for Computing Machinery. pp. 107–114. doi:10.1145/2049536.2049557. ISBN 9781450309202.*
69. ^ *World Federation of the Deaf; World Association of Sign Language Interpreters (14 March 2018). WFD and WASLI Statement on Use of Signing Avatars (Report). p. 2. Retrieved 22 September 2020.*
70. ^ *"Deluxe Launches First Brazilian Sign Language (LIBRAS) Localization Service Outside Brazil". Cision PR Newswire. Deluxe Entertainment Services Group Inc. through Cision PR Newswire. 18 Sep 2017. Retrieved 14 Nov 2023.*
71. ^ *"Accessibility & The Audio Track File". Cinepedia. Retrieved 14 November 2023.*
72. ^ *"Speech Synthesis Markup Language (SSML) Version 1.0". w3.org.*
73. ^ *"Speech Recognition Grammar Specification Version 1.0". w3.org.*
74. ^ *"WAI Resources on Introducing Web Accessibility". Web Accessibility Initiative. W3C. Retrieved 18 June 2014.*
75. ^ Section 508: 508 Training.
76. ^ BS 8878:2010 Web accessibility – Code of Practice.
77. ^ ISO 30071-1.

78. ^ PAS 78 Archived 2015-07-03 at the Wayback Machine.
79. ^ BS 8878.
80. ^ BBC My Web My Way, BBC, UK.
81. ^ Example of an accessibility statement written by the lead-author of BS 8878.
82. ^ *"MCI asks all medical institutions to be 'accessible'". The Hindu. 18 April 2013. Retrieved 21 April 2013.*
83. ^ *"Making assessments accessible". Jisc. Retrieved 2020-08-17. "Accessibility must be considered from the outset when designing assessments, otherwise disabled learners could be unintentionally disadvantaged."*
84. ^ *Roelofs, Erik (2019), Veldkamp, Bernard P.; Sluijter, Cor (eds.), "A Framework for Improving the Accessibility of Assessment Tasks", Theoretical and Practical Advances in Computer-based Educational Measurement, Methodology of Educational Measurement and Assessment, Cham: Springer International Publishing, pp. 21–45, doi:10.1007/978-3-030-18480-3_2, ISBN 978-3-030-18480-3*
85. ^ *Klein, Alyson. "No Child Left Behind Overview: Definitions, Requirements, Criticisms, and More". Education Week. Bethesda MD: Editorial Projects in Education. ISSN 0277-4232. OCLC 07579948. Archived from the original on 2022-08-26. Retrieved 2018-07-02.*
86. ^ *"Executive Summary of the No Child Left Behind Act of 2001". www2.ed.gov. 2007-11-20. Retrieved 2018-07-02.*
87. ^ *"Peabody College of Education and Human Development | Vanderbilt University". Peabody.vanderbilt.edu. 2012-07-30. Archived from the original on 2011-09-27. Retrieved 2012-08-13.*

External links

[edit]

Wikimedia Commons has media related to ***Accessibility***.

- v
- t
- e

Disability

Main topics	○ Disability ○ Disability studies ○ Medical model ○ Social model

Approaches

- IEP
- Inclusion
- Learning disability
- Mainstreaming
- Physical therapy
  - driver rehabilitation
- Special needs
  - school
  - education

Rights, law, support

Rights

- Ableism/disablism
- Disability rights
- Pejorative terms
- Right to sit
  - United States
- Accessibility Act
  - NB
  - NL
  - NS

Law

- ABCA
- ACA
- AMA
- AODA
- ADA
- An Act to secure handicapped persons in the exercise of their rights
- Convention on the Rights of Persons with Disabilities
- Declaration on the Rights of Disabled Persons
- International Classification of Functioning, Disability and Health

Services

- Services for mental disorders
- Services for disabled people
- DLA
- ODSP
- Rail

Support

- SSDI
- SSI
- Students

Activist groups

- CNIB
- CCD
- DPI
- MINDS
- Reach Canada

Structural and assistive	○ Accessible toilet ○ Activities of daily living ○ Assistive technology ○ Curb cut ○ Independent living ○ Mobility aid ○ Orthotics and braces ○ Personal Care Assistant ○ Physical accessibility ○ Prosthetics ○ Redundant elevators ○ Universal design ○ Web accessibility
Social issues	○ Augmentative and alternative communication ○ Emotional or behavioral disability ○ Invisible disability ○ Disability and disasters ○ Disability and LGBT identities ○ Disability and religion ○ Disability and poverty ○ Disproportionality in special education ○ Sexuality and disability ○ Youth and disability
Disability studies	○ Models of disability ○ Inspiration porn ○ Bodymind ○ Crip as verb ○ Neuroqueer theory ○ Deaf studies ○ Eugenics ○ Anthropology ○ Geography ○ Education ○ Journals

Arts, media, culture, sport	○ Disability culture
	○ Disability art
	○ Disability in the arts
	  ○ Disability in children's literature
	  ○ Disability in horror films
	○ Disability in the media
	○ Parasports
	  ○ Deaflympics
	  ○ Paralympics
	  ○ Special Olympics

- Image not found or type unknown Category
- Image not found or type unknown Lists

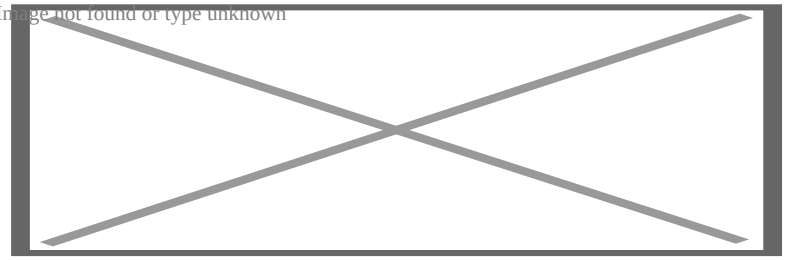
Authority control databases: National Image not found or type unknown **Edit this at Wikidata**

- Germany
- Czech Republic

About Sanitation

Not to be confused with Sanitization.

Image not found or type unknown



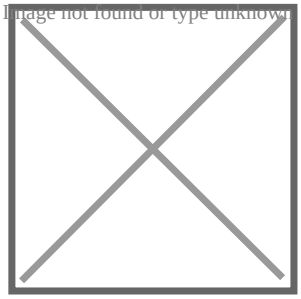
The sanitation system: collection, transport, treatment, disposal or reuse.

- v
- t
- e

Part of a series on

Public health

Image not found or type unknown



- Outline

Subfields

- Community health
- Dental public health
- Environmental health
- Epidemiology
- Health economics
- Health education
- Health promotion
- Health policy
- Health politics
- Mental health
- Occupational safety
- Rehabilitation (penology)
- Sexual and reproductive health
- Sanitation
- World health (Global health - International health)

Prevention

- Disease surveillance
- Harm reduction
- Health promotion (Behavior change)
- Health indicators
- Human right to water and sanitation
- Right to health
- Supervised injection site
- Universal health care

Lists and categories

- Terminology
- Journals
- National public health agencies

- Medicine portal
- Society portal

Sanitation refers to public health conditions related to clean drinking water and treatment and disposal of human excreta and sewage.[1] Preventing human contact with feces is part of sanitation, as is hand washing with soap. Sanitation systems aim to protect human health by providing a clean environment that will stop the transmission of disease, especially through the fecal–oral route.[2] For example, diarrhea, a main cause of malnutrition and stunted growth in children, can be reduced through adequate sanitation.[3] There are many other diseases which are easily transmitted in communities that have low levels of sanitation, such as ascariasis (a type of intestinal worm infection or helminthiasis), cholera, hepatitis, polio, schistosomiasis, and trachoma, to name just a

few.

A range of sanitation technologies and approaches exists. Some examples are community-led total sanitation, container-based sanitation, ecological sanitation, emergency sanitation, environmental sanitation, onsite sanitation and sustainable sanitation. A sanitation system includes the capture, storage, transport, treatment and disposal or reuse of human excreta and wastewater.[4] Reuse activities within the sanitation system may focus on the nutrients, water, energy or organic matter contained in excreta and wastewater. This is referred to as the "sanitation value chain" or "sanitation economy".[5][6] The people responsible for cleaning, maintaining, operating, or emptying a sanitation technology at any step of the sanitation chain are called "sanitation workers".[7]:â€Š2â€Š

Several sanitation "levels" are being used to compare sanitation service levels within countries or across countries.[8] The sanitation ladder defined by the Joint Monitoring Programme in 2016 starts at open defecation and moves upwards using the terms "unimproved", "limited", "basic", with the highest level being "safely managed".[8] This is particularly applicable to developing countries.

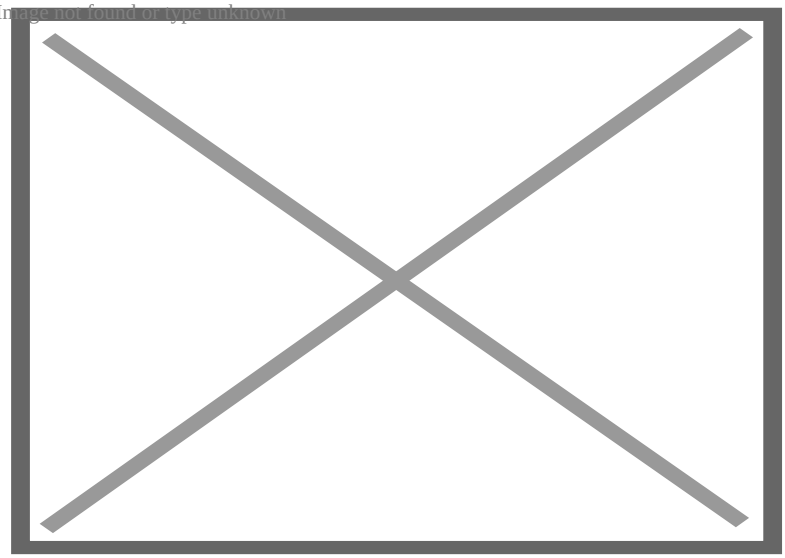
The Human right to water and sanitation was recognized by the United Nations General Assembly in 2010. Sanitation is a global development priority and the subject of Sustainable Development Goal 6.[9] The estimate in 2017 by JMP states that 4.5 billion people currently do not have safely managed sanitation.[9] Lack of access to sanitation has an impact not only on public health but also on human dignity and personal safety.

Definitions

[edit]

> Animated video to underline the importance of sanitation (here with a focus on toilets) on public health in developing countries

Image not found or type unknown



Urban improved sanitation facilities versus rural improved sanitation facilities, 2015.[10]

There are some variations on the use of the term "sanitation" between countries and organizations. The World Health Organization defines the term "sanitation" as follows:

> "Sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and faeces. The word 'sanitation' also refers to the maintenance of hygienic conditions, through services such as garbage collection and wastewater disposal."[11]

Sanitation includes all four of these technical and non-technical systems: Excreta management systems, wastewater management systems (included here are wastewater treatment plants), solid waste management systems as well as drainage systems for rainwater, also called stormwater drainage.[*citation needed*] However, many in the WASH sector only include excreta management in their definition of sanitation.

Another example of what is included in sanitation is found in the handbook by Sphere on "Humanitarian Charter and Minimum Standards in Humanitarian Response" which describes minimum standards in four "key response sectors" in humanitarian response situations. One of them is "Water Supply, Sanitation and Hygiene Promotion" (WASH) and it includes the following areas: Hygiene promotion, water supply, excreta management, vector control, solid waste management and WASH in disease outbreaks and healthcare settings.[12]:â€Š91â€Š

Hygiene promotion is seen by many as an integral part of sanitation. The Water Supply and Sanitation Collaborative Council defines sanitation as "The collection, transport, treatment and disposal or reuse of human excreta, domestic wastewater and solid waste, and associated hygiene promotion."[13]

Despite the fact that sanitation includes wastewater treatment, the two terms are often used side by side as "sanitation and wastewater management".

Another definition is in the DFID guidance manual on water supply and sanitation programmes from 1998:[14]

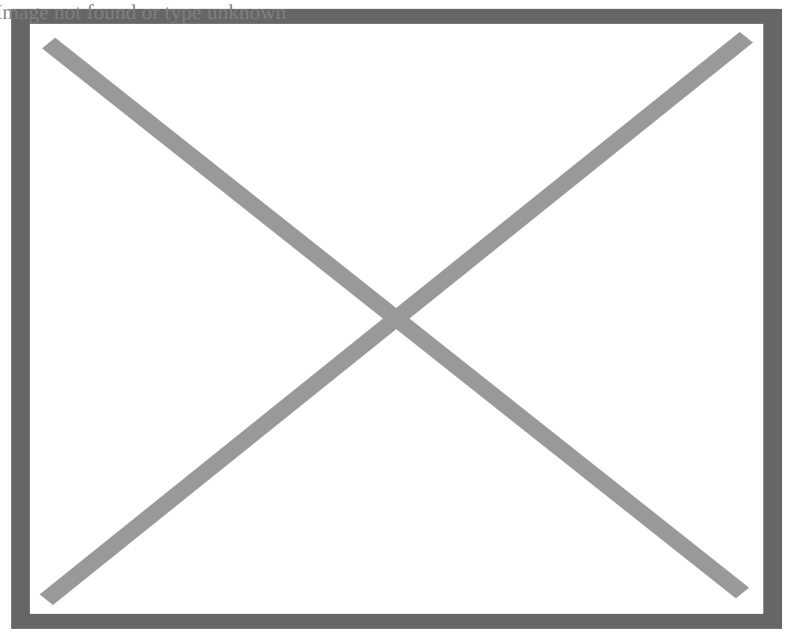
> "For the purposes of this manual, the word 'sanitation' alone is taken to mean the safe management of human excreta. It therefore includes both the 'hardware' (e.g. latrines and sewers) and the 'software' (regulation, hygiene promotion) needed to reduce faecal-oral disease transmission. It encompasses too the re-use and ultimate disposal of human excreta. The term environmental sanitation is used to cover the wider concept of controlling all the factors in the physical environment which may have deleterious impacts on human health and well-being. In developing countries, it normally includes drainage, solid waste management, and vector control, in addition to the activities covered by the definition of sanitation."

Sanitation can include personal sanitation and public hygiene. Personal sanitation work can include handling menstrual waste, cleaning household toilets, and managing household garbage. Public sanitation work can involve garbage collection, transfer and treatment (municipal solid waste management), cleaning drains, streets, schools, trains, public spaces, community toilets and public toilets, sewers, operating sewage treatment plants, etc.[15]:â€Š4â€Š Workers who provide these services for other people are called sanitation workers.

Purposes

[edit]

Image not found or type unknown



Access to safe drinking water and sanitation (2016)

The overall purposes of sanitation are to provide a healthy living environment for everyone, to protect the natural resources (such as surface water, groundwater, soil), and to provide safety, security and dignity for people when they defecate or urinate.[*citation need*

The Human Right to Water and Sanitation was recognized by the United Nations (UN) General Assembly in 2010.[16][17][18] It has been recognized in international law through human rights treaties, declarations and other standards. It is derived from the human right to an adequate standard of living.[19]

Effective sanitation systems provide barriers between excreta and humans in such a way as to break the disease transmission cycle (for example in the case of fecal-borne diseases).[20] This aspect is visualised with the F-diagram where all major routes of fecal-oral disease transmission begin with the letter F: feces, fingers, flies, fields, fluids, food.[21]

Sanitation infrastructure has to be adapted to several specific contexts including consumers' expectations and local resources available.[*citation needed*]

Sanitation technologies may involve centralized civil engineering structures like sewer systems, sewage treatment, surface runoff treatment and solid waste landfills. These structures are designed to treat wastewater and municipal solid waste. Sanitation technologies may also take the form of relatively simple onsite sanitation systems. This can in some cases consist of a simple pit latrine or other type of non-flush toilet for the excreta management part.

Providing sanitation to people requires attention to the entire system, not just focusing on technical aspects such as the toilet, fecal sludge management or the wastewater

treatment plant.[22] The "sanitation chain" involves the experience of the user, excreta and wastewater collection methods, transporting and treatment of waste, and reuse or disposal. All need to be thoroughly considered.[22]

Economic impacts

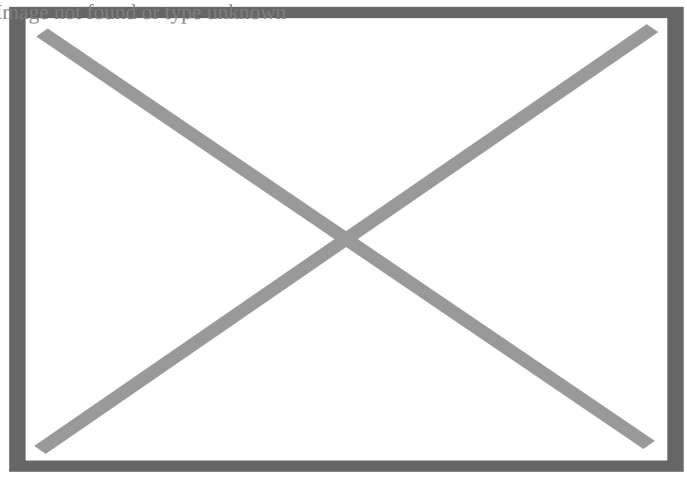
[edit]

The benefits to society of managing human excreta are considerable, for public health as well as for the environment. As a rough estimate: For every US$1 spent on sanitation, the return to society is US$5.50.[23]:â€Š2â€Š

For developing countries, the economic costs of inadequate sanitation is a huge concern. For example, according to a World Bank study, economic losses due to inadequate sanitation to The Indian economy are equivalent to 6.4% of its GDP.[24] Most of these are due to premature mortality, time lost in accessing, loss of productivity, additional costs for healthcare among others.[24] Inadequate sanitation also leads to loss from potential tourism revenue.[24] This study also found that impacts are disproportionately higher for the poor, women and children. Availability of toilet at home on the other hand, positively contributes to economic well-being of women as it leads to an increase in literacy and participation in labor force.[25]

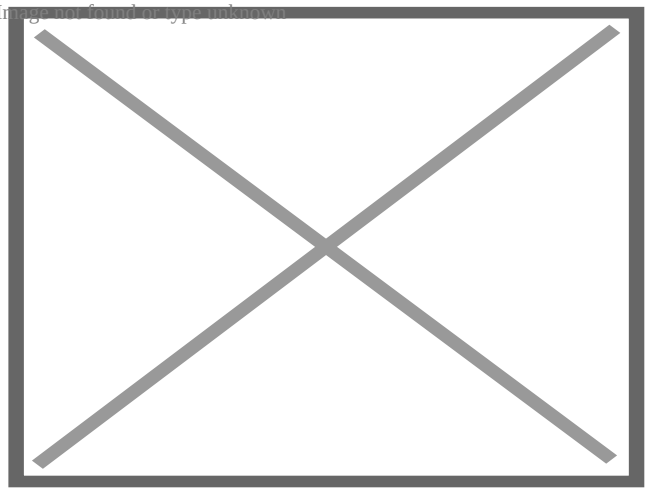
Types and concepts (for excreta management)

[edit]



Percentage of population served by different types of sanitation systems[26]

Image not found or type unknown



Example of sanitation infrastructure: Shower, double-vault urine-diverting dry toilet (UDDT) and waterless urinal in Lima, Peru

The term sanitation is connected with various descriptors or adjectives to signify certain types of sanitation systems (which may deal only with human excreta management or with the entire sanitation system, i.e. also greywater, stormwater and solid waste management) – in alphabetical order:

Basic sanitation

[edit]

In 2017, JMP defined a new term: "basic sanitation service". This is defined as the use of improved sanitation facilities that are not shared with other households. A lower level of service is now called "limited sanitation service" which refers to use of improved sanitation facilities that are shared between two or more households.[9]

Container-based sanitation

[edit]
This section is an excerpt from Container-based sanitation.[edit]
Container-based sanitation (abbreviated as CBS) refers to a sanitation system where toilets collect human excreta in sealable, removable containers (also called cartridges) that are transported to treatment facilities.[27] This type of sanitation involves a commercial service which provides certain types of portable toilets, and delivers empty containers when picking up full ones. The service transports and safely disposes of or reuses collected excreta. The cost of collection of excreta is usually borne by the users. With suitable development, support and functioning partnerships, CBS can be used to provide low-income urban populations with safe collection, transport and treatment of excrement at a lower cost than installing and maintaining sewers.[28] In most cases, CBS is based on the use of urine-diverting dry toilets.

Community-based sanitation

[edit]

Community-based sanitation is related to decentralized wastewater treatment (DEWATS).[*citation needed*]

Community-led total sanitation

[edit]

This section is an excerpt from Community-led total sanitation.[edit]

Dry sanitation

[edit]

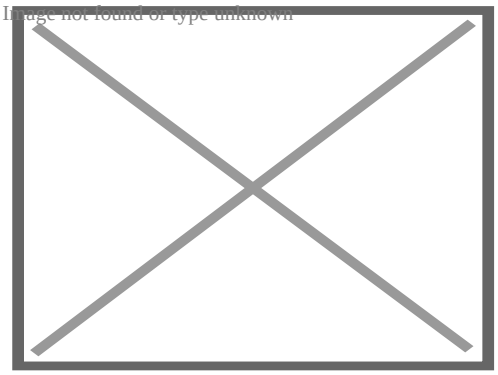
The term "dry sanitation" is not in widespread use and is not very well defined. It usually refers to a system that uses a type of dry toilet and no sewers to transport excreta. Often when people speak of "dry sanitation" they mean a sanitation system that uses urine-diverting dry toilet (UDDTs).[29][30]

Ecological sanitation

[edit]

This section is an excerpt from Ecological sanitation.[edit]
Ecological sanitation, commonly abbreviated as ecosan (also spelled eco-san or EcoSan), is an approach to sanitation provision which aims to safely reuse excreta in agriculture.[31] It is an approach, rather than a technology or a device which is characterized by a desire to "close the loop", mainly for the nutrients and organic matter between sanitation and agriculture in a safe manner. One of the aims is to minimise the use of non-renewable resources. When properly designed and operated, ecosan systems provide a hygienically safe system to convert human excreta into nutrients to be returned to the soil, and water to be returned to the land. Ecosan is also called resource-oriented sanitation.

Image not found or type unknown



Emergency pit lining kits by Evenproducts

Emergency sanitation

[edit]

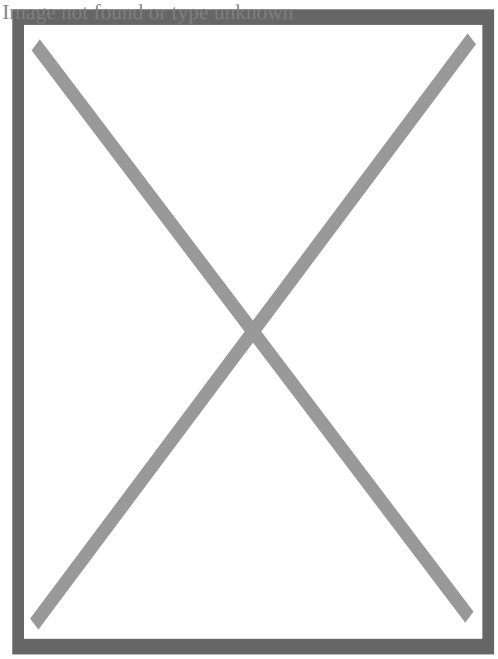
This section is an excerpt from Emergency sanitation.[edit]
Emergency sanitation is the management and technical processes required to provide sanitation in emergency situations. Emergency sanitation is required during humanitarian relief operations for refugees, people affected by natural disasters and internally displaced persons.[32] There are three phases of emergency response: Immediate, short term and long term.[32] In the immediate phase, the focus is on managing open defecation, and toilet technologies might include very basic latrines, pit latrines, bucket toilets, container-based toilets, chemical toilets. The short term phase might also involve technologies such as urine-diverting dry toilets, septic tanks, decentralized wastewater systems. Providing handwashing facilities and management of fecal sludge are also part of emergency sanitation.

Environmental sanitation

[edit]

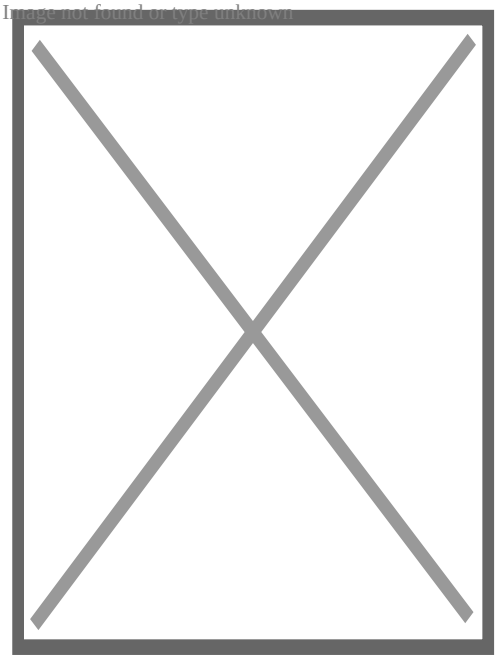
Environmental sanitation encompasses the control of environmental factors that are connected to disease transmission. Subsets of this category are solid waste management, water and wastewater treatment, industrial waste treatment and noise pollution control. According to World health organization (WHO) Environmental sanitation was defined as the control of all those factors in the physical environment which exercise a harmful effect on human being physical development, health and survival. One of the primary function of environmental sanitation is to protect public health.[*citation needed*]

Image not found or type unknown



Environmental sanitation by an NGO member

Image not found or type unknown



A clean exercise organized by an NGO

Fecal sludge management

[edit]

This section is an excerpt from Fecal sludge management.[edit]
Fecal sludge management (FSM) (or faecal sludge management in British English) is the storage, collection, transport, treatment and safe end use or disposal of fecal sludge.[33]
Together, the collection, transport, treatment and end use of fecal sludge constitute the

"value chain" or "service chain" of fecal sludge management. Fecal sludge is defined very broadly as what accumulates in onsite sanitation systems (e.g. pit latrines, septic tanks and container-based solutions) and specifically is not transported through a sewer. It is composed of human excreta, but also anything else that may go into an onsite containment technology, such as flushwater, cleansing materials (e.g. toilet paper and anal cleansing materials), menstrual hygiene products, grey water (i.e. bathing or kitchen water, including fats, oils and grease), and solid waste. Fecal sludge that is removed from septic tanks is called septage.

Improved and unimproved sanitation

[edit]

This section is an excerpt from Improved sanitation.[edit]
Improved sanitation (related to but distinct from a "safely managed sanitation service") is a term used to categorize types of sanitation for monitoring purposes. It refers to the management of human feces at the household level. The term was coined by the Joint Monitoring Program (JMP) for Water Supply and Sanitation of UNICEF and WHO in 2002 to help monitor the progress towards Goal Number 7 of the Millennium Development Goals (MDGs). The opposite of "improved sanitation" has been termed "unimproved sanitation" in the JMP definitions. The same terms are used to monitor progress towards Sustainable Development Goal 6 (Target 6.2, Indicator 6.2.1) from 2015 onwards.[34] Here, they are a component of the definition for "safely managed sanitation service".

Lack of sanitation

[edit]

Lack of sanitation refers to the absence of sanitation. In practical terms it usually means lack of toilets or lack of hygienic toilets that anybody would want to use voluntarily. The result of lack of sanitation is usually open defecation (and open urination but this is of less concern) with associated serious public health issues.[35] It is estimated that 2.4 billion people still lacked improved sanitation facilities including 660 million people who lack access to safe drinking water as of 2015.[36][37]

Onsite sanitation or non-sewered sanitation system

[edit]

Onsite sanitation (or on-site sanitation) is defined as "a sanitation system in which excreta and wastewater are collected and stored or treated on the plot where they are generated".[22]:â€Š173â€Š Another term that is used for the same system is non-sewered sanitation systems (NSSS), which are prevalent in many countries.[38] NSSS

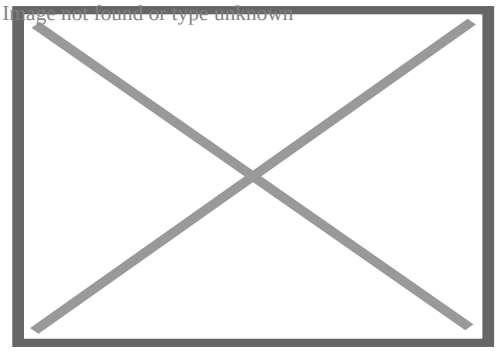
play a vital role in the safe management of fecal sludge, accounting for approximately half of all existing sanitation provisions.[38] The degree of treatment may be variable, from none to advanced. Examples are pit latrines (no treatment) and septic tanks (primary treatment of wastewater). On-site sanitation systems are often connected to fecal sludge management (FSM) systems where the fecal sludge that is generated onsite is treated at an offsite location. Wastewater (sewage) is only generated when piped water supply is available within the buildings or close to them.[*citation needed*]

A related term is a decentralized wastewater system which refers in particular to the wastewater part of on-site sanitation. Similarly, an onsite sewage facility can treat the wastewater generated locally.[*citation needed*]

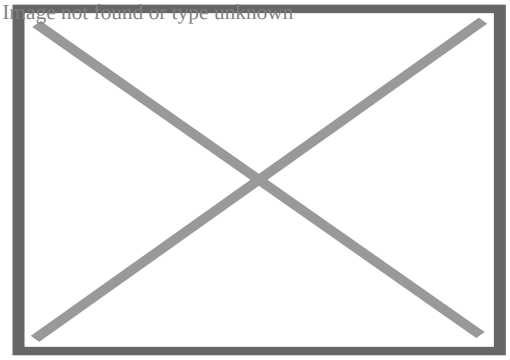
The global methane emissions from NSSS in 2020 was estimated to as 377 Mt CO2e per year or 4.7% of global anthropogenic methane emissions, which are comparable to the greenhouse gas emissions from wastewater treatment plants.[38] This means that the GHG emissions from the NSSS as a non-negligible source.[38]

Safely managed sanitation

[edit]



Share of population using safely managed sanitation facilities in 2022[39]



Number of handwashing facilities in the world, 2022

Safely managed sanitation is the highest level of household sanitation envisioned by the Sustainable Development Goal Number 6.[40] It is measured under the Sustainable

Development Goal 6.2, Indicator 6.2.1, as the "Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water".[41][9] The current value in the 2017 baseline estimate by JMP is that 4.5 billion people currently do not have safely managed sanitation.[9]

Safely managed sanitation is defined as an improved sanitation facility which is not shared with other households, and where the excreta produced is either treated and disposed in situ, stored temporarily and then emptied and transported to treatment off-site, or transported through a sewer with wastewater and then treated off-site.[41] In other words, safely managed sanitation is a basic sanitation service where in addition excreta are safely disposed of in situ or transported and treated offsite.[9]

Sustainable sanitation

[edit]

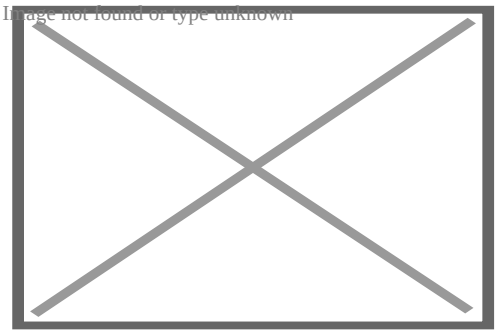
This section is an excerpt from Sustainable sanitation.[edit]
Sustainable sanitation is a sanitation system designed to meet certain criteria and to work well over the long-term. Sustainable sanitation systems consider the entire "sanitation value chain", from the experience of the user, excreta and wastewater collection methods, transportation or conveyance of waste, treatment, and reuse or disposal.[42] The Sustainable Sanitation Alliance (SuSanA) includes five features (or criteria) in its definition of "sustainable sanitation": Systems need to be economically and socially acceptable, technically and institutionally appropriate and protect the environment and natural resources.[43]

Other types, concepts and systems

[edit]

Wastewater management

[edit]
Main articles: Wastewater and Wastewater treatment



Sewage treatment plant, Australia.

Wastewater management consists of collection, wastewater treatment (be it municipal or industrial wastewater), disposal or reuse of treated wastewater. The latter is also referred to as water reclamation.[*citation needed*]

Sanitation systems in urban areas of developed countries usually consist of the collection of wastewater in gravity driven sewers, its treatment in wastewater treatment plants for reuse or disposal in rivers, lakes or the sea.[*citation needed*]

In developing countries most wastewater is still discharged untreated into the environment. Alternatives to centralized sewer systems include onsite sanitation, decentralized wastewater systems, dry toilets connected to fecal sludge management.

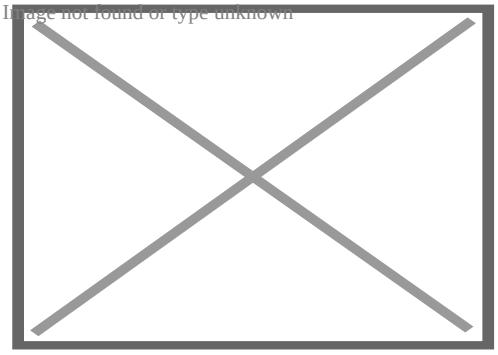
Stormwater drainage

[edit]
Main article: Storm drain

Sewers are either combined with storm drains or separated from them as sanitary sewers. Combined sewers are usually found in the central, older parts or urban areas. Heavy rainfall and inadequate maintenance can lead to combined sewer overflows or sanitary sewer overflows, i.e., more or less diluted raw sewage being discharged into the environment. Industries often discharge wastewater into municipal sewers, which can complicate wastewater treatment unless industries pre-treat their discharges.[44]

Solid waste disposal

[edit]
Main article: Waste management



Hiriya Landfill, Israel.

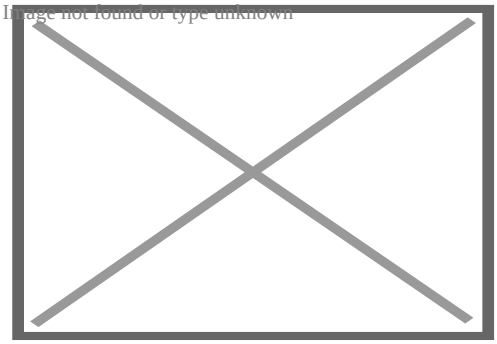
Disposal of solid waste is most commonly conducted in landfills, but incineration, recycling, composting and conversion to biofuels are also avenues. In the case of landfills, advanced countries typically have rigid protocols for daily cover with topsoil, where underdeveloped countries customarily rely upon less stringent protocols.[45] The

importance of daily cover lies in the reduction of vector contact and spreading of pathogens. Daily cover also minimizes odor emissions and reduces windblown litter. Likewise, developed countries typically have requirements for perimeter sealing of the landfill with clay-type soils to minimize migration of leachate that could contaminate groundwater (and hence jeopardize some drinking water supplies).

For incineration options, the release of air pollutants, including certain toxic components is an attendant adverse outcome. Recycling and biofuel conversion are the sustainable options that generally have superior lifecycle costs, particularly when total ecological consequences are considered.[46] Composting value will ultimately be limited by the market demand for compost product.[*citation needed*]

Food safety

[edit]



Modern restaurant food preparation area.

Main article: Food safety

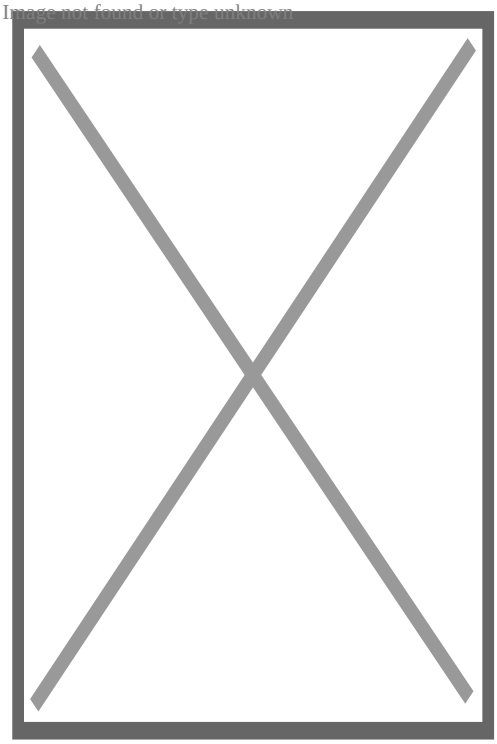
Sanitation within the food industry means the adequate treatment of food-contact surfaces by a process that is effective in destroying vegetative cells of microorganisms of public health significance, and in substantially reducing numbers of other undesirable microorganisms, but without adversely affecting the food or its safety for the consumer (U.S. Food and Drug Administration, Code of Federal Regulations, 21CFR110, USA). Sanitation Standard Operating Procedures are mandatory for food industries in United States. Similarly, in Japan, food hygiene has to be achieved through compliance with food sanitation law.[47]

In the food and biopharmaceutical industries, the term "sanitary equipment" means equipment that is fully cleanable using clean-in-place (CIP) and sterilization-in-place (SIP) procedures: that is fully drainable from cleaning solutions and other liquids. The design should have a minimum amount of deadleg, or areas where the turbulence during cleaning is insufficient to remove product deposits.[48] In general, to improve cleanability, this equipment is made from Stainless Steel 316L, (an alloy containing small

amounts of molybdenum). The surface is usually electropolished to an effective surface roughness of less than 0.5 micrometre to reduce the possibility of bacterial adhesion.

Hygiene promotion

[edit]
Further information: Hygiene



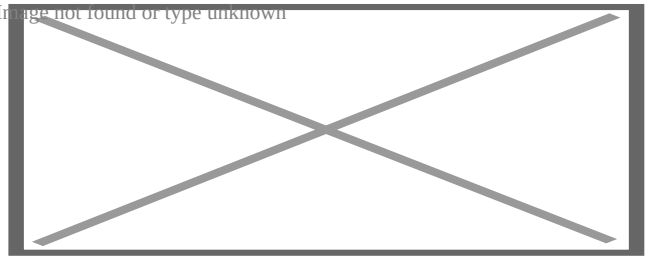
Hygiene education (on proper handwashing) in Afghanistan

In many settings, provision of sanitation facilities alone does not guarantee good health of the population. Studies have suggested that the impact of hygiene practices have as great an impact on sanitation related diseases as the actual provision of sanitation facilities. Hygiene promotion is therefore an important part of sanitation and is usually key in maintaining good health.[49]

Hygiene promotion is a planned approach of enabling people to act and change their behavior in an order to reduce and/or prevent incidences of water, sanitation and hygiene (WASH)[50] related diseases. It usually involves a participatory approach of engaging people to take responsibility of WASH services and infrastructure including its operation and maintenance. The three key elements of promoting hygiene are; mutual sharing of information and knowledge, the mobilization of affected communities and the provision of essential material and facilities.[12]

Health aspects

[edit]



The "F-diagram" (feces, fingers, flies, fields, fluids, food), showing pathways of fecal-oral disease transmission. The vertical blue lines show barriers: toilets, safe water, hygiene and handwashing.

A video shedding light on the unsafe and undignified working conditions of many sanitation workers in India

Main article: WASH § Health aspects

This section is an excerpt from WASH § WASH-attributable burden of diseases and injuries.[edit]

The WHO has investigated which proportion of death and disease worldwide can be attributed to insufficient WASH services. In their analysis they focus on the following four health outcomes: diarrhea, acute respiratory infections, malnutrition, and soil-transmitted Helminthiasis (STHs).[51]:â€Šviâ€Š These health outcomes are also included as an indicator for achieving Sustainable Development Goal 3 ("Good Health and Well-being"): Indicator 3.9.2 reports on the "mortality rate attributed to unsafe water, sanitation, and lack of hygiene".

In 2023, WHO summarized the available data with the following key findings: "In 2019, use of safe WASH services could have prevented the loss of at least 1.4 million lives and 74 million disability-adjusted life years (DALYs) from four health outcomes. This represents 2.5% of all deaths and 2.9% of all DALYs globally."[51]:â€Šviâ€Š Of the four health outcomes studied, it was diarrheal disease that had the most striking correlation, namely the highest number of "attributable burden of disease": over 1 million deaths and 55 million DALYs from diarrheal diseases were linked with lack of WASH. Of these deaths, 564,000 deaths were linked to unsafe sanitation in particular.

Environmental aspects

[edit]

Indicator organisms

[edit]

When analyzing environmental samples, various types of indicator organisms are used to check for fecal pollution of the sample. Commonly used indicators for bacteriological water analysis include the bacterium *Escherichia coli* (abbreviated as *E. coli)* and non-specific fecal coliforms. With regards to samples of soil, sewage sludge, biosolids or fecal matter from dry toilets, helminth eggs are a commonly used indicator. With helminth egg analysis, eggs are extracted from the sample after which a viability test is done to distinguish between viable and non viable eggs. The viable fraction of the helminth eggs in the sample is then counted.

Climate change

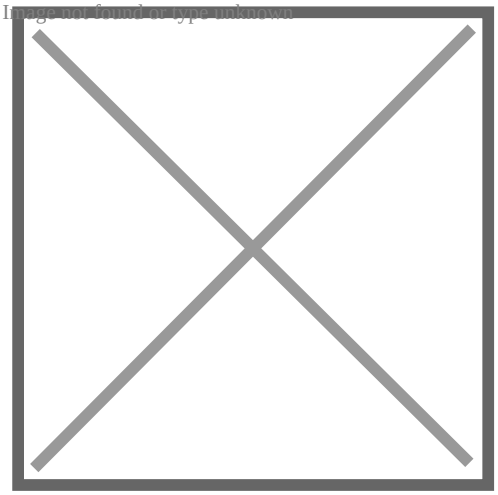
[edit]
Main article: WASH § Climate change aspects

Global mechanisms

[edit]

Sustainable Development Goal Number 6

[edit]
Further information: Sustainable Development Goal 6



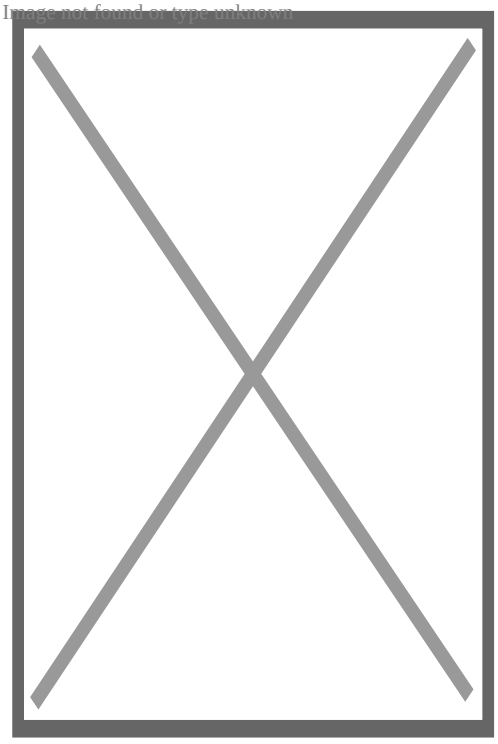
United Nations SDG 6 Logo

In the year 2016, the Sustainable Development Goals replaced the Millennium Development Goals. Sanitation is a global development priority and included Sustainable Development Goal 6 (SDG 6).[9] The target is about "clean water and sanitation for all" by 2030.[52] It is estimated that 660 million people still lacked access to safe drinking water as of 2015.[36][37]

Since the COVID-19 pandemic in 2020, the fight for clean water and sanitation is more important than ever. Handwashing is one of the most common prevention methods for Coronavirus, yet two out of five people do not have access to a hand-washing station.[53]

Millennium Development Goal Number 7 until 2015

[edit]



Example for lack of sanitation: Unhygienic pit latrine with ring slab in Kalibari community in Mymensingh, Bangladesh

The United Nations, during the Millennium Summit in New York in 2000 and the 2002 World Summit on Sustainable Development in Johannesburg, developed the Millennium Development Goals (MDGs) aimed at poverty eradication and sustainable development. The specific sanitation goal for the year 2015 was to reduce by half the number of people who had no access to potable water and sanitation in the baseline year of 1990. As the JMP and the United Nations Development Programme (UNDP) Human Development Report in 2006 has shown, progress meeting the MDG sanitation target is slow, with a large gap between the target coverage and the current reality.

Image not found or type unknown

Modified logo of International Year of Sanitation, used in the UN Drive to 2015 campaign logo

In December 2006, the United Nations General Assembly declared 2008 "The International Year of Sanitation", in recognition of the slow progress being made towards the MDGs sanitation target.[54] The year aimed to develop awareness and more actions to meet the target.

There are numerous reasons for this gap. A major one is that sanitation is rarely given political attention received by other topics despite its key importance. Sanitation is not high on the international development agenda, and projects such as those relating to water supply projects are emphasised.[55]

The Joint Monitoring Programme for Water Supply and Sanitation of WHO and UNICEF (JMP) has been publishing reports of updated estimates every two years on the use of various types of drinking-water sources and sanitation facilities at the national, regional and global levels. The JMP report for 2015 stated that:[36]

- Between 1990 and 2015, open defecation rates have decreased from 38% to 25% globally. Just under one billion people (946 million) still practise open defecation worldwide in 2015.
- 82% of the global urban population, and 51% of the rural population is using improved sanitation facilities in 2015, as per the JMP definition of "improved sanitation".[56]

Initiatives to promote sanitation

[edit]

In 2011 the Bill & Melinda Gates Foundation launched the "Reinvent the Toilet Challenge" to promote safer, more effective ways to treat human waste.[57] The program is aimed at developing technologies that might help bridge the global sanitation gap (for example the Omni Processor, or technology for fecal sludge management). In 2015, the Bill & Melinda Gates Foundation published their "Water, sanitation, and hygiene strategy portfolio update and overview" called "Building demand for sanitation".[58]

The latest innovations in the field of public health sanitation, currently in the testing phase, comprise - use of 'locally produced alcohol-based hand rub'; 'novel latrine improvement'; and 'container-based sanitation'. Centers for Disease Control and Prevention (CDC), the national public health agency of the United States has recognized the stated three initiatives.

Capacity development

[edit]

Capacity development is regarded as an important mechanism to achieve progress in the sanitation sector.[59] For example, in India the Sanitation Capacity Building platform (SCBP) was designed to "support and build the capacity of town/cities to plan and implement decentralized sanitation solutions" with funding by the Bill & Melinda Gates Foundation from 2015 to 2022.[60][61] Results from this project showed that capacity development best happens on the job and in a learning organization culture.[62] In a government capacity development initiative, it is critical to have an enabling policy and program funding to translate capacity development input into program and infrastructure outputs. Capacity development aims to empower staff and institutions, develop a learning strategy, learning content and training modules, as well as strengthened partnerships and institutions of learning.[62] The Capacity Development Effectiveness Ladder Framework (CDEL) identifies five critical steps for capacity development interventions: Developing original learning content, partnerships for learning and outreach, learning strategy, visioning change and designing solutions, contribution to capacity development discourse.[62][63]

Costs

[edit]

A study was carried out in 2018 to compare the lifecycle costs of full sanitation chain systems in developing cities of Africa and Asia. It found that conventional sewer systems are in most cases the most expensive sanitation options, followed, in order of cost, by sanitation systems comprising septic tanks, ventilated improved pit latrines (VIP), urine diversion dry toilets and pour-flush pit latrines.[64] The main determinants of urban sanitation financial costs include: Type of technology, labour, material and utility cost, density, topography, level of service provided by the sanitation system, soil condition, energy cost and others (distance to wastewater treatment facility, climate, end-use of treatment products, business models, water table height).[64]

Some grassroots organizations have trialled community-managed toilet blocks whose construction and maintenance costs can be covered by households. One study of Mumbai informal settlements found that US$1.58 per adult would be sufficient for

construction, and less than US$1/household/month would be sufficient for maintenance.[65]

History

[edit]

Further information: History of water supply and sanitation, Toilet § History, and History of waste management

Major human settlements could initially develop only where fresh surface water was plentiful, such as near rivers or natural springs. Throughout history people have devised systems to get water into their communities and households, and to dispose (and later also treat) wastewater.[66] The focus of sewage treatment at that time was on conveying raw sewage to a natural body of water, e.g. a river or ocean, where it would be diluted and dissipated.

The Sanitation in the Indus Valley Civilization in Asia is an example of public water supply and sanitation during the Bronze Age (3300–1300 BCE). Sanitation in ancient Rome was quite extensive. These systems consisted of stone and wooden drains to collect and remove wastewater from populated areas—see for instance the Cloaca Maxima into the River Tiber in Rome. The first sewers of ancient Rome were built between 800 and 735 BCE.[67]

By country

[edit]

- v
- t
- e

Water supply and sanitation by country

- Afghanistan
- Algeria
- Angola
- Argentina
- Australia
- Azerbaijan
- Bangladesh
- Belgium
- Belize
- Benin
- Bhutan
- Bolivia
- Bosnia and Herzegovina
- Brazil
- Burkina Faso
- Cambodia
- Canada
- Chile
- China
- Colombia
- Costa Rica
- Cuba
- Democratic Republic of the Congo
- Denmark
- Dominican Republic
- Ecuador
- Egypt
- El Salvador
- Ethiopia
- France
- Georgia
- Germany
- Ghana
- Greece
- Grenada
- Guatemala
- Guyana
- Haiti
- Honduras
- India
- Indonesia
- Iran
- Iraq
- Ireland
- Israel
- Italy
- Jamaica
- Japan
- Jordan

Society and culture

[edit]

There is a vast number of professions that are involved in the field of sanitation, for example on the technical and operations side: sanitation workers, waste collectors, sanitary engineers.

See also

[edit]

- List of abbreviations used in sanitation
- List of countries by proportion of the population using improved sanitation facilities
- List of water supply and sanitation by country
- Environmental health
- Water pollution
- Water security
- Self-supply of water and sanitation
- Sustainable Sanitation Alliance
- World Toilet Day

References

[edit]

1. **^** *"sanitation | Definition of sanitation in English by Oxford Dictionaries". Oxford Dictionaries | English. Archived from the original on November 17, 2017. Retrieved 2017-11-17.*
2. **^** SuSanA (2008). Towards more sustainable sanitation solutions Archived 2017-10-12 at the Wayback Machine. Sustainable Sanitation Alliance (SuSanA)
3. **^** *"Diarrhoeal disease". World Health Organization. Archived from the original on 2014-04-01. Retrieved 2017-11-17.*
4. **^** *Gates Foundation (2010). "Water Sanitation Hygiene Fact Sheet 2010" (PDF). Gates Foundation. Archived (PDF) from the original on 2020-10-21. Retrieved 2017-11-17.*
5. **^** *Paranipe, Nitin (19 September 2017). "The rise of the sanitation economy: how business can help solve a global crisis". Thomson Reuters Foundation News. Archived from the original on 29 December 2019. Retrieved November 13, 2017.*
6. **^** *Introducing the Sanitation Economy (PDF). Toilet Board Coalition. 2017. Archived (PDF) from the original on 2018-07-31. Retrieved 2017-12-19.*
7. **^** World Bank, ILO, WaterAid, and WHO (2019). Health, Safety and Dignity of Sanitation Workers: An Initial Assessment Archived 2022-12-11 at the Wayback Machine. World Bank, Washington, DC.
8. ^ ***a b*** *"Sanitation | JMP". washdata.org. Archived from the original on 2021-07-21. Retrieved 2017-11-17.*

9. ^ ***a b c d e f g*** WHO and UNICEF (2017) Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG Baselines Archived 2019-07-25 at the Wayback Machine. Geneva: World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), 2017
10. **^** *"Urban sanitation facilities vs. rural sanitation facilities". Our World in Data. Archived from the original on 19 September 2020. Retrieved 6 March 2020.*
11. **^** *"Sanitation". Health topics. World Health Organization. Archived from the original on 2020-06-06. Retrieved 2020-10-05.*
12. ^ ***a b*** Sphere Association (2018) The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response Archived 2019-05-12 at the Wayback Machine, fourth edition, Geneva, Switzerland, 2018.
13. **^** Evans, B., van der Voorden, C., Peal, A. (2009). Public Funding for Sanitation - The many faces of sanitation subsidies Archived 2017-10-11 at the Wayback Machine. Water Supply and Sanitation Collaborative Council (WSSCC), Geneva, Switzerland, p. 35
14. **^** WELL (1998) DFID guidance manual on water supply and sanitation programmes Archived 2022-01-20 at the Wayback Machine WELL Loughborough University UK
15. **^** PRIA (2019): Lived Realities of Women Sanitation Workers in India: Insights from a Participatory Research Conducted in Three Cities of India Archived 2022-12-11 at the Wayback Machine. Participatory Research in Asia, New Delhi, India
16. **^** *"General Assembly" (PDF). Archived (PDF) from the original on 2017-03-19. Retrieved 2019-11-25.*
17. **^** Human Rights Council resolution 15/9, *Human rights and access to safe drinking water and sanitation*, (6 October 2010), available from http://www.right2water.eu/sites/water/files/UNHRC%20Resolution%2015-9.pdf Archived 2017-05-17 at the Wayback Machine
18. **^** *"The human rights to safe drinking water and sanitation". Archived from the original (PDF) on 2017-08-25. Retrieved 2019-11-25.*
19. **^** Right to water and sanitation derive from the right to an adequate standard of living. http://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=10403&LangID= Archived 2022-03-06 at the Wayback Machine
20. **^** Thor Axel Stenström (2005) Breaking the sanitation barriers; WHO Guidelines for excreta use as a baseline for environmental health Archived 2008-11-22 at the Wayback Machine, Ecosan Conference, Durban, South Africa
21. **^** *Conant, Jeff (2005). Sanitation and Cleanliness for a Healthy Environment (PDF). Berkeley, California, USA: The Hesperian Foundation in collaboration with the United Nations Development Programme (UNDP), Sida. p. 6. Archived from the original (PDF) on 2014-10-21.*
22. ^ ***a b c*** Tilley, E., Ulrich, L., Lüthi, C., Reymond, Ph. and Zurbrügg, C. (2014). Compendium of Sanitation Systems and Technologies. 2nd Revised Edition Archived 2021-08-28 at the Wayback Machine. Swiss Federal Institute of Aquatic Science and Technology (Eawag), Duebendorf, Switzerland

23. **^** *WWAP (United Nations World Water Assessment Programme) (2017). The United Nations World Water Development Report 2017. Wastewater: The Untapped Resource. Paris. ISBN 978-92-3-100201-4. Archived from the original on 2017-04-08.*cite book: CS1 maint: location missing publisher (link)
24. ^ ***a b c*** *WSP (2011). The economic Impacts of Inadequate Sanitation in India. Water and Sanitation Programme, The World Bank.*
25. **^** *Gius, Mark; Subramanian, Ramesh (2015). "The Relationship between Inadequate Sanitation Facilities and the Economic Well-Being of Women in India". Journal of Economics and Development Studies.* ***3*** *(1). doi:10.15640/jeds.v3n1a2 (inactive 12 July 2025). ISSN 2334-2382.*cite journal: CS1 maint: DOI inactive as of July 2025 (link)
26. **^** *WWAP (United Nations World Water Assessment Programme) (2017). The United Nations World Water Development Report 2017. Wastewater: The Untapped Resource. Paris. ISBN 978-92-3-100201-4. Archived from the original on 2017-04-08.*cite book: CS1 maint: location missing publisher (link)
27. **^** *Tilmans, Sebastien; Russel, Kory; Sklar, Rachel; Page, Leah; Kramer, Sasha; Davis, Jennifer (2015-04-13). "Container-based sanitation: assessing costs and effectiveness of excreta management in Cap Haitien, Haiti". Environment and Urbanization.* ***27*** *(1): 89–104. Bibcode:2015EnUrb..27...89T. doi:10.1177/0956247815572746. PMC 4461065. PMID 26097288.*
28. **^** *Shepard, J.; Stevens, C.; Mikhael, G. (2017). The world can't wait for sewers; Advancing container-based sanitation businesses as a viable answer to the global sanitation crisis. EY, WSUP.*
29. **^** Platzer, C., Hoffmann, H., Ticona, E. (2008). Alternatives to waterborne sanitation – a comparative study – limits and potentials Archived 2017-10-09 at the Wayback Machine. IRC Symposium: Sanitation for the urban poor – partnerships and governance, Delft, The Netherlands
30. **^** Flores, A. (2010). *Towards sustainable sanitation: evaluating the sustainability of resource-oriented sanitation* Archived 2017-06-29 at the Wayback Machine. PhD Thesis, University of Cambridge, UK
31. **^** *GTZ, IWA (2003). Ecosan - closing the loop - Proceedings of the 2nd international symposium, 7th–11th April 2003, Lübeck, Germany. Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH and International Water Association (IWA).*
32. ^ ***a b*** *Harvey, Peter; et al. (2007). Excreta disposal in emergencies a field manual: an inter-agency publication. Loughborough: Loughborough university. Water, engineering and development centre (WEDC). p. 250. ISBN 978-1-84380-113-9.*
33. **^** *Velkushanova, Konstantina; Strande, Linda; Ronteltap, Mariska; Koottatep, Thammarat; Brdjanovic, Damir; Buckley, Chris, eds. (2021). Methods for Faecal Sludge Analysis. IWA Publishing. doi:10.2166/9781780409122. ISBN 978-1780409122.* Image not found or type unknown Text was copied from this source, which is available under a Creative Commons Attribution 4.0 International License.
34. **^** WHO and UNICEF (2017) Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG Baselines. Geneva: World Health Organization (WHO) and

the United Nations Children's Fund (UNICEF), 2017
35. **^** *Mara, Duncan (2017). "The elimination of open defecation and its adverse health effects: a moral imperative for governments and development professionals". Journal of Water Sanitation and Hygiene for Development. **7** (1): 1–12. Bibcode:2017JWSHD...7....1M. doi:10.2166/washdev.2017.027. ISSN 2043-9083. Archived from the original on 2018-06-21. Retrieved 2017-08-17.*
36. ^ ***a b c*** WHO and UNICEF *Progress on Sanitation and Drinking-water: 2015 Update Archived 2021-02-12 at the Wayback Machine*, WHO, Geneva and UNICEF, New York
37. ^ ***a b*** *European Investment Bank (2019). On Water. Publications Office. doi:10.2867/509830. ISBN 9789286143199. Archived from the original on 2020-11-29. Retrieved 2020-12-07.* cite book: |website= ignored (help)
38. ^ ***a b c d*** *Cheng, Shikun; Long, Jinyun; Evans, Barbara; Zhan, Zhe; Li, Tianxin; Chen, Cong; Mang, Heinz-Peter; Li, Zifu (2022). "Non-negligible greenhouse gas emissions from non-sewered sanitation systems: A meta-analysis". Environmental Research. **212** (Pt D): 113468. Bibcode:2022ER....21213468C. doi: 10.1016/j.envres.2022.113468. PMC 9227720. PMID 35597295.* Image not found or type unknown Text was copied from this source, which is available under a Creative Commons Attribution 4.0 International License Archived 2017-10-16 at the Wayback Machine
39. **^** Ritchie, Roser, Mispy, Ortiz-Ospina (2018) "Measuring progress towards the Sustainable Development Goals." (SDG 6) Archived 2020-11-01 at the Wayback Machine *SDG-Tracker.org, website*
40. **^** *"JMP - Sanitation". washdata.org. Joint Monitoring Programme of UNICEF and WHO. Archived from the original on 21 July 2021. Retrieved 25 February 2021.*
41. ^ ***a b*** *"Indicator 6.2.1 - Proportion of population using safely managed sanitation services, including a handwashing facility with soap and water". sdg6monitoring.org . UN Water. Archived from the original on 3 March 2021. Retrieved 25 February 2021.*
42. **^** Tilley, E., Ulrich, L., Lüthi, C., Reymond, Ph. and Zurbrügg, C. (2014). Compendium of Sanitation Systems and Technologies. 2nd Revised Edition. Swiss Federal Institute of Aquatic Science and Technology (Eawag), Duebendorf, Switzerland
43. **^** SuSanA (2008). Towards more sustainable sanitation solutions - SuSanA Vision Document. Sustainable Sanitation Alliance (SuSanA)
44. **^** *Environmental Biotechnology: Advancement in Water And Wastewater Application*, edited by Z. Ujang, IWA Proceedings, Malaysia (2003)
45. **^** George Tchobanoglous and Frank Kreith *Handbook of Solid Waste Management*, McGraw Hill (2002)
46. **^** William D. Robinson, *The Solid Waste Handbook: A Practical Guide*, John Wiley and sons (1986)
47. **^** *Japan External Trade Organization. "Food Sanitation Law in Japan" (PDF). Archived from the original (PDF) on 9 April 2008. Retrieved 1 March 2008.*
48. **^** Treatment of deadleg plumbing areas

49. **^** *Reed, Brian; Bevan, Jane (2014). Managing hygiene promotion in WASH programmes. Leicestershire, UK: Water, Engineering and Development Centre (WEDC), Loughborough University. ISBN 978-1-84380-168-9.*
50. **^** *"2021 water, sanitation and hygiene barometer" (PDF). SOLIDARITÉS INTERNATIONAL. 2021. Archived (PDF) from the original on 2021-03-25. Retrieved 2021-04-13.*
51. ^ ***a b*** WHO (2023) Burden of disease attributable to unsafe drinking-water, sanitation and hygiene, 2019 update. Geneva: World Health Organization; 2023. Licence: CC BY-NC-SA 3.0 IGO.
52. **^** *"Goal 6: Ensure access to water and sanitation for all". Archived from the original on 2019-04-16. Retrieved 2017-11-17.*
53. **^** *UN. "Water and Sanitation". United Nations Sustainable Development. Archived from the original on 2019-04-16. Retrieved 2021-01-04.*
54. **^** *Kurian, Mathew; McCarney, Patricia, eds. (2010). Peri-urban Water and Sanitation Services. Springer. doi:10.1007/978-90-481-9425-4. ISBN 978-90-481-9424-7. Archived from the original on 2022-12-11. Retrieved 2017-09-11.*
55. **^** *Abellán, Javier; Alonso, José Antonio (2022). "Promoting global access to water and sanitation: A supply and demand perspective". Water Resources and Economics.* ***38*** *100194. Bibcode:2022WRE....3800194A. doi:10.1016/j.wre.2022.100194. S2CID 246261266.*
56. **^** WHO and UNICEF types of improved drinking-water source on the JMP website, WHO, Geneva and UNICEF, New York, accessed on June 10, 2012
57. **^** BMGF (2012). Reinvent the Toilet Challenge Archived 2022-11-11 at the Wayback Machine (RTTC, Round 1 and 2), Grand Challenges Explorations (Round 6 and 7) - Request for proposals, grant conditions, Seattle exhibition fair program and exhibitor guide. Bill & Melinda Gates Foundation, Seattle, USA
58. **^** BMGF (2015). Building demand for sanitation - a 2015 portfolio update and overview - Water, sanitation, and hygiene strategy Archived 2022-11-12 at the Wayback Machine, June 2015. Bill & Melinda Gates Foundation, Seattle, Washington, USA
59. **^** Spuhler, D., McCreary, C., Fogde, M., Jenssen, P. D. (2012). Capacity development for sustainable sanitation - Factsheet of Working Group 1 Archived 2022-08-13 at the Wayback Machine. Sustainable Sanitation Alliance (SuSanA)
60. **^** *"About SCBP | SCBP". www.niua.org. Archived from the original on 2021-08-03. Retrieved 2021-06-09.*
61. **^** Kapur, D. (2020) UNDERSTANDING EFFECTIVENESS OF CAPACITY DEVELOPMENT: Lessons from Sanitation Capacity Building Platform, Part 1: Journey of Urban Sanitation Capacity Development in India Archived 2022-01-19 at the Wayback Machine, National Institute of Urban Affairs (NIUA), India
62. ^ ***a b c*** Kapur, D. (2021) UNDERSTANDING EFFECTIVENESS OF CAPACITY DEVELOPMENT : Lessons from Sanitation Capacity Building Platform (SCBP), Part III : Capacity Development Effectiveness Ladder (CDEL) Framework Archived 2022-01-20 at the Wayback Machine, NATIONAL INSTITUTE OF URBAN AFFAIRS, India

63. ^ Jyoti Dash and Depinder Kapur (2021) UNDERSTANDING EFFECTIVENESS OF CAPACITY DEVELOPMENT : Lessons from Sanitation Capacity Building Platform (SCBP) Part II : Sanitation Capacity Building Platform: Understanding the Process and Effectiveness Archived 2021-09-20 at the Wayback Machine
64. ^ ***a b*** *Daudey, Loïc (2018). "The cost of urban sanitation solutions: a literature review". Journal of Water Sanitation and Hygiene for Development.* ***8*** *(2): 176–195. Bibcode:2018JWSHD...8..176D. doi:10.2166/washdev.2017.058. ISSN 2043-9083.*
65. ^ *Patel, Sheela (2015-04-01). "The 20-year sanitation partnership of Mumbai and the Indian Alliance". Environment and Urbanization.* ***27*** *(1): 55–72. Bibcode:2015EnUrb..27...55P. doi:10.1177/0956247815569698. ISSN 0956-2478. S2CID 110444813.*
66. ^ *"The Art of Plumbing as Recorded through History". www.academia.edu. Archived from the original on 2020-04-09. Retrieved 2016-03-10.*
67. ^ Farnsworth Gray, Harold. "Sewerage in Ancient and Mediaeval Times." Sewage Works Journal Vol.12.5 (1940): 939–46

External links

[edit]

Image not found or type unknown

Look up ***sanitation*** in Wiktionary, the free dictionary.

Image not found or type unknown

- Media related to Sanitation at Wikimedia Commons
- Sustainable Sanitation Alliance
- Sanitation and Wastewater Atlas of Africa
- Florence Nightingale (1863), *Sanitary Statistics of Native Colonial Schools and Hospitals*

- v
- t
- e

Public health

- Auxology
- Biological hazard
- Chief medical officer
- Cultural competence
- Deviance
- Environmental health
- Eugenics
  - History of
  - Liberal
- Euthenics
- Genomics
- Globalization and disease
- Harm reduction
- Health economics
- Health literacy
- Health policy
  - Health system
  - Health care reform
- Housing First
- Human right to water and sanitation
- Management of depression
  - Public health law
  - National public health institute
- Health politics
- Labor rights
- Maternal health

General

- Medical anthropology
- Medical sociology
- Mental health (Ministers)
- Occupational safety and health
- Pharmaceutical policy
- Pollution
  - Air
  - Water
  - Soil
  - Radiation
  - Light
- Prisoners' rights
- Public health intervention
- Public health laboratory
- Right to food
- Right to health
- Right to a healthy environment
- Right to housing
- Right to rest and leisure
- Right to sit
- Security of person
- Sexual and reproductive health
- Social psychology

Preventive healthcare

- Behavior change
  - Theories
- Drug checking
- Family planning
- Harm reduction
- Health promotion
- Human nutrition
  - Healthy diet
  - Preventive nutrition
- Hygiene
  - Food safety
  - Hand washing
  - Infection control
  - Oral hygiene
- Needle and syringe programmes
- Occupational safety and health
  - Human factors and ergonomics
  - Hygiene
  - Controlled Drugs
  - Injury prevention
  - Medicine
  - Nursing
- Patient safety
  - Organization
- Pharmacovigilance
- Reagent testing
- Safe sex
- Sanitation
  - Emergency
  - Fecal–oral transmission
  - Open defecation
  - Sanitary sewer
  - Waterborne diseases
  - Worker
- School hygiene
- Smoking cessation
- Supervised injection site
- Vaccination
- Vector control

Population health	○ Biostatistics
	○ Child mortality
	○ Community health
	○ Epidemiology
	○ Global health
	○ Health impact assessment
	○ Health system
	○ Infant mortality
	○ Open-source healthcare software
	○ Multimorbidity
	○ Public health informatics
	○ Social determinants of health
	  ○ Commercial determinants of health
	  ○ Health equity
	  ○ Race and health
	○ Social medicine

Biological and epidemiological statistics	○ Case–control study
	○ Randomized controlled trial
	○ Relative risk
	○ Statistical hypothesis testing
	  ○ Analysis of variance (ANOVA)
	  ○ Regression analysis
	  ○ ROC curve
	  ○ Student's *t*-test
	  ○ *Z*-test
	○ Statistical software

Infectious and epidemic disease prevention	○ Asymptomatic carrier
	○ Epidemics
	  ○ List
	○ Notifiable diseases
	  ○ List
	○ Public health surveillance
	  ○ Disease surveillance
	○ Quarantine
	○ Sexually transmitted infection
	○ Social distancing
	○ Tropical disease
	○ Vaccine trial
	○ WASH

Food hygiene and safety management	○ Food ○ Additive ○ Chemistry ○ Engineering ○ Microbiology ○ Processing ○ Safety ○ Safety scandals ○ Good agricultural practice ○ Good manufacturing practice ○ HACCP ○ ISO 22000
Health behavioral sciences	○ Diffusion of innovations ○ Health belief model ○ Health communication ○ Health psychology ○ Positive deviance ○ PRECEDE–PROCEED model ○ Social cognitive theory ○ Social norms approach ○ Theory of planned behavior ○ Transtheoretical model

Organizations, education and history

Organizations

- Caribbean
  - Caribbean Public Health Agency
- China
  - Center for Disease Control and Prevention
- Europe
  - Centre for Disease Prevention and Control
  - Committee on the Environment, Public Health and Food Safety
- Russia
  - Rospotrebnadzor
- India
  - Ministry of Health and Family Welfare
- Canada
  - Health Canada
  - Public Health Agency
- U.S.
  - Centers for Disease Control and Prevention
  - Health departments in the United States
  - Council on Education for Public Health
  - Public Health Service
- World Health Organization
- World Toilet Organization
- (Full list)

Education

- Health education
- Higher education
  - Bachelor of Science in Public Health
  - Doctor of Public Health
  - Professional degrees of public health
  - Schools of public health

History

- History of public health in the United Kingdom
- History of public health in the United States
- History of public health in Australia
- Sara Josephine Baker
- Samuel Jay Crumbine
- Carl Rogers Darnall
- Joseph Lister
- Margaret Sanger
- John Snow
- Typhoid Mary
- Radium Girls
- Germ theory of disease
- Social hygiene movement

- Image not found or type unknown **Category**
- Image not found or type unknown **Commons**
- Image not found or type unknown **WikiProject**

Authority control databases	Image not found or type unknown Edit this at Wikidata
National	○ Germany ○ United States ○ Israel
Other	○ NARA ○ Yale LUX

Frequently Asked Questions

Are there any additional costs or hidden fees associated with renting portable toilets for festivals?

Yes, there are often additional costs or hidden fees that can include transportation to and from the event site, setup and breakdown labor, sanitation services, and potential late fees for delayed returns. Its important to clarify all potential costs upfront to avoid surprises.

Clean Restroom Rentals

Phone : +18889350009

Email : info@cleanrestrooms.com

City : Manassas

State : VA

Zip : 20111

Address : Historic District, 8193-B Euclid Ct

Google Business Profile

Company Website : **https://restroomrentalsvirginia.com/product/porta-potty-rental/**