Education:

Anaesthesia and IntensiveCare

Course 12

Study:

Test of the alternative Body Washing System BagBath®

How is the daily use of this product evaluated in an Surgical Intensive Unit at Westküstenklinikums Heide.

Project leader : Antje Schmidt, WKK Heide

Project support : Dr. Stefan Schröder (Manager OA and ICU)

Course leader : Katrin Blanck-Köster, DRK Nursing and Education Centre Schlump

Hamburg, June 2006

Thank you

For the active support and help during my project I would like to thank especially:

Mr. Dr. Stefan Schröder, Manager OA and ICU and he´s fantastic Team
Mrs. Dr. Anna Schweiger, Manager and head doctor for microbiological research
Mrs Ulla Kron - for product support
Mrs Anne Bartlog - for support, motivation and critics during the project.

Table of contents

Illustration listing

Table index

Abbreviation listing

ATL	activities of the daily life
WKK	Westküstenklinikkum
RL	Guidelines
SHT	head / cerebral trauma
LAE	Lunge arterial embolism
Staph. Epi	Staphylococcus epidermidis
E.coli	Escherichia coli
IMC	Intermediate care

Introduction

Patients on an intensive care unit are life-threateningly sick and require intensive care. To it belongs not only an extensive monitoring, but also the complete body hygiene of the patient. The body wash is a human basic need! This can rarely be done by the intensive patients by themselves. Therefore the execution of an "appropriate ' hygiene becomes the important task for the caregivers (Striebel, 2003," anaesthesia, intensive medicine, emergency medicine").
On the intensive care unit it is in the routine of the day as a firm component and is subject to exactly defined requirements. On the conversion of these requirements much time is spent. Time, which is frequently missing! For this reason the hygiene becomes often a "routine experienced" and "seldom individuel"!
The hygiene should be coordinated if possible with the needs of the patient!
Particularly thereby consideration is to be taken on their physical and psychological condition.

Always the state of health of the patient is the center of attention and in such a way should the goal and re-establishment of the output condition as well as the avoidance of further complications be.

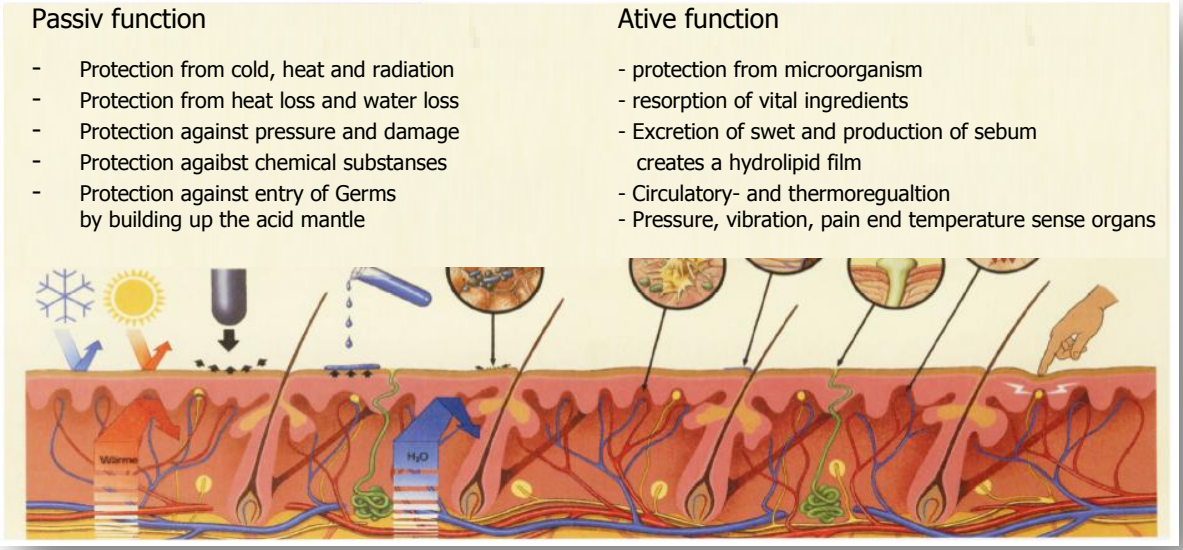
Which possibilities do caregivers on an intensive care unit have, under acute lack of time, to live up to all these requirements?

This question caused me to accomplish, in the context of my specialized further training anaesthesia and intensive care, a project in which the time is likewise an important aspect.
It concerns here the comparison of the conventional wash methods with the alternative - body wash system BagBath®.

This skilled work presents the results and their meaning in the following.

1. The functions of the skin and the necessity for the body wash

Why is the function of the skin so important for the health of the patients?
As a mirror of the health, the skin plays an important role in the patient observation. In consequence of its active and passive functions (Ill. 1) it is an important component of the human immune system. If the functions of the skin are "disturbed", even slight changes, within as well as outside of the organism, can involve heavy damage.
Primarily the skin functions as barrier between "inside -" and to "external world" of humans. The skin is the largest organ.



Ill. 1 The functions of the skin (occupations of welfare special, 2005, "structure and functions of the skin", S.10)

Indispensable for the vitality is apart from the gas exchange (carbon dioxide and oxygen) with the environment, the adjustment of the water and heat balance.

This stabilizes the body core temperature and promotes the cell co-operation of the skin. Nerve endings of the entire skin surface provide for a high sensitivity in relation to outside attractions, e.g. contact, cold and warmth.

The pH value of the acid protective shell of the skin (the acid mantle) offers the most important protection against micro organisms. This provides for an slight sour environment, in which survivability is minimized by bacteria.
If the skin functions of humans are weakened, the hygiene and care of the skin becomes more important, in order to keep the intact skin and/or to repair the operability of damaged skin.

Particularly intensive patients are loaded physically as also psychologically by their diseases. Often it is necessarily, e.g. over antibiotics - or also Cortisone therapy, to keep the immune system of the weakened bodies artificially "upright".
To keep the functions of the skin in the "natural" condition, hygiene of the body is needed as support.

2. Goals of the body hygiene

With the body hygiene of a healthy human the goal is cleaning of the skin from various dirt particles. It promotes concerning this its perception unconsciously, increases its well-being and defines its social status. In the case of an illness the body hygiene promotes not only the convalescence, but leads possibly also to the avoidance of further infections.

"a good quality of the hygiene is very important under intensive-medical criteria for different reasons: an appropriate hygiene for the preservation of an intact skin helps to repel bacteria and infections. Correct procedure with the hygiene should to a large extent also prevent infection. Finally good skin care helps to prevent also pressure ulcers." (interview Dr. Schroeder, 2006)

Among other things due to the increase of nosocomial infections in the last years in hospitals more than ever a maximum of hygiene authority is required. Beside the risen requirements in terms of the hygiene in the care the legal framework and the increased attention demand obligatory principles and yardsticks for quality and quality assurance by experts as well as public.

How now is this demand converted?
On the ICU stations hygiene is "practiced". That means, patients receive at least once within 24 hours a complete body wash. This covers the complete body, including mouth -, noses -, eyes -, ear and intimate care. If necessary also a further complete body wash can take place (e.g. after strong sweating, pollution or also for the therapeutic purpose of the fever lowering). To the partly body washes also counts the cleaning and care of face, shoulders, arms as well as hands. Additionally to it mouth and intimate care take place.
In the literature different possibilities of the a whole-body wash are pointed out. To ensure quality the WKK Heide has over the past years developed a guideline (RL), which is to be kept today as a defined standard and thus as instruction obligatory for the caregivers.

3. Execution of the body hygiene as per WKK guidelines

RL whole-body wash WKK Heide of 01.02.2004:
ATL: "itself washing and dress"
[... 1st objective?

- Well-being of the patient
- Preventing nosocomial infections
- Patient observation
- **Keep intact skin**
- Resources of the patient recognize and promote...]

[... 5th execution?

- Torsos uncover?
- Towel under those body parts which can be washed?
- Face, inclusively. Neck and ears wash (possibly without soap), immediately dry
- Arms and shoulder cave wash and dry
- Torsos wash, if necessary navel care?
- Back wash?
- Patients dress?
- Patients cover?
- Face-cloths and towel change?
- Legs wash, thoroughly dry?
- Individual skin care, if necessary Intertrigo prophylaxis

Intimacy care

- Water change?
- Change of towel and face-cloth?
- Take on gloves
  with the woman?
- Wash towards Anal area to avoid germs into the urethra
  with the man?
- Wash under the Scrotum and dry, foreskin withdraw, wash and dry, afterwards puss the foreskin back?
- Hygienic hand disinfection...]

4. The project

This project is to give information and to prove the body wash system BagBath® in contrast to the conventional wash method in the hospital everyday life. Among the valuation criteria also sensitive ranges rank beside the "hard facts", like product properties, e.g. the patient acceptance, the influence on the satisfaction of the caregiver and from it results on the working climate.

4.1 Course of project

Preparation

In preparation for the test run questionnaires was developed in co-operation with Dr. Schroeder and the company Karl Beese (GmbH & CO.), for a representative evaluation which represent the basis for the test evaluation. These cover washing of patients with BagBath®, washing of patients with conventional wash as well as micro-biological documentations (see. appendix). Since washing of patients is known as costly and time-intensive, the OI intensive care unit was selected. Additionally the question arises here whether the frequent occurrence of cross infections can be reduced by BagBath®.

Before beginning of the product testing all caregivers at the station were instructed in application and logging. The BagBath® samples were supplied by Karl Beese (GmbH & CO.). In arrangement with the hospital service -, stationmanagement and the responsible upper physician, the BagBath® washing started 01.11.2005.

Implementation of the project

From 01.11.2005 up to 30.11.2005 all patients on the OI station were washed with BagBath® and not with the conventional materials. During and/or after each washing a questioning (if possible) of the patients and caregivers took place, with questionnaires (s. appendix 1) and documented. From 01.12.2005 up to 31.12.2005 all patients were washed with “water and soap” as a conventional wash for the comparison.

5. What do we mean, when we speak of BagBath®?

Conventional washing with "water and soap" should be known by everyone. The individual steps for washing of patients can be known from the RL of the WKK. (s. chapter 3).
In 1992 a trained nurse Susan Skewes developed an alternative to the conventional washing process with water. Her goal was to find an innovative solution for the arising problems with the conventional wash by creating easements and free spaces for the caregivers and the patient.

In the year 1994 BagBath® was introduced in the USA as the first complete one-way body wash system on the market.

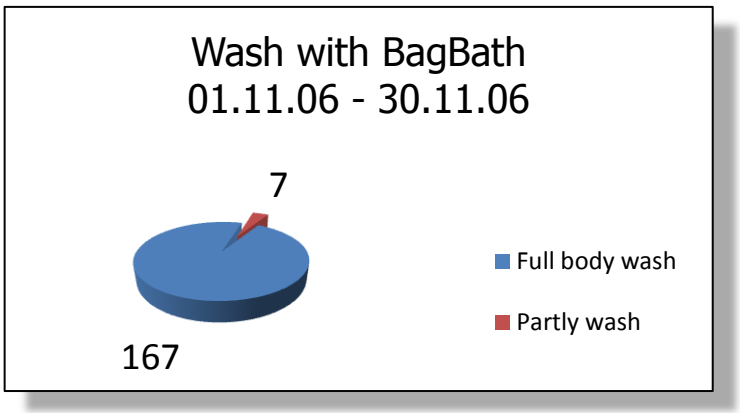
BagBath® should put hospitals and care centers into the position to improve the quality of the skin care of their patients and to save at the same time both time and money.

All this
without water
without soap
without face-cloths
without towels
without care lotion.

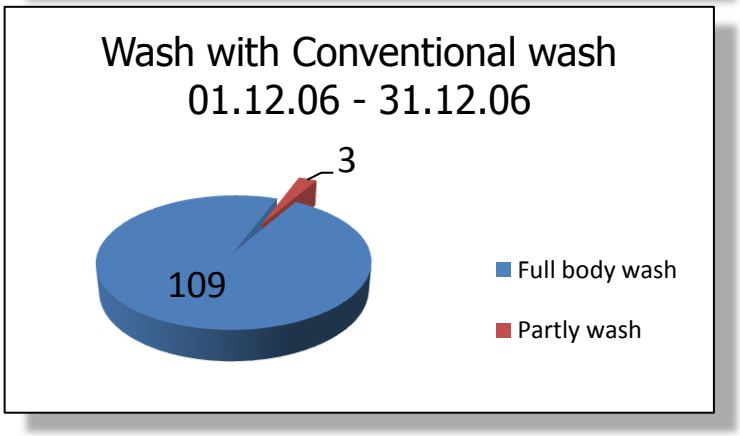
6. Base data of the project

The basis for the evaluation of the project form were 174 BagBath® washings and 112 washings with the conventional method (s. Ill. 2-3)
The difference in the sum of the body washing results from the variable allocation of patients on the station at the time of testing.

Ill. 2 - Number of washing with BagBath® during one period of 30 days



Ill. 3 - Number of washing with "water and soap" during the period of 31 days.



The questionnaires developed for this project are to give information over:
- the characteristics of the alternative product BagBath®
- the satisfaction of the caregivers regarding both wash methods
- the influence of the process cycle by BagBath® in the daily work
- the effect of the product on the patient feeling of hygiene situation
- the cost relationship of conventional washing versus BagBath®.

For the evaluation on the effect of BagBath® regarding cross infections, the partly body washes will not be measured.

7. Evaluation of the two wash methods

7.1 wash time

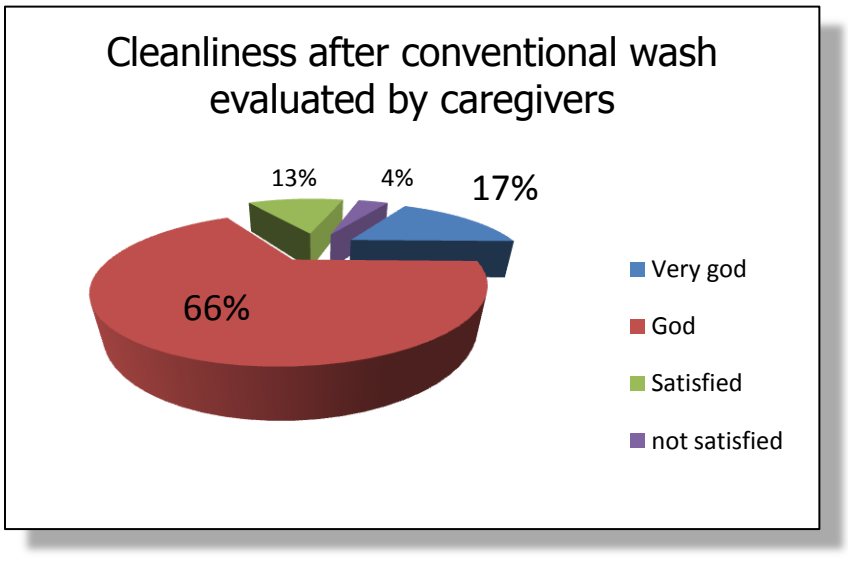
The time used by the caregiver includes the preparation (equipment), execution (washing and body care) as well as clearing (laundry change, clearing time) of the whole-body wash. This procedure took on the average 45 minutes with the conventional body wash. Since during washing with BagBath® the clearing time are essentially less or avoided, on the average 27 minutes were needed for washing.

The maximum spent time for conventional washing was 80 min (whereby the satisfaction with the wash result was only evaluated "satisfying") and for washing with BagBath® 45 min (comparatively here the satisfaction with "well" evaluated). These two cases were documented in connection with extreme contamination.

7.2 Cleanliness

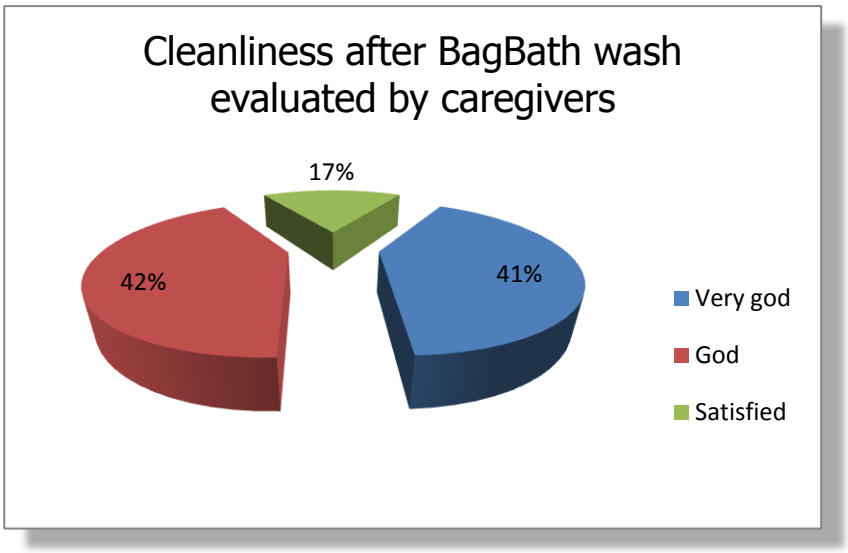
Cleanliness is to give a statement about how effectively the caregivers judge washing of the patients with "water and soap" and/or with BagBath®. (s. Ill. 4 - 5).

Ill. 4 - Evaluation of cleanliness after the conventional body wash.



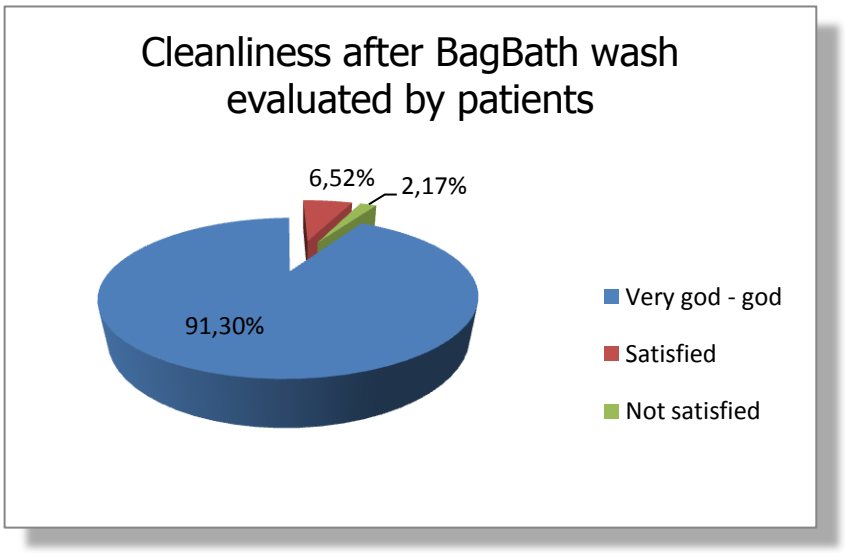
The result shows that after the conventional wash 83% of the patients are "clean", 13% with satisfying result and still 4% of the patients are contaminated.

Ill. 5 - Evaluation of cleanliness after washing with BagBath® evaluated by the caregivers



Also the achievement after washing with BagBath® was evaluated to 83% with "clean". However washing with BagBath® 41% was evaluated with "very well", while in contrast to that only 17% of the conventional washing obtained the same evaluation. This result permits the question, how much energy and knowledge the caregivers actually invested into the body washing? If one regards the goals of the hygiene and the associated effect on the convalescence, it is incomprehensible, with what reason a patient can be evaluated after washing with "more unsatisfactorily" cleanliness. Here is action needed, e.g. over training courses of the caregivers. Since the patients participating in testing only partly can judge their "actual" cleanliness due to their reduced state of health, they became instead asked about the cleanliness feeling. Too over 90% they felt the cleaning effect of BagBath® as "very well" and "well", as shown in the following diagram.

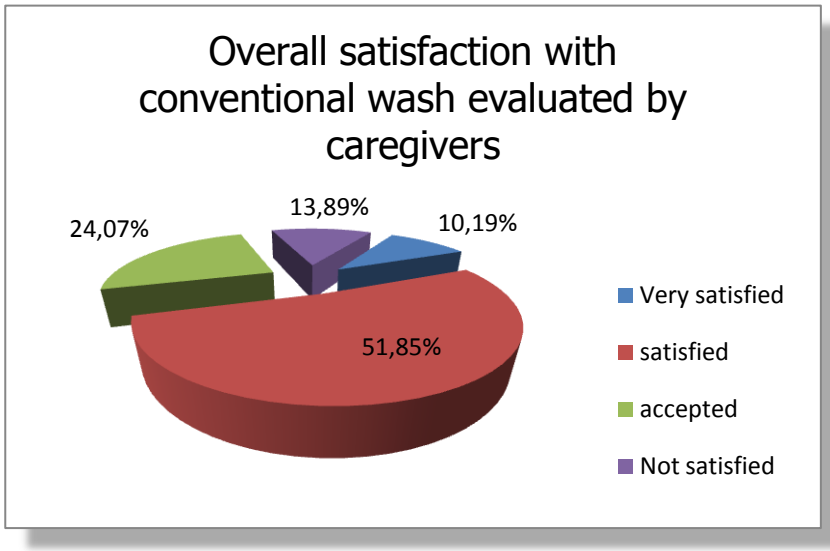
Ill. 6 - Evaluation of cleanliness after washing with BagBath® evaluated by the patients



7.3 Satisfaction of the caregivers

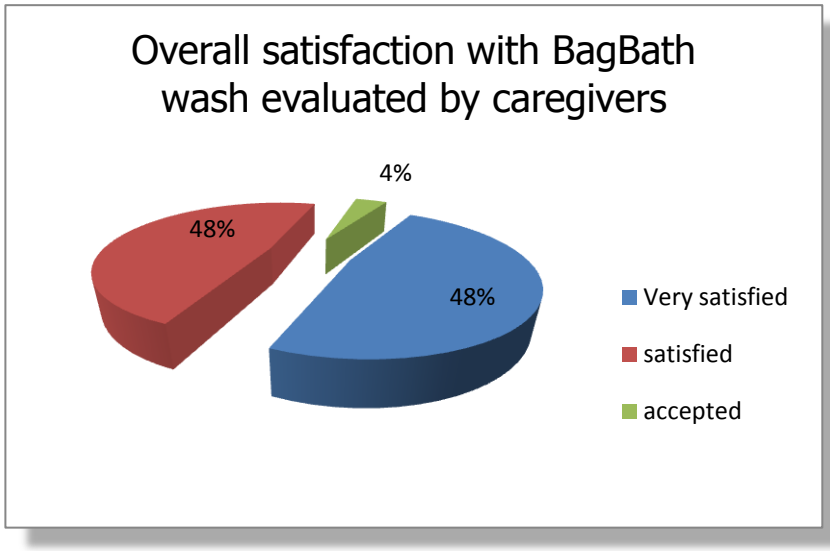
Compared with BagBath® the caregivers evaluated the overall satisfaction with the conventional washing as in Ill 7.

Ill. 7 the satisfaction of the caregivers regarding the conventional body wash



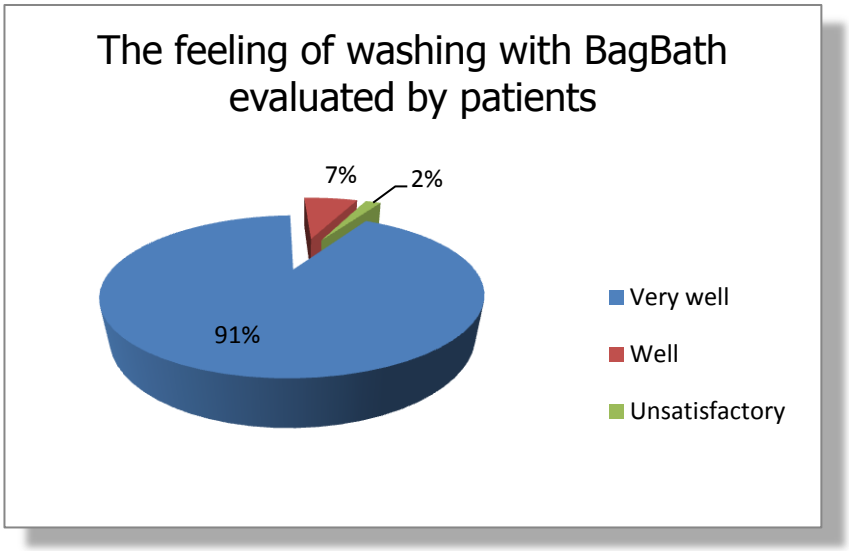
Over 50% of the caregivers are "satisfied" with this kind of the body washing and even 10% "very satisfied". The evaluation "content" and "unsatisfactorily" was justified among other things with the high expenditure and the time intensity. With this positive result of this kind of the body washing of patients, that have been practiced for years, the question arises, how satisfied the caregivers are with BagBath®?. While with the old established method 62% "were very satisfied" and "satisfied", the evaluation of the results resulted in the case of BagBath® in 96% in the same category!

Ill. 8 - Evaluation of the overall satisfaction with BagBath® by the caregivers



It is well-known that the satisfaction over own work also effects on the entire working climate. If the coworkers are content with what they carried out, this "tendency" is passed also to its surrounding field.
In this surrounding field are also the patients. If the caregivers are satisfied, they passed their satisfaction to the patients around them. They feel well and well cared.

Also from the patient side the satisfaction over BagBath® was evaluated as ("very well" to "well"). They felt the complete body wash as very pleasant. This becomes evident from the following diagram.



Ill. 9 - Evaluation of feeling during the wash with BagBath®. evaluated by the patients

7.4 Patient load

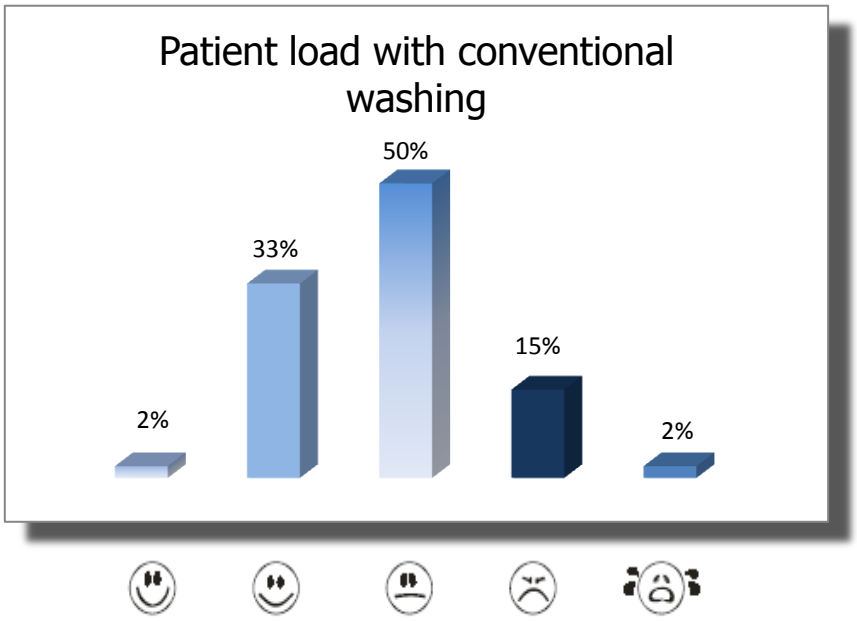
The loads of a patient, particularly in the acute phase, can lead to complications. These affect unfavorably the convalescence.

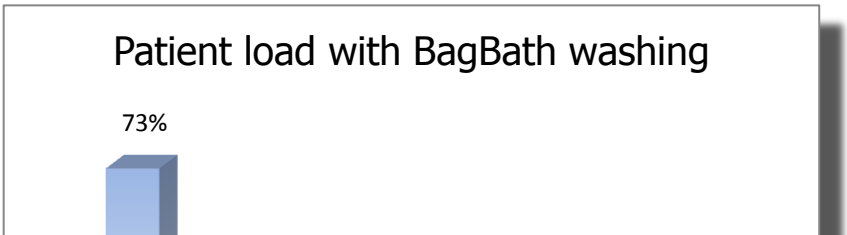
"Frequent relocating of patients from wet bedlinen in the context of the conventional hygiene with water, brings unnecessary risks for traumatized, newly operated and tubed patients. The use of BagBath surely means more careful washings that thereby favourably supports the convalescence ."
(interview Dr. Schroeder, 2006)

During the body washing with the conventional method, many turns and movements of the patient are done in the ICU center. The demanded changes of cloths, towels and laundry is not only hygienic but also connected with an additional load of the patients.

From the diagram pointed out below it follows that during washing with "water and soap" 17% of the patients felt a "strong" to "very strong" load (pain). 50% of the patients felt "moderate" to "tolerable" load and 35% described no load during the whole-body wash.

Ill. 10
Patient load during
Conventional washing





Ill. 11
Patient load during
BagBath® washing

During washing with BagBath® 99% of the washing did not cause "" an additional load for the patient. With only 1% of the washing a "moderate" load was determined.
This results that the patients by washing with BagBath® had substantially less load!
That means: Less pain and fewer complications.

7.4. Materials consumption

The materials consumption refers to the wash consumption, which is caused during the whole-body wash (s. table 1-3).

Glove	Single use wash cloth	towel	Headpillow cover small	Headpillow cover small	Quilt cover	shirt	sheet
329	23	265	37	154	110	109	105

Tabel 1 – Total consumption over 31 days with conventional washing

For average consumption per patient per washing the values can be inferred from the following overview:

Glove	Single use wash cloth	towel	Headpillow cover small	Headpillow cover small	Quilt cover	shirt	sheet
3	0,21	2,50	0,34	1,41	1,01	1	0,96

Tabel 2 – Average consumption per patient per wash with conventional washing

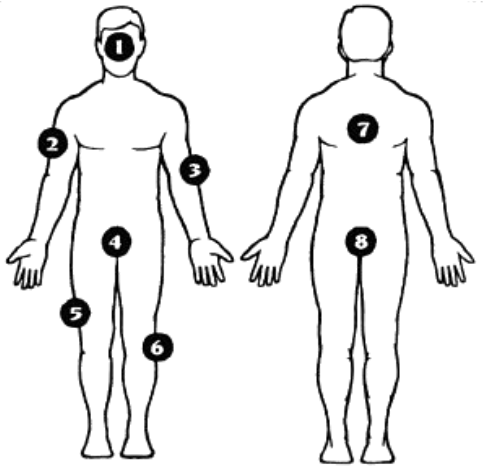
In the period of the BagBath® testing the following materials were used:

BagBath cloths	Glove	Single use wash cloth	towel	Headpillow cover small	Headpillow cover small	Quilt cover	shirt	sheet
1.308	10	0	0	10	16	10	16	16

Tabel 3 – Total consumption over 30 days with BagBath washing

The materials consumption during the use of BagBath®, is substantially less than with the conventional wash method. This results mostly from the fact that BagBath® does not lose a liquid, which is the case with water, and that with BagBath® one cloth is available for each body region (s. Ill. 12).

Ill. 12
8 BagBath cloths
One for each region



BagBath® offers substantial advantages in connection with the materials consumption by the fact that before beginning of the wash no materials need to be looked for, during the wash no additional cloths or towels must be used (due to drying and cleaning effect of BagBath®) as well as the use of care lotion are avoided.
If these data are transmitted now to the hygiene cost situation to the ICU station, we receive the results listed in the following chapter.

7.5 Costs

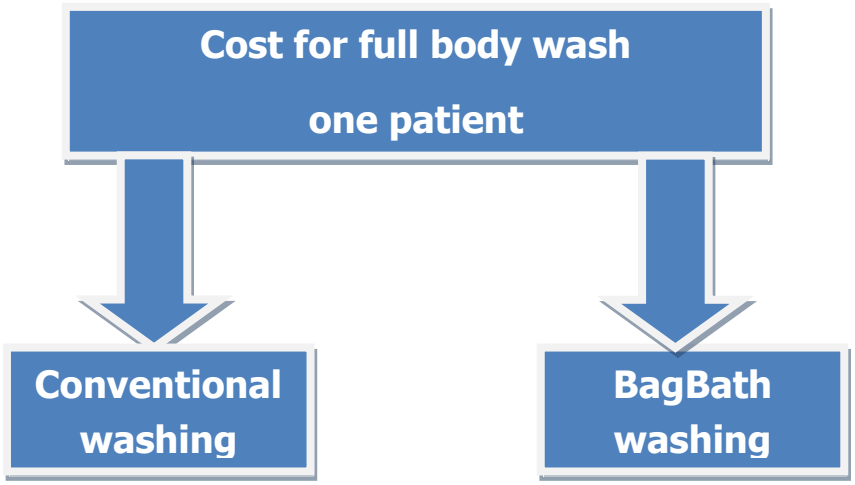
For the hospital the cost optimization is a goal, and necessary for survival for every other enterprise, also. In the today's time "one searches ' again and again for cost saving potentials.

Therefore the question arises, which costs is caused by the conventional wash per patient and how far can the use of BagBath® affect this situation? For the keeping of the data security in the sense WKK Heide, we cannot in this section refer to the price per unit.

For the collection of the costs the following expenditures were integrated:

- materials consumption per patient (s. table 2/3, S. 19/20)
- consumption of wash and care lotions
- consumption at water and energy (water change during the washing, sterilization costs per wash dish)
- time expenditure of the washing

From the evaluations is given a summary of the following average costs of a complete body wash:

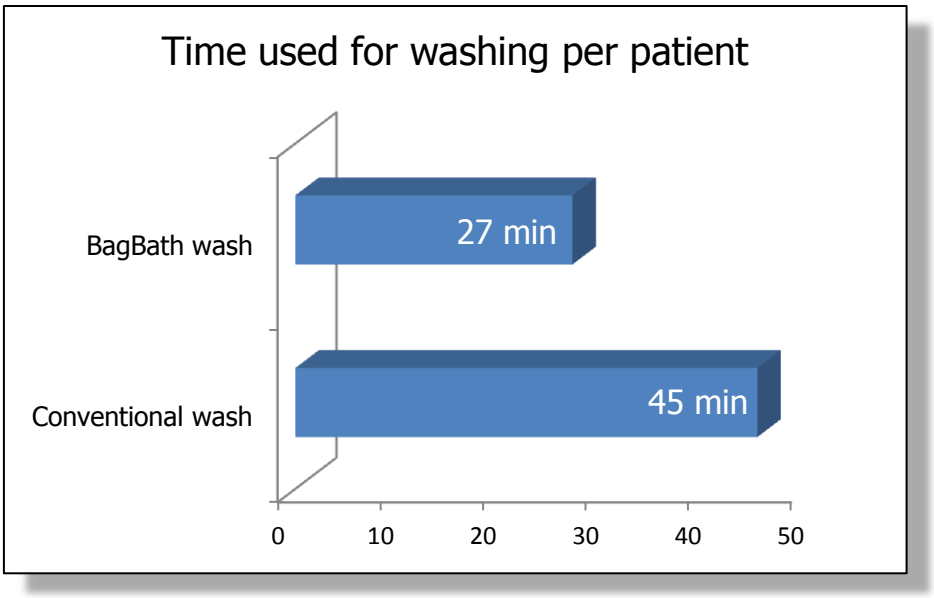


Average 7,206 € / washing

Average 0,437 € / washing + price of one pouch of BagBath

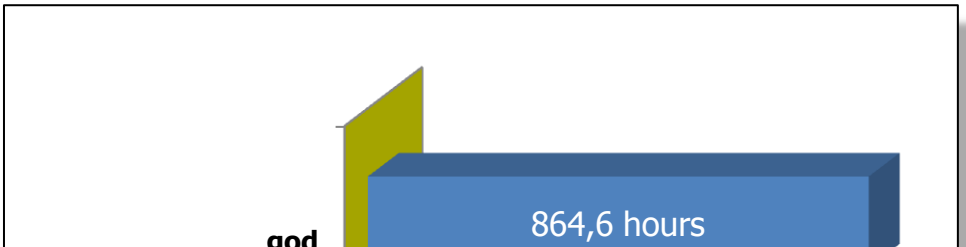
The price of a packing BagBath® is naturally a negotiation and in particular dependent on the purchased quantities.
But even with a packing price of € 6,769 and the work time saving the use of BagBath® would count for itself!
This advantage of BagBath® in relation to the conventional wash method becomes clear in the following overview:

Ill. 13 Time used for conventional washing and for BagBath washing



The average wash time amounts to 45 min with the conventional kind of washing and 27 min with the use of BagBath®.
On the year estimate and with consideration of the average patient allocation, which received a complete body wash in the test phase, arises in the case of the confrontation of both methods a difference of 577 hours/year!

The time that was "taken away ' from the care of the patient, by hospital savings in the amount of staff, can be returned again. Care and attention means fulfillment of the patient needs and quality.

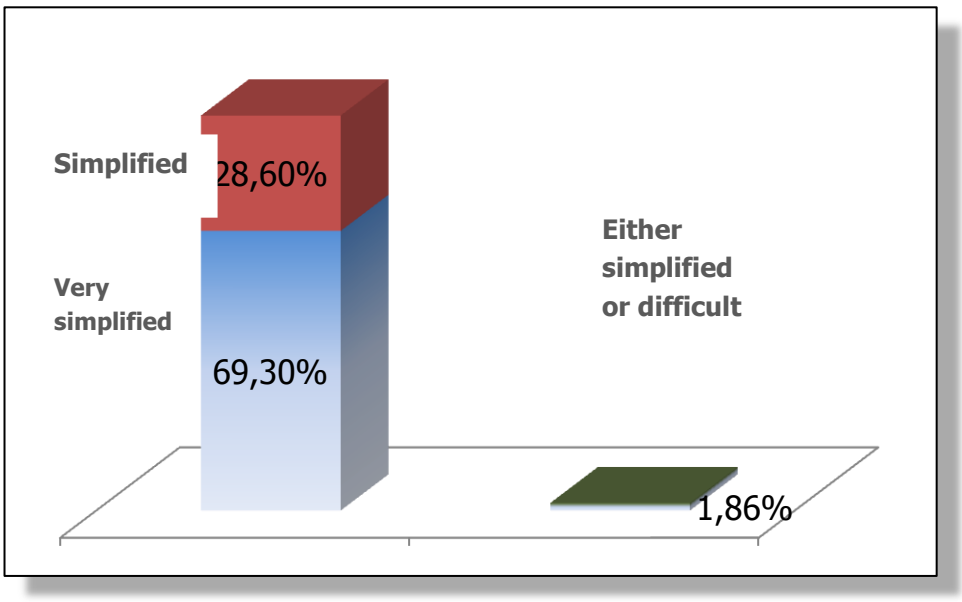


Ill. 16
Time use per year
with conventional wash
and BagBath® wash

7.6 Process easement

For the acceptance of new, innovative products it is one of the most important criteria that the traditional, daily processes are optimized and also facilitated.
In the following the feeling is represented concerning a process easement when using BagBath® in the comparison to conventional washing.

Ill. 15
Evaluation of the
Process easement



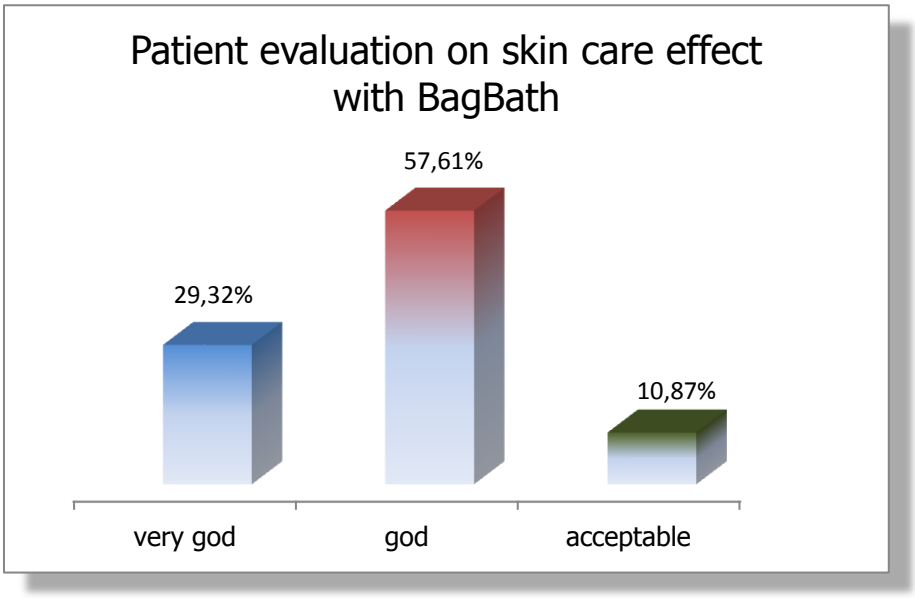
To 98.2% the usage of BagBath® washing was felt as easement to the conventional wash method. The satisfaction of the caregivers in the daily work is promoted thereby!

7.7 Product handling

In the evaluation is in the course of the process easement also the product handling relevant. Here it was to be stated that the caregivers were impressed additionally to the questionnaires also on personal demand by the simplicity and logic of the product . BagBath® could fulfill the individual requirements of the patients to the complete body wash, e.g. by warming up the product in the microwave or storage of BagBath® in the refrigerator, e.g. for a fever-lowering purpose.

7.8 Skin care effect

After a so short test phase it is difficult to judge the skin care effect. The result shows however that the patients evaluate the skin care as "very well" to "well". That suggests that with consistent use of BagBath® a positive effect is to be expected. Also by the caregivers a maintained skin picture could be determined.



Ill. 16
Patient evaluation on the skin care effect after using BagBath®

Additionally to that it is to be noticed that no allergic reactions or provoking arose with the use of BagBath®, despite application at nose and mucous membranes.

7.9 BagBath® as alternative?

The results of the test phase shows that the caregivers in 93% of all body washings regards BagBath® as alternative to the conventional method.

Amazingly, with an average age of ~66 years of the asked patients, 90% judged BagBath® as alternative to the conventional wash method!
7% indicated that BagBath® is "perhaps" an alternative for "washing with water and soap" and 3% of the washings became used by the patients themselves independently after the washing with conventional method.

8. The hygienic aspect

Like already described in details in chapter 2. "Goals of the hygiene" germs affect our skin flora. While a "physiological germ spectrum" promotes our convalescence, other bacteria lead to a degradation of the human state of health.

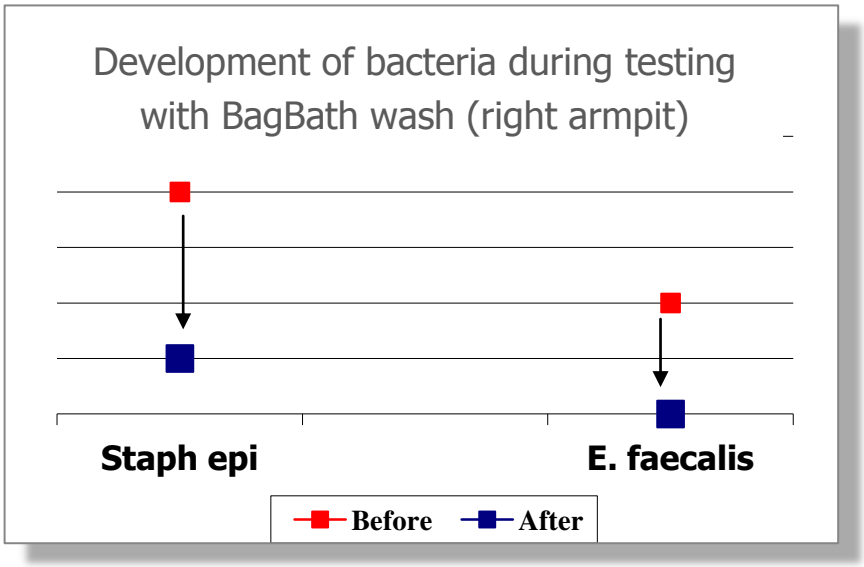
The protective layer of the healthy skin has a pH value of approx. 4.5 to 5.5, which offers a natural protection against bacteria. The pH value of soap and also some wash lotions lies partly well over 5.6 and can damage the acid protective mantle of the skin. Thus they destroy the ability of the skin to repel harmful micro organisms. BagBath® contains no soaps, soap based cleaning agents or alcohol and affects therefore not the pH value of the skin.

The proof of a possible reduction of bacteria on the skin during testing of BagBath® was supported by micro-biological investigations.
The samples necessary for that was taken regular from patients of the right armpit as well as the right inguinal before and after the wash with BagBath® or "water and soap".
Into this additional investigation only patients were integrated, who were longer than 10 days on station. These patients have heavier illnesses, e.g. SHT, large operations, Sepsis, etc..

Since the evaluation and representation of the micro-biological results would exceed the framework of the skilled work, the following is described a case example of a 59-year, artificially respirated, neurosurgical female patient that reflects the general impression of the testing and developments.
The female patient was 8 weeks on the intensive care unit. Regularly, before and after that body wash samples were taken and examined micro-biologically.

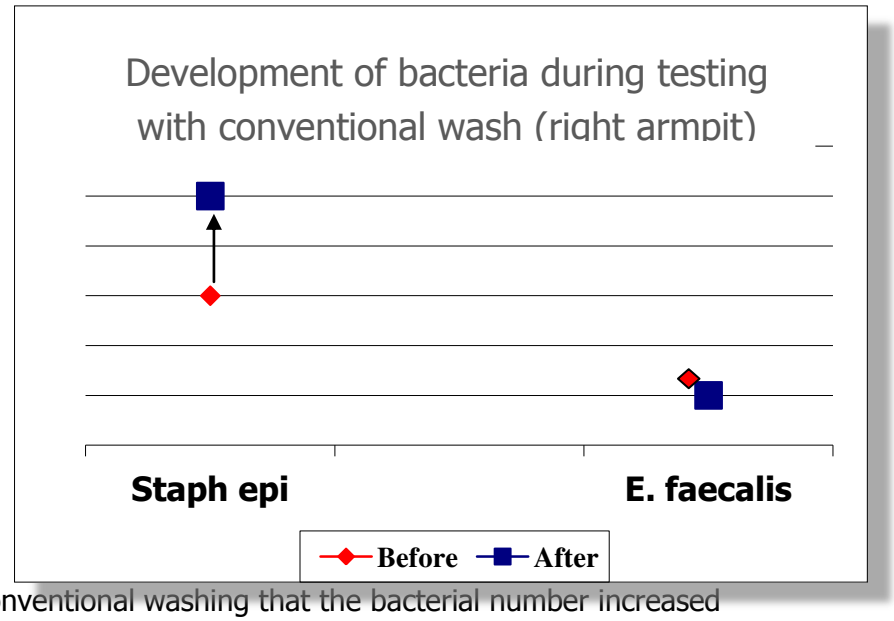
The body wash was made by means of 4 weeks with BagBath® and by 4 weeks in the conventional way. How the bacteria spectrum (here: Denomination of the two most frequent bacterias) in this time developed, is evident in the following illustrations.

Ill. 17
Bacteria development (positive samples right Armpit after wash with BagBath®.



With BagBath® it is clearly evident that the bacteria[1] after wash are strongly reduced or zero.

Ill. 18
Bacteria development (positive sample right Armpit after conventional wash



In contrast , it could be stated after conventional washing that the bacterial number increased even partially!

[1] selected bacteria: **Staphylococcus epidermidis** - Staph. Epi: They belong to the physiological bacteria flora of skin and mucous membranes of humans. These bacteria have however the ability for development at plastic catheters (CVC, Central Venous Catheters etc..) and can lead to manifest infections.
Enterococcus faecalis - E.faecali: normal location of the bacteria in the intestine. This exists in extreme conditions, like heat and pH 9-6. It is a frequent cause of urinary infections, Sepsis etc. with the ability for the development of resistances against numerous antibiotics.

The effect of BagBath® proves the removal of bacteria as very effective.
The results after conventional washing showed the number of bacteria developed and/or stagnation.
During washing with BagBath® however, it could be proven that BagBath® removes the bacteria.

8.1. Result of the micro-biological investigations

The investigation showed that by the use of BagBath® the number of positive samples decreased and with conventional washing a partly or an increase of positive samples was registered.

9. Result of the project

["... first I was very skeptical regarding" washing without water "or" a whole bath in a packing ". That I could really not see for myself. This way of the hygiene should be pleasant? What should that mean for my work on the ICU station?
The first thought was: now it is so far "through away polishing cloths" for intensive patients! Armed with some trial packages and not yet convinced, I opened myself, to see how it looked in practice.
I tested BagBath® on the internal intensive care unit at a very sick patient.
I was surprised by the simple product handling! Very simple logic of the product. Per body region one cloth. To that I needed less time for preparation and tidy up.
As hygiene-assigned in our station it became clear to me that above all the hygiene with BagBath® could be of importance.
On an intensive care unit the patients are more susceptible to cross and nosocomial infections.
With support of the company Karl Beese (GmbH & CO), Dr. Stefan Schroeder (Managing upper physician of the operational intensive care unit in the WKK Heide), Dr. Schweiger (Microbiologist in the WKK heide) and the team of the operational intensive care unit it made me possible to start this interesting project... "] (Antje Schmidt, 19 September 2005)

Now - were the thoughts from 19 September 2005 confirmed?
The so called rituals of the hygiene are, particularly in an acute situation, not so important to the patients and in the individual care in the hospital difficult. The conventional method of the body washing of the patient is for decades "standard" in the German hospital everyday life.
But standardization of the wash processes, lack of time by personnel savings and the inadvertence in relation to the needs of the patient, resulting from it, lead not only to

the discontent of the caregiver, but also to the "neglect ' of the patient as well as possible problems.
Because by incorrect behavior during the hygiene, e.g. by disregard of the wash direction, insufficient hand hygiene etc., can lead to the spreading of infections and beyond that to complications, which continue to worsen the state of health of the patient.
Related to that the "kind" of washing whether conventionally or alternatively, is not even crucial.
Regardless what method behind the washing process the , "magic word" for the support of the recovery process of a patient are "care" and "hygiene".

In the comparison from BagBath® to conventional washing it must be answered now whether BagBath® fulfills the conditions for an intensive and successful patient care. The results of testing occupy first of all that the needs of the patients also with BagBath® are absolutely satisfied also regarding the hygiene
Patient desires, of warm washes or cool, can be fulfilled by the alternative method.
Additionally to that BagBath® offers further advantages by simple application, a clear decrease of the patient load during the washing process, the purposeful impact as well as the reduction of cross infection and above all the time savings of the caregivers.
Time saving does not mean here the loss of quality. In the opposite! The possibility to concentrate on effective and "correct" washing, without having to neglect other tasks, reduces the danger of complications and causes a relief of the strained working climate on the ICU station.
BagBath® makes it possible for the caregivers to spend more time for recognizing the needs of the patient and to increase the quality of the care. It is called Care, - when the patient feels well in its environment . Satisfaction and well-being accelerate the recovery!
The analysis of economic aspects, like materials consumption and cost saving potential, shows that the use of BagBath® can lead to high savings not only with station (care lotion, laundry consumption etc..) but also expenditures for hospital (water and energy consumption, etc..).

Also here, the cost savings does not cause a degradation but improvement of the quality in the patient Care.

"Minimizing the risk of infections and cross contamination possibly leads across infection control to the cost saving with antibiotics and across a minimized number of days on the intensive care unit to a proceeds optimization.
Costs can be decreased further over saving of laundry consumption.
Saving of time with the washing process has by the process optimization as a consequence that caregivers can focus again on core tasks for care of the intensive patients." (interview Dr. Schroeder, 2006)

Patient-oriented hygiene requires flexibility of the caregiver in the argument with the needs of the patient. "cutting off old behavior " and considering functions as well as processes can simplify re-organization of the own operational sequences or also accelerate without losses on sides of the patients still in the quality management of the hospital.

Appendix

Interview questions Dr. Schroeder

1. **In the literature the hygiene is described on the ITS as enormously important and indispensably, in order to avoid secondary damage of the skin. How importantly do you judge the hygiene from a medical view?**
   A good quality of the hygiene is very important under intensive-medical criteria for different reasons: an appropriate hygiene for the preservation of an intact skin help bacteria and infections to appear. Correct procedure with the hygiene should to a large extent help to prevent also infection. Finally good skin care also decrease the risk for pressure ulcers of the skin to appear.

2. **How is relevant the use of BagBath in connection with cross infections?**
   By the principle of Bag Bath to use several skin care cloths as single material for different body regions it appears logical that the risk for cross infections are decreased. Through this infection control it can with large probability decrease the subsequent costs, e.g. with new developed infections.

3. **Can you meet a statement going by that these infections decrease after the wash with BagBath, when we talk about the intire ICU station?**
   I do not yet have the complete overview of the microbiological test results of our investigation for the application of BagBath on the operational intensive care unit. subjectively I however have the impression that BagBath helps to decrease cross infections.

4. Which changes have you noticed with the use of BagBath on the station?

A. Process cycles

B. Patient well-being

C. Hygiene

I am of the opinion that the use of BagBath leads to time savings by an optimization of the washing process. In my judgement it also comes to a reduction of wash consumption and by that costs, because so much wet laundry no longer have to be changed due to the washing process. Statements to patient well-being I cannot meet, because I have not washed any patients with BagBath myself. Under hygienic aspects I see advantages for the use of BagBath: As the first it decreases with large probability infections and on the other hand the avoidance from water to the body cleaning minimizes the occurrence of cross contamination.

5. Which economic advantages do you see with the use of BagBath for your station, and/or for the house?

Minimizing the risk of infections and cross contamination possibly leads through the infection control to cost savings in terms of antibiotics and across that probably a shorter stay on the intensive care unit and optimization of procedures. Costs can also be decreased over saving of wash consumption. Time savings by the washing process and the process optimization has the consequence that caregivers can focus again on the care of intensive patients.

6. How should the caregivers effectively use the saving of time obtained by the use of BagBath?

Saving of time should be used for the care of the intensive patients with the goal, that the patients are given the best quality care, and possible a shorter stay in the intensive care unit.

7. Are you of the opinion that BagBath can be used with each patient?

Yes!

8. With BagBath are the requirements for the hygiene of the patients fulfilled?

From a medical view it is difficult to judge, but the principle of BagBath however fulfill the needs and requirements of the patients.

9. In how far is the load of the patients by body washing decisive for the convalescence?

Frequent relocating of patients from wet bedlinen in the context of the conventional hygiene with water gives unnecessary risks for traumatized , freshly operated and tubed patients. The use of BagBath and the gentle washing supports with advantage the convalescence.

10. For what reasons did you become converted to BagBath on your station?

1. Infection control
2. Time reduction
3. Reduction of costs

interview Dr. Schroeder

BagBath

BEESE MEDICAL

Einsatz bei:

- Teilwäsche ☐
- Ganzwäsche ☐
- Verschmutzung ☐
- Intimpflege ☐
- Sonstiges_____

Pflegende

Datum:___/11/2005

Produkt-Handling
(Packung öffnen, Anwendung mit Handschuhen...)

1	2	3	4	5

Prozesserleichterung
(Aufwand gegenüber herkömmlicher Waschung)

1	2	3	4	5

Zeiteinsparung _____ min

1	2	3	4	5

Sauberkeit
(...der Patienten)

1	2	3	4	5

schlechter als 3, Art Verunreinigung angeben _____

Zusätzliches Material:
Waschhandschuh ____ St.
Handtuch ____ St.
Bettzeug ____ St.

Zufriedenheit

1	2	3	4	5

schlechter als 3, bitte Grund angeben _____

Patientenbelastung

BagBath ist eine Alternative

1	2	3	4	5

Materialverbrauch
Anzahl der Tücher ___St.

Sonstiges _____
_____

1	2	3	4	5

1-sehr gut 2-gut 3-zufrieden stellend 4-mangelhaft 5-schlecht

BagBath

BEESE MEDICAL

Patient

Datum:___/11/2005

Angenehmes Waschen	1 2 3 4 5
Sauberkeitsempfinden	1 2 3 4 5
Hautempfinden (angenehm auf der Haut?) schlechter als 3, bitte Grund angeben _____	1 2 3 4 5
Hautpflegeeffekt (Haut fühlt sich weicher an...)	1 2 3 4 5
Zufriedenheit schlechter als 3, bitte Grund angeben _____	1 2 3 4 5
BagBath ist eine Alternative	1 2 3 4 5

1 | 2 | 3 | 4 | 5 **1**-sehr gut **2**-gut **3**-zufrienden stellend **4**-mangelhaft **5**-schlecht

Herkömmliche Waschung

Pflegende

Datum:___/12/2005

Einsatz bei:

- Teilwäsche ☐
- Ganzwäsche ☐
- Verschmutzung ☐
- Intimpflege ☐
- Sonstiges_____

Waschzeit _____ min
(inkl. Aufrüsten, Nacharbeit, Pflegecreme, Wäschewechsel...)

1	2	3	4	5

Sauberkeit

1	2	3	4	5

Pflegende-Zufriedenheit

1	2	3	4	5

Patientenbelastung

Materialverbrauch/-wechsel

1	2	3	4	5

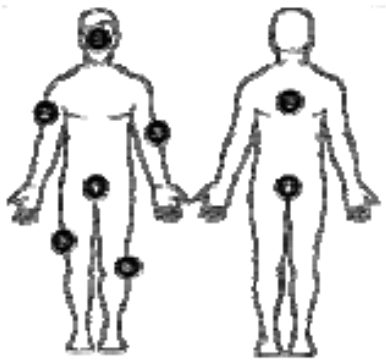
Waschlappen ____*St.*
Handtuch ____ *St.*
Kopfkissenbezug ____ *St.*
Bettbezug ____ *St.*
Hemd ____ *St.*
Bettlaken ____ *St.*

1	2	3	4	5

1-sehr gut 2-gut 3-zufrieden stellend 4-mangelhaft 5-schlecht

BagBath

BEESE MEDICAL



Dokumentation

Datum:___/11/2005

Abstrichentnahmestelle markieren

Definition _____

Patientenaufnahme-Nr.: _ _ _ _ _ **Patient:** m / w **Alter:** _ _ _

Diagnosen:_____

_____

Infektionen:_____

Antibiose: ja / nein

Antibiosetherapie mit: _____

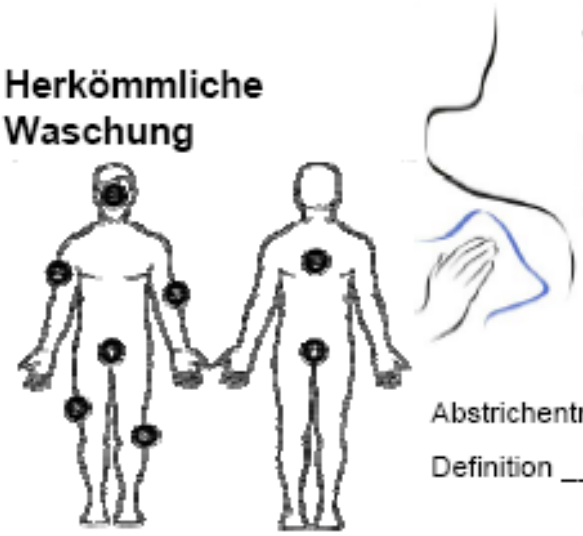
Dauer: _____

Dosierung: _____

Entnahmeprobe:

1. Trachealsekret ☐
2. Katherterspitzen
   - ZVK ☐
   - Arterie ☐
3. Abstrich Wunden
   - Orte: _____
4. Drainagen _____
5. Urinstatus ☐
6. Urikult ☐

Herkömmliche Waschung



Dokumentation

Datum:___/11/2005

Abstrichentnahmestelle markieren

Definition _____

Patientenaufnahme-Nr.: _ _ _ _ _ **Patient:** m / w **Alter:** _ _ _

Diagnosen:_____

_____

Infektionen:_____

Antibiose: ja / nein

Antibiosetherapie mit: _____

Dauer: _____

Dosierung: _____

Entnahmeprobe:

1. Trachealsekret ☐
2. Katherterspitzen
   - ZVK ☐
   - Arterie ☐
3. Abstrich Wunden
   - Orte: _____
4. Drainagen _____
5. Urinstatus ☐
6. Urikult ☐

Table of literature

1. Zeitschrift Heilberufe Spezial: Urban & Vogel Verlag, Ausgabe 2006

2. Pflege Heute: Urban & Fischer Verlag, 2 Ausgabe 2001

3. Intensivpflege und Anästhesie: L. Ulrich, D. Stolecki, M. Grünewald, Thieme Verlag, 1 Ausgabe 2005

4. Hygiene – Ein Lehrbuch für Fachberufe im Gesundheitswesen: Franz Sitzmann, Springer Verlag, Ausgabe 1999.