A personal sanitation system for institutions (e.g., travel plazas, restaurants, retailers, hospitals, universities, hotels, schools, workplaces, other) and individuals that includes the ability to sanitize and protect self from spreading germs, infection and disease in public restrooms where individuals are in direct contact with shared toilet seats and other fixtures that must be touched to operate, by providing in-bathroom stall (or on wall, in case of urinals where no stall is available), flushable, cleaner-infused towels to wipe the toilet seat prior to sitting, and to wipe own hands with second towel prior to touching handle or button to flush the toilet, prior to touching door handle to exit the stall and prior to touching soap, water and paper towel dispenser handles. Towels may be dispensed via an institutional mounted holder method or a personal portable method by individuals for use in any shared restroom environment.
FIG. 1 Front View

Opening for Dispenser with Sealed Flap

Indented Area

Mounting back plate or adhesive strips

Sidewall

FIG. 1 Side View

Hinge

Front/Back Cover

Knob Latch

Instructions are on front side or as a separate self-adhesive sign adjacent to the unit on the stall wall.

Finish Face of Wall

3”

8-1/2”

3-1/2” 90mm
FIG. 2: Cleaner-Infused Towel (20)

Unfolded Towel

9.0"  6.4"

Folded Towel

3.75"  6.4"

Pull Tab (23)
FIG. 3:
Institutional Towel Soft-Pack for Towel Storage Container (30)
FIG. 4 Installation of Towel Holder / Storage Container
Enter bathroom stall and close door (55).

Place personal items on hook or shelf and see Towel Dispenser/ instructions (56).

Easily pull first towel (23) from dispenser.

Wipe seat (50) with first towel and discard in toilet.

Sit on toilet seat (50), complete activity as usual.

Stand, wipe self as usual, then pull second towel (23) to wipe hands and toss towel in toilet.

Is toilet seat clean?

Yes

Wipe toilet seat, if desired, prior to wiping hands (would require 3rd towel).

No

Flush toilet (after hands cleaned with towel).

Touch door handle of stall (with cleaner hands), and proceed to sink area.

For additional cleaning, dispense soap (if available), touch sink faucet handle and clean hands fully.

Exit Restroom

FIG. 5: Institutional Installation
Enter bathroom stall and close door (55).

Place personal items on hook or shelf and pull personal towel pack from purse or briefcase.

Easily dispense first towel (23) from personal towel pack and wipe toilet seat (50).

Discard first towel in toilet and sit on toilet seat, complete activity as usual.

After wiping self as usual, dispense 2nd towel from personal pack, and clean hands.

Toss second towel into toilet, and flush.

Return personal towel pack to purse or briefcase for storage.

Touch door handle of stall (with cleaner hands), and proceed to sink area to clean hands fully.

Exit Restroom

FIG. 6: Personal (Portable) Use
SYSTEM AND METHOD FOR PERSONAL SANITATION IN A PUBLIC, INSTITUTIONAL, SHARED RESTROOM ENVIRONMENT

FIELD OF THE INVENTION

[0001] The present invention relates generally to personal sanitation within public (and private) shared restrooms, and more specifically, to a method and system for individuals to clean restroom surfaces and fixtures before use, and cleaning own hands prior to coming in contact with subsequent touch points, thereby providing personal sanitation in a public, shared restroom environment.

BACKGROUND OF THE INVENTION

[0002] Sanitation in public restrooms is a recognized area of concern, but one that is inadequately addressed by prior art methods, as evidenced by the continually increasing prevalence, severity and duration of colds and diseases, enabled by the spreading of germs within public, shared restroom environments where individuals are most vulnerable to germs of others, where individuals, travelers, employees, university students, and school children come into contact with restroom surfaces in between cleanings that may occur as little as once a day.

[0003] A highly recognized sanitation device within public restrooms is the toilet seat cover. Examples are disclosed in U.S. Pat. No. 5,392,469-Adams (toilet seat cover) and U.S. Pat. No. 4,264,992 Tramp (toilet seat cover dispenser), whereby the toilet seat cover is constructed of a form of paper with an opening to the toilet closet. Toilet seat covers, in general, while providing a barrier between individuals and toilet seats, may protect, but not sanitize, and create the risk of dispersing existing urine residue across the toilet seat, thereby exposing the next user to greater risk when current user flushes toilet seat cover and the toilet seat is once again exposed.

[0004] In another prior art method, in limited locations, is the plastic sheathing surrounding the toilet seat that is automatically advanced on the toilet seat for each new user. An example is disclosed in U.S. Pat. No. 4,935,967-Cour. While this art method increases likelihood of use due to its automated nature, and also provides a barrier between individuals and toilet seats, technical issues may occur and cause the sheathing to not advance, and individuals may question the source/origin of the plastic sheathing (e.g., Did it advance? Is it the same sheet, recycled? Is it clean?). This prior art method may also be limited in use by institutions due to the required scope of installation, investment requirements, training and troubleshooting, if issues occur with the functionality.

[0005] Others, recognizing the shortcomings of these prior art methods, have proposed towelette dispensers and towelettes within bathroom stalls. Examples of this device in U.S. Pat. No. 5,462,197-Pound (towelette dispenser) and U.S. Pat. No. 4,735,317-Sussman, et al (pre-moistened towelette pack). While this method has greater potential, it is mounted in a single location, serves a single purpose, to wipe the toilet seat, and does not provide instruction for users. An embodiment of the present invention serves multiple purposes. Individuals are instructed to use a second towel to clean hands after toilet use, prior to touching the handle to flush the toilet and touching the door handle of the stall, and to also clean hands for non-toilet specific use, such as after changing a tampon or sanitary napkin, prior to touching the stall door handle.

[0006] In continued pursuit to address this sanitation issue, motion-activated water faucets at the sink area, are at times available. However, germs have already been transferred to the individual by touching the handle to flush the toilet and then touching the door handles when exiting the stall, prior to reaching sink area. The present invention, as a personal sanitation system, improves sanitation by enabling individuals to wipe hands prior to flushing and prior to touching the door handle and exiting the stall.

[0007] Prior art methods are often limited to a single purpose and location within the restroom stall, but individuals also require sanitation in many areas outside of the stall area. For example, urinals for men and baby diaper changing stations for parents that are not housed within bathroom stalls also require sanitation. The present invention provides for a towel holder to be mounted beside each of these non-stall, high-germ traffic areas with cleaner-infused towels to clean the surfaces and handles followed by cleaning of users’ hands.

[0008] Prior art methods, although providing some improvement, are limited in their impact, limited in use and limited in distribution due to the investment or installation requirements (e.g., hands-free hand dryers, automated water faucets, self-flushing toilets), thereby reducing the number of individuals who have access to these methods. The present invention is designed to be available and easy to install across diverse public, shared restroom environments.

[0009] Prior art methods generally have a single focus use (toilet seat or unspecified towel dispenser), single purpose (fixtures only), single location (in bathroom stall), and are non-portable (mounted on wall). Embodiments of the present invention seek to address the shortcomings of prior art methods by providing sanitation within public restrooms by creating a system (tools and instructions for use) and methods for broad distribution, to meet multiple uses (toilet seat, other surfaces), for multiple purposes (fixtures and individual’s own hands), for multiple locations (in-stall and outside of stall), and provide a portable alternative (personal portable packs) to address the sanitation crisis thereby improving sanitation, access to the sanitation system, and by providing the ability for individuals to personally control sanitation when in a public/shared restroom environment.

SUMMARY OF THE INVENTION

[0010] An objective of the present invention is to improve cleanliness and sanitation within public/shared restrooms to reduce the risk of spreading germs, infection and disease within bathroom stalls and in other areas of the restrooms where stalls are not provided (e.g., urinals, diaper changing stations, door to restroom facility).

[0011] Another objective of the present invention is to encourage installation of sanitation systems across a broader number of public/shared restroom locations (i.e., currently limited distribution of the automated fixtures that help to improve sanitation due to cost of production, distribution, and notable installation requirements).

[0012] A key objective of the present invention is to enable consumers, and instruct them, to clean the toilet surface themselves prior to their bodies ("seats") coming into contact with the toilet seat, and further, to enable consumers to use a second personal sanitizing cleaner-infused towel to clean
their hands prior to touching the handle to flush the toilet and prior to touching the door handle when exiting the stall.

[0013] Another objective of the present invention is to ensure access to this sanitation system by individuals in the event that the public/shared restroom institution fails to provide an alternate sanitation method. Individuals are at risk of spreading germs, infection or disease to others through continued use of the toilet seat by multiple individuals between cleanings where institutions do not adequately sanitize their restrooms.

[0014] A related objective of the present invention is for the institutions to replenish toilet holders with the soft pack of pre-bundled cleaner-infused towels during the same times and processes as when they replenish the toilet paper rolls, thereby minimizing the additional time and effort required to implement, while maximizing the sanitation within their restrooms.

[0015] The accompanying drawings are provided to illustrate how the preferred embodiment of the present invention can meet the aforementioned and related objectives. However, these drawings are for illustration purposes only, and may be updated during the development of the components of the present invention. Any changes, if made, will not affect the ability of the present invention to meet all specified claims and be true to the scope of the invention.

BRIEF DESCRIPTION OF DRAWINGS

[0016] FIG. 1 depicts an example of an execution of the towel holder/storage container for installation within stall and non-stall areas of public/shared restrooms.

[0017] FIG. 2 provides an example of the cleaner-infused towel in terms of size, shape and composition.

[0018] FIG. 3 depicts the towel soft-pack for placement/replenishment within toilet holder/storage container.

[0019] FIG. 4 provides an illustration of alternate placement of the towel holder/storage container within bathroom stalls and when in public (non-stall) areas.

[0020] FIG. 5 is a detailed block-flow diagram illustrating the preferred method for how individuals would implement the personal sanitation system within a public/shared restroom environment in accordance with institutional installation of the present invention.

[0021] FIG. 6 shows a detailed block-flow diagram illustrating the preferred method for how individuals would implement the personal sanitation system within a public/shared restroom environment in accordance with personal (portable) application of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0022] The present invention is a personal sanitation system that provides a system and method, with instructions, for individuals to clean the toilet seat prior to being seated and for cleaning their own hands after completing use of toilets in public and shared restroom environments. This personal sanitation system embodied in the present invention includes both institutional (wall-mounted) and portable (travel pack) methods for providing cleaner-infused towels to individuals to enable them to clean public restroom surfaces and their own hands.

[0023] Aspects of the present invention may be implemented in association with restrooms in which individuals are required to sit on toilet seats that are shared with others/the public (e.g., travel service plazas, restaurants, hotels, universities, movie theatres, public schools for children, airline lavatories, workplaces).

[0024] The present invention reduces the risk of transferring germs by improving sanitation before and after using the toilet (i.e., to clean toilet seat prior to being seated and to clean hands prior to touching the flush handle.) The present invention further improves sanitation and reduces the likelihood of personal waste matter spraying on floor and being carried out on shoe surfaces, as consumers are more likely to sit firmly on the toilet seat with confidence after they personally clean the toilet seat.

[0025] When individuals are preparing to leave the stall, they touch the handle of the door with a greater chance of clean hands. They approach the soap dispenser (often empty, without soap) with cleaner hands (important if no soap available), and the shared faucet handles are less likely to accumulate germs that are transferred to the next person (i.e., some sources are cited that up to one-third of individuals do not wash their hands after using the toilet, and those who do wash hands do so after germs have already been transferred within the bathroom stall handles and surfaces).

[0026] The availability of the present invention should also contribute to improved sanitation that can reduce the risk of exposure to germs that can contribute to diseases, such as MRSA, "mono" and meningitis, among others, affecting students/children in public schools, universities, workplaces and other public places.

[0027] The institutional method of the present invention utilizes existing bathroom stall infrastructure (wall or door) or existing wall area of non-stall locations for easy installation with wall mount or adhesive strips for easy removal or change in placement. The toilet holder/storage container will easily install without requiring significant hardware or cost and will use limited space. The second component, the portable method of the present invention, provides access through portable towel packs that can be carried in purse, briefcase, backpack or other.

[0028] FIG. 1 depicts an example of an execution of the towel holder/storage container for installation within stall and non-stall areas of public/shared restrooms. The architecture is a rectangular shape with rounded corners, sufficient in size to hold the needed quantity of towels and a depth that will easily fit within the stall (or on a wall) without interfering with the individuals' movement within the area.

[0029] Architecture within this illustration comprises a hinged top (42) at the front for ease of opening the towel storage container to insert a refill, and self-adhesive strips or mount (44) on the back of the dispenser for placement within a stall or on a wall (see FIG. 4).

[0030] Architecture also includes an opening (19) for dispensing the towels within an indented area (18) on the face of the holder that enables towels to protrude from the towel holder for individuals to grab for additional sanitation and moisture retention, and a clasp/lock at the bottom of the holder (13) to secure the lid after refilling and closing. Another key component provides instructions for use on holder front (17) either as an applied sticker or constructed within the plastic form, itself. An alternate method for providing instructions is in the form of a self-adhesive sign that is adhered to the wall adjacent to the towel holder.

[0031] FIG. 2 provides an example of the cleaner-infused towel. The towel (20) would be rectangular in shape, and
would be sized (21, 22), with a pre-cut one-inch pull tab (23), and pre-folded/formatted (24, 25) to fit within a soft-sided pack. The towels would be environmentally-friendly and flushable. The towels would be thick enough to hold the personal care cleaner, but thin enough for ease of flushing 2-3 along with toilet paper. The cleaner integrated within the towel may differ from a household cleaner product by taking the form of a personal care product, and rather than in a liquid format that may drip or lose moisture, will be more of a sanitation lotion or gel produced with the towel. The towel form and size assures functionality for toilet seats of varied shapes and sizes and will be of sufficient size to clean hands for men and women.

[0032] FIG. 3 depicts the towel soft-pack for placement/replenishment within the towel holder/storage container. The soft-pack (30) would be a size sufficient to hold pre-folded towels. The towels would be packaged in quantities that coincide with toilet tissue usage to enable those who replenish the toilet paper to also replenish the towel pack at the same time. The towels within the towel holder are self-contained within a soft-sided pack that can easily be inserted into the towel holder by raising the hinged front cover, closing and locking the holder. The attendant removes a protective strip to expose (and partially pull out) the first towel (for individual to grab hold of). The towels would be inter-folded for next-towel readiness. Depending upon traffic the number of individuals using the restroom in a given day, order quantities and frequency of ordering would be recommended. An alternate dispenser format will also be available as a portable personal sanitation system carried by individuals into a public/shared restroom environment. For peace of mind, individuals may purchase portable personal sanitation packs to carry in their purses, briefcases or backpacks. These portable packs will be similar in format to those used by institutions, but with a few differences. The soft-sided packs will be smaller in size to fit for carrying, and will include an opening from which to pull out towels, one at a time. This opening will be re-sealable for sanitation purposes.

[0033] FIG. 4 provides an illustration of alternate placement of the towel holder/storage container within bathroom stalls and when in public (non-stall) areas such as adjacent to urinals, baby changing stations and sink areas. The preferred installation of the towel holder is either on the back wall of the stall (54) or on the inside of the stall door (55). These placements are key to the system that provides instructions for use and must be readily visible prior to being seated on the toilet seat (50) (e.g., when closing stall door or facing back of stall prior to sitting). The instructions, if the sign (56) is chosen, would be placed adjacent to the towel holder for reference. In public areas where a stall is not provided, as in the case of urinals (51), the towel holder (10) may be mounted on the wall either between or adjacent to urinals or diaper changing tables (in highly visible area) to ensure awareness and to encourage use.

[0034] FIG. 5 is a detailed block-flow diagram illustrating the preferred method for how individuals would implement the personal sanitation system within a public/shared restroom environment in accordance with institutional installation of the present invention. To meet the objectives of the present invention, where institutions provide the towel holder and sanitation system, individuals modify their behavior slightly, but enhance sanitation significantly. Individuals enter the restroom stall and close the door (55). As usual, they would place their purse on the hook or shelf and will see the towel holder (10). Individuals quickly read the instructions (56) adjacent to the towel holder or on the holder, and pull the first towel (23) by its tab. The individual wipes the seat (50) with the towel (23) and discards towel into toilet. The individual sits on the toilet seat (50), completes activity as usual. Individual stands and pulls second towel (23) to wipe hands and tosses towel into toilet. Individual flushes toilet after touching handle with clean hands. Individual touches stall door handle to leave stall (with cleaner hands) (57) and proceeds to the sink area for additional cleaning, as needed (touching faucet with cleaner hands), and then exits restroom.

[0035] After an initial usage quantity, as institutions begin to offer the personal sanitation system within their restrooms, usage of the towels may be monitored to understand the re-stock/refill rate. For ease of execution by the institution, the dispenser can be replenished as part of the same procedure, process and by the same individual(s) who regularly monitor and replenish the toilet paper. The personal sanitation system becomes, in effect, an extension of replenishing toilet tissue, with similar frequency.

[0036] In another aspect of the present invention, individuals assess their needs and plans and identify their preferred dispenser pack formats and sizes (e.g., where to carry, when to use, quantity needed), for those who also prefer the portable pack(s). The dispenser pack and towel pack formats will be easy for institutions to store and replenish by restroom attendants.

[0037] FIG. 6 shows a detailed block-flow diagram illustrating the preferred method for how individuals would implement the personal sanitation system within a public/shared restroom environment in accordance with personal (portable) application of the present invention. This diagram is similar to FIG. 5 in terms of the main steps required, but are adapted to individuals who carry their own portable towel pack with them. Individuals enter the restroom stall and close the door behind them (55) and after securing personal items, pull their towel pack out of their purse, briefcase or backpack. The individual dispenses one towel (23) from the pack (60) and wipes toilet seat (50) prior to being seated. Individual drops used towel into the toilet and sits down. After rising and cleaning self, as usual, individual uses second towel (23) to clean hands. Individual tosses second towel into toilet and flushes. Individual resends portable towel pack (60), and returns it to its storage location for future use. Individual opens stall door (55) with door handle (57) with cleaner hands and proceeds to sink area.

[0038] Whether the personal sanitation system is provided by the institution or portable and carried by the individual, the towel packs, themselves, are flexible in use, and may be used by all institutions to meet their needs (e.g., re-sealable towel packs with or without dispenser, order quantity variance).

[0039] The present invention will also include a web-based user interface for placing new orders and tracking order history to facilitate the management of ordering and replenishing the cleaner-infused towels and replacement dispensers and self-adhesive strips for mounting. Users with proper authorization may access the user interface. The web enabled user interface may be served by a central user/administrator within a national or local institution or accessed as an individual user (portable personal sanitation system) through the same web homepage, but adapted web interface. The web interface may provide institutional and individual/personal users with product selection of alternate dispenser formats, color choices, and purchase quantities that meet the scope of
the present invention. The interface may provide an easy-order calculation guide that recommends quantities based upon expected usage by institution or individual and may provide emails to alert those ordering to review current inventory and re-order reminders. In addition, the user interface may include an order history to ease the re-order process (e.g., order same quantity vs. increase/decrease selections). The web interface may be distributed to local or national contact(s) to enable institutions to implement a customized ordering process that is most effective/efficient for them.

What is claimed and desired to be secured by United States Letters Patent is:

1. A personal sanitation system for individuals to clean surfaces within public, shared restroom environments prior to touching them, comprising:
   (01) a personal sanitation system that makes available a cleaner-infused towel to individuals, via multiple methods, to wipe the toilet seat prior to being seated and prior to touching other shared surfaces.
   (02) A system that includes cleaner-infused towels for individuals to also clean their hands after using toilet and prior to touching subsequent shared surfaces.

2. A personal sanitation system according to claim 1, wherein said system comprises a wall-mounted holder:
   (03) for bathroom stall and non-stall urinal and other public areas.
   (04) mounted beside or in place of toilet seat cover dispenser on back wall of stall to utilize existing space, alternatively mounted on back of stall door.
   (05) that enables clear visibility prior to being seated on toilet seat with holder molded in plastic in vibrant color (s) to ensure awareness and encourage use.

3. A personal sanitation system according to claim 1, wherein said system includes a personal care cleaner-infused towel, comprising:
   (07) a grasp tab to pull next cleaner-infused towel (interfolded).
   (08) a towel size appropriate and sufficient to wipe toilet seat surface (first towel use) and own hands (second towel use).
   (09) a cleaner that is safe to use on surfaces and own hands after completing use of toilet, prior to leaving stall and prior to coming into contact with other touch points (stall door handle, soap dispenser, water faucet, paper towel roller handle). Cleaner is made of a personal sanitizing solution rather than disinfectant or household utility cleaner.
   (10) a towel that can also be used for public sanitation purposes such as parents cleaning hands after changing baby’s diaper, and individual to clean hands after changing/removing sanitary napkins or tampons.

4. A personal care cleaner-infused towel according to claim 3, wherein said cleaner-infused towels can alternatively be contained within a portable towel pack for personal transport as alternative when not provided by institution, comprising:
   (11) a soft-sided pack with re-sealable lid.
   (12) a package size appropriate for carrying in purse, briefcase backpack or other transport method.
   (13) comparable towel size and cleaner-infused content according to claim 3.

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