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Clinical Study Protocol

Based on the International Conference on Harmonization
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Clinical Study Protocol

Study Number	EM-05-012990
Protocol Title	Randomized, Controlled, Multi-Center Study Comparing the Safety and Efficacy of 3M™ Cavilon™ Advanced Skin Protectant, in the Management of Incontinence-associated Dermatitis, to a Commercially Available ConvaTec Sensi-Care® Protective Barrier
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1. Protocol Synopsis

Study Title	Randomized, Controlled, Multi-Center Study Comparing the Safety and Efficacy of 3M™ Cavilon™ Advanced Skin Protectant, in the Management of Incontinence-associated Dermatitis, to a Commercially Available ConvaTec Sensi-Care® Protective Barrier
Investigational Product & Regulatory Status:	3M™ Cavilon™ Advanced Skin Protectant is a 510(k) cleared product. The comparative product is a commercialized product, ConvaTec Sensi-Care® Protective Barrier (part number 325614), a skin protectant paste with 15% zinc oxide.
Randomization	Subjects at each site will be randomized in a 1:1 ratio to either 3M™ Cavilon™ Advanced Skin Protectant or ConvaTec Sensi-Care® Protective Barrier using a computer generated randomization schedule.
Study Objective(s) & Hypothesis:	Objective(s): The primary objective of the study is to compare the safety and efficacy of 3M™ Cavilon™ Advanced Skin Protectant and to determine superiority compared to a commercially available moisture barrier paste (with 15% zinc oxide) in the management of severe, Category 2 IAD among subjects suffering from urinary and/or fecal incontinence. The outcomes will include time to healing, skin improvement, pain reduction, and avoidance of secondary complications such as infections and pressure ulcers. Hypothesis: 3M™ Cavilon™ Advanced Skin Protectant is superior to 15% zinc oxide products for protecting and managing severe Category 2 IAD-damaged skin. 3M™ Cavilon™ Advanced Skin Protectant can achieve this superiority performance with fewer applications and therefore improves IAD skin care protocol adherence and saves nursing time and materials.
Outcome Measures:	**Primary Efficacy Endpoint:** The primary endpoint is percent change in IAD scores from baseline to end of study. **Secondary Endpoint(s):** Secondary end points will include: Time to re-epithelialization of denuded skin (defined as healing), time to progress from a severe Category 2 IAD to a Category 1 IAD or lower, avoidance of complications such as secondary infections and pressure ulcers efficacy in subjects who switch from the comparative group to the Cavilon Advanced Skin Protectant group after failure on the comparative group; Pain score comparison between the two products; Patient Quality of Life change from baseline; Nursing time; and Incontinence product use and associated cost.

Study Population:	**Inclusion/Exclusion Criteria:** Subjects may be enrolled into this study if the answers to all these questions are **yes**. 1. Is the subject a full term newborn (37 weeks or greater gestational age) or older? 2. Is the subject in a facility providing nursing care 24 hours per day? 3. Does the subject have severe Category 2 Incontinence-Associated Dermatitis–red with skin breakdown (i.e. skin erosion and denudation or denudation of skin alone) 4. Is the subject willing to have photographs taken of their skin exposed to incontinence and permit use of photographs in potential publication? 5. Is the subject willing to release rights to 3M for the use of the photos? 6. Is there a reasonable expectation that the subject will remain in a facility for at least 7 days following enrollment in the study? 7. Has the subject, or their legally authorized representative, signed an Institutional Review Board-approved informed consent/assent document and authorized the use and disclosure of protected health information? Subjects are excluded from participation in this study if **any** of the answers to these following questions is yes. 1. If female, is the subject pregnant or breast feeding or has she given birth within the 3 weeks preceding the screening visit? 2. Does the subject have a known allergy to acrylates or cyanoacrylates? 3. Does the subject have a Stage III, IV, unstageable, suspected deep tissue injury pressure ulcer in the area where the skin is affected by incontinence? 4. Does the subject have a preexisting skin disease on the areas affected by incontinence that may make skin assessments for this study difficult? 5. Does the skin area affected by incontinence require treatment with a concomitant medication or product? 6. Does the subject have an active genital herpes infection? 7. Has the subject received antifungal powders in the area affected with IAD within 24 hours prior to enrollment? 8. Has the subject received cyanoacrylate based skin protectant (such as Marathon) within 72 hours prior to enrollment? 9. Is the facility unwilling to discontinue use for this subject of Dimethicone-containing wipes on the area where the skin protectant product will be applied? 10. Is the facility unwilling to discontinue use for this subject of Chlorhexidine Gluconate wipes on the area where the skin protectant product will be applied? 11. Does the subject have any medical condition that in the opinion of the investigator should exclude him/her from participating in the study? 12. Has the subject been enrolled in any investigational study where product was applied to proposed study sites within 30 days of the screening visit?
Study Design:	Multi-Center, Randomized, Controlled, Superiority study
Sample Size:	102 eligible subjects will participate in the study.
Geography:	The study will be conducted at centers located in the US.
# Sites:	Estimated # of sites: at least 13 # of Subjects per site: 8-15

Assessments: **Data Analysis Planned:**	**Study Assessments**: • Subjects will be screened for the Inclusion/Exclusion criteria • IAD history, demographics, and medications will be documented at baseline. • Subject Disposition (Adult population: >18years of age) 1. If the subject is discharged prior to 21 days, the subject will still have met the requirements for study completion. 2. Subjects can remain in the study for up to 21 days following enrollment receiving the 3M 510(k) clearance product or comparative product. All subjects will be discontinued at this point with the exception of the following 2 scenarios: • Subjects randomized to the comparative group, who fail to reach healing at the end of 21-day period with ongoing incontinence may be crossed over to the Cavilon Advanced Skin Protectant group and allowed to continue for up to an additional 21 days. • Subjects randomized to the Cavilon Advanced Skin Protectant group, who either re-epithelized or have a positive reduction in their IAD during the 21-day period, but remain hospitalized and continue to have incontinence, may continue to receive the product for up to an additional 21 days to evaluate prevention of IAD reoccurrence. • If a subject completely heals during the study, they may be discontinued at that time. • Subject Disposition (Pediatric population: Full term (37 weeks) to 18 years) 1. If the subject is discharged prior to 21 days, the subject will still have met the requirements for study completion. 2. Subjects can remain in the study for up to 21 days following enrollment receiving the Cavilon Advanced Skin Protectant or comparative product. • Subjects randomized to the comparative group, who fail to improve (IAD) within 3 days of first application in the study may be crossed over to the Cavilon Advanced Skin Protectant group and allowed to continue for up to an additional 21 days. • Subjects randomized to the Cavilon Advanced Skin Protectant group, who fail to improve (IAD) within 3 days of first application in the study may be discontinued. • Subjects randomized to the Cavilon Advanced Skin Protectant group, who either re-epithelized or have a positive reduction in their IAD during the 21-day period, but remain hospitalized and continue to have incontinence, may continue to receive the Cavilon Advanced Skin Protectant for up to 21 days to evaluate prevention of IAD reoccurrence. • If a subject completely heals during the study, they may be discontinued at that time. • IAD skin assessments will be performed on Cavilon Advanced Skin Protectant dosing days, which will be 3 times per week (Dosing days M-W-F). Dosing with comparative will occur following each incontinence episode. Skin assessment frequency for the comparative group will follow that of the Cavilon Advanced Skin Protectant group. • Assessments will be done at each site using a validated IAD skin assessment tool and photographs of the areas being assessed will be taken. • Subject Quality of Life questionnaires, and Ease of Use surveys (product) will be completed. • Nursing time for skin management and assessment will be documented. • Subject's response regarding pain scores will be tracked following cleansing and product application. • Type and quantity of products used will be tracked.

Data Sets Analyzed –

The primary efficacy data set will be the intent-to-treat data set that will consist of eligible subjects who have at least one IAD assessment post-baseline. One interim analysis will be conducted after 50% of the subjects are enrolled.

The primary analysis will be the percent change from baseline to last visit in IAD scores. The IAD score at each time point will be estimated using the assessments at each time point. The percent change from baseline will be calculated at the last visit and compared between treatment groups using an analysis of variance with site, treatment, age group (infants vs adults) and interactions as factors in the model. Lack of significance ($P<0.05$) for the age group-by-treatment will be used as justification for pooling the age groups. If the interaction is significant, the age groups will be analyzed separately. If appropriate, non-parametric procedures (e.g. ranking the data prior to analysis) will be used.

Secondary responses include:

- Time to resolution of severe Category 2 IAD, defined as re-epithelialization of skin.
- Pain scores during incontinence management
- The proportion of subjects on each treatment group with stinging or burning upon application.
- Percent change in IAD scores at each visit.
- Efficacy in subjects who switch from the comparative product to the Cavilon Advanced Skin Protectant after failure on the comparative product.
- Prevention of IAD in areas that had no denuded skin and remained free of IAD throughout the intervention.
- Prevention of IAD, as measured by IAD scores in subjects whose IAD re-epithelialized and who continued on the Cavilon Advanced Skin Protectant.
- Patient Quality of Life (QoL) as measured by the EQ-5D-5L questionnaire.
- Nursing time will be summarized for a fecal episode occurring post Dose 1 (after first treatment) for a subset of subjects.
- Incontinence product use will be recorded during the study, and summarized for both product groups.
- Prevention of complications such as fungal infections and or pressure ulcer development.
- Environmental cleanliness of multi-use comparative product packaging.

Safety Analysis

Overall incidence of adverse events will be documented and compared between two groups. The safety analysis data set will consist of all randomized subjects

Health Economics Analysis

Product utilization, such as estimated cost per application, frequency of application and days of treatment will be considered. The material used and nursing time spend to treat subjects with urinary and/or fecal incontinence over a three week (or shorter) period will be analyzed using an appropriate regression model. Detail will be provided in the Statistical Analysis Plan.

Sample Size Justification

From a pilot study, the standard deviation of the percent change from baseline was estimated at 70%. A sample size of 51 patients per treatment group has at least 80% power to detect a mean difference of 45% change from baseline.

2. Background Information

The skin is the protective layer of the body and provides an important anatomical barrier to pathogens, irritants, water loss and environmental threats. Various conditions can damage the skin and breach integrity of the barrier. This can result in inflammation, disruption of epidermal integrity, pain and can increase the risk of infection. One example of such a condition is incontinence, which can lead to skin damage due to excessive moisture, high pH, and in the case of fecal incontinence, the presence of fecal enzymes. Skin damage that results from incontinence is referred to as Incontinence-Associated Dermatitis (IAD) and has been reviewed in the literature. (1-5)

Prevention of skin damage is considered a standard of care (6) but IAD is still reported in all care settings (7-11) with rates varying from 3.5% in the nursing home setting (7) to as high as 95% in the critical care environment. (8) The elderly are considered to be at higher risk due to the various normal changes that occur in skin upon aging.(12, 13) The presence of fecal incontinence has also been associated with a 22-fold increase in the development of pressure ulcers. (14) It is important to accurately differentiate IAD from pressure ulcers and other skin conditions. (15)

Clinicians generally agree that fecal incontinence puts the skin at higher risk for damage than exposure to urine alone. (1-3) This is due to the presence of high levels of bacteria and fecal enzymes and liquid stool (diarrhea) is usually considered the most significant irritant leading to IAD. Overgrowth of the pathogen *Clostridium difficile* commonly precipitates an infection that results in frequent or continuous liquid stools exposing the skin to damaging irritants and wetness.
In the presence of incontinence, nursing care focuses on preventing exposure to feces and urine and protecting the skin. (6) While fecal management systems are now used with increasing frequency to contain and divert feces from the perineal skin, (16-18) exposure can still occur due to device leakage. Consequently, an effective skin protection protocol remains a critical consideration for patient care.

The current best practice recommendation for incontinence skin care is to “cleanse, protect and restore” as part of a “defined skin care regimen”. (1, 2, 6, 15, 19) New recommendation were recently reported at the Proceedings from the Global IAD Expert Panel in February 2015. Along with the new recommendations were a categorization tool identifying severity of IAD which this protocol follows. These interventions can effectively reduce the incidence of IAD and the cost of care in high risk populations. (1-3, 20-22) Numerous products and protocols are available for skin care and several studies have been published. (23-38)

Cleansing removes irritants and debris from the skin and is considered an essential initial step. Cleansing is typically performed using a pH balanced, no-rinse liquid cleanser formulation delivered as a spray, foam or pre-moistened wipe.

Protection of the skin is essential to repel moisture and irritants and is generally accomplished by the application of a moisture barrier cream or ointment. Less commonly, liquid barrier films may be used to protect the skin. Further, it has been demonstrated that the consistent use of a skin protectant can significantly reduce the incidence of sacral pressure ulcers.(39-40) Moisturizers are believed to have

benefit for intact skin and are typically formulated into cleansing solutions or barriers and are rarely applied as a separate product.

In situations of severe skin damage where there is partial or complete epidermal loss and the tissue is moist, care consists of cleansing and application of a moisture barrier product. Zinc oxide ointments or specialized zinc oxide based formulations referred to as pastes are commonly used. Pastes combine an ointment or cream with an absorbent powder (or gum) allowing the formulation to adhere to wet surfaces. The majority of these products have a thick consistency which helps the barrier to remain in place during ongoing exposure to liquid stool. While clinical use is common, pastes have some significant limitations for both the patient and clinician. The presence of the absorbent can makes them gritty; this texture makes them uncomfortable or painful on application, during wear and especially during cleansing and removal. Some formulations dry and clump making them difficult to remove. In addition, liquid stool can become embedded in the surface of the product. This necessitates frequent removal and cleansing which can increase the likelihood of mechanical trauma to already severely damaged skin.

It is not surprising that compliance issues with incontinence skin care protocols have been reported. [41] Lack of education, lack of access to products and the difficulty associated with use of some products (e.g. pastes) have been described. Innovations in product performance and ease of use could encourage nursing compliance which could help to prevent skin damage in vulnerable individuals.

In this study, we propose to test a new 510(k) cleared moisture barrier film. This novel technology will adhere to severely damaged (denuded) and intact moist or wet skin in order to provide protection from liquid feces and other irritating body fluids and create an environment where healing can occur. This protective film coating will be more comfortable for subjects during application and wear. In addition, this product is easily cleaned and does not require frequent removal, making it more clinician friendly than paste barriers.

3. Device Description and Regulatory Status

3M™ Cavilon™ Advanced Skin Protectant was an investigative product at the start of this study in the fall of 2015. 3M submitted a Premarket Notification (510k) application and received clearance by the FDA on August 23, 2016. The Sponsor contends that the product, and its use in the study, poses a non-significant risk to the participants, and intends to conduct the study under the cleared medical device requirements at 21 CFR §812.2(c). (Protocol versions 1-6 were covered under investigational device regulations at 21 CFR §812.2 (b) and Protocol 7 are covered under cleared 510(k) device regulations at 21 CFR §812.2(c)). The device does not meet the requirements of a significant risk device since it is not an implant, not being used to support or sustain life, not being used for diagnosing, curing, mitigating, or treating disease, and does not present a potential for serious risk to health, safety, and welfare of a subject. The product is an acrylate polymer technology that utilizes cyanoacrylate(s) as a component of the formulation. This formulation is delivered from a non-stinging, rapid drying solvent. Upon application to the skin it forms a breathable, protective, transparent coating.

3.1 Intended Use

3M™ Cavilon™ Advanced Skin Protectant is a liquid film-forming barrier intended for the management of minimal to severe skin damage (for example: Incontinence Associated Dermatitis or Peristomal Moisture-Associated Skin Damage). It protects the skin from exposure to caustic conditions such as incontinence of urine and/or feces (including the severe diarrhea associated with *Clostridium difficile* infection, enteral feedings and ammonia-reducing laxatives). It is also intended for the protection of intact skin exposed to: moisture; irritants such as gastric fluid or wound drainage; or friction and shear.

4. Summary of Previous Studies

The barrier film has been tested in a pilot clinical study consisting of sixteen eligible subjects with severe redness, breached or denuded skin on their buttocks and thighs resulting from Incontinence-Associated Dermatitis. Twelve of the subjects had epidermal skin loss and 4 subjects had severe redness. The barrier film application schedule was twice a week for up to 3 weeks for a maximum total of 6 applications.

Four of the subjects with epidermal skin loss had complete re-epithelialization of the skin surface with 4-6 applications of the barrier film. Five subjects with epidermal loss had substantial improvement with 2-6 applications of the barrier film. Three of these five subjects with epidermal loss were on warfarin therapy and showed significant improvement of their IAD, but had some residual skin damage after 6 barrier film applications. The number of applications was tied to the subject's length of stay at the hospital. Two subjects had worsening of their IAD; one subject had an MI and was discharged to hospice care and the second paraplegic subject was non-compliant with the dosing schedule, skipping barrier film application for 7 days and missing 2 doses. The subject had had a recent above knee amputation and developed sepsis at her amputation site. One subject remained static throughout the study.

The four subjects with severe red skin returned to healthy normal skin with 1-4 barrier film applications.

All nine patients who reported pain at the beginning of the study reported reduction from scores of 7 to 10 to scores of 0 to 3 at study end. The barrier film was therefore able to provide substantial pain reduction in all patients who reported pain at enrollment, with reduction of patient scores from 7-10 at Day 1 to 0-3 at study end. The protective nature of the barrier film with skin healing reduced reported pain scores during cleansing and subsequent product applications.

There were no reported adverse events associated with the barrier film application. The formulation was able to polymerize and able to create a protective barrier in the presence of oozing exudates and blood.

This product has also been tested in hairless guinea pig and Yorkshire pig models. These studies have demonstrated the formulation's ability to protect Dermatome created superficial wounds from an artificial intestinal fluid for up to 96 hours, and allow healing under continued exposure to the artificial intestinal fluid. In porcine partial thickness wounds, the formulations were able to polymerize and

create a barrier in the presence of exudate and blood, demonstrating hemostatic and lymphostatic properties.

Ten (10) human clinical studies have been completed on healthy subjects, with the product being applied to the back, arms, and buttocks. No adverse events were reported, and no irritation or sensitization was observed in single or multiple dose (N=5 doses on buttocks) in studies involving healthy subjects. The product was well tolerated. A product durability study was completed with the final dosing recommendation of twice a week to three times a week dosing depending on whether there is intact or partial denuded skin.

5. Study Objectives and Purpose

3M™ Cavilon™ Advanced Skin Protectant is a new skin protectant formulated to protect damaged and denuded skin even in the presence of exposure to the most potentially damaging body fluids, such as liquid stool and gastric fluid. In this study, 3M™ Cavilon™ Advanced Skin Protectant is expected to intimately adhere to damaged and denuded skin and provide better protection from further damage than commonly used products such as moisture barrier pastes, thereby making it easier for nursing staff to cleanse the skin after incontinence episodes, thus saving time and also materials. This new product is also expected to make incontinence care more comfortable for the patients by reducing the pain normally associated with IAD.

5.1 Primary Objective

The primary objective of this study is to compare the safety and efficacy of the recently 510(k) cleared product (3M™ Cavilon™ Advanced Skin Protectant), and to determine superiority compared to a commercially available moisture barrier paste with 15% zinc oxide (ConvaTec Sensi-Care® Protective Barrier), in the management of severe Category 2 Incontinence-Associated Dermatitis (red skin with denudement present) from urinary and/or fecal incontinence. The primary endpoint is percent change from baseline to end of study in IAD scores. Healing in this study is defined as re-epithelialization of denuded skin.

5.2 Secondary Objective

The secondary objectives are to compare the effect of 3M™ Cavilon™ Advanced Skin Protectant versus ConvaTec Sensi-Care® Protective Barrier will include: Time to re-epithelialization of denuded skin (defined as healing), time to progress from a severe Category 2 IAD to a Category 1 IAD or lower, avoidance of complications such as secondary infections and pressure ulcers efficacy in subjects who switch from the comparative group to the Cavilon Advanced Skin Protectant group after failure on the comparative group; Pain score comparison between the two products; Patient Quality of Life change from baseline; nursing time; and incontinence product use and associated cost.

6. Study Design

The study is a randomized, controlled, superiority study, comparing the recently 510(k) cleared product, 3M™ Cavilon™ Advanced Skin Protectant, with the commercially available ConvaTec Sensi-Care® Protective Barrier, a skin protectant paste with zinc oxide, for the management of severe Category 2 Incontinence-Associated Dermatitis in the presence of continued urinary and/or fecal incontinence. All adult subjects will receive Cavilon Advanced Skin Protectant or the

comparative paste products for 21 days unless discharged from there facility earlier. For pediatric patients, if subject has not improved within 3 days of initial treatment (Cavilon Advanced Skin Protectant or comparative), the subject may be crossed over or discontinued.

Those adult subjects with ongoing incontinence who are on Cavilon Advanced Skin Protectant product may continue to receive the product for another 21 days if they are showing signs of healing (re-epithelization of denuded areas). Those pediatric subjects with ongoing incontinence who are on the Cavilon Advanced Skin Protectant product may continue to receive the product for up to 21 days if they are showing signs of healing (re-epithelization of denuded areas).

Adult Subjects on the comparative product with ongoing incontinence who fail to heal (re-epithelialization of denuded areas) may be crossed over to Cavilon Advanced Skin Protectant for additional 21 days of product application and assessments per the protocol. These subjects will be followed for up to a maximum of 42 days, or until discharged from the facility. During the study follow-up period, the frequency and intensity of subjects' incontinence will be monitored, and photographic documentation and IAD site assessments will be completed. Pediatric subjects who fail to improve within 3 days on the comparative product may be crossed over to Cavilon Advanced Skin Protectant product for up to 21 days. Pediatric subjects who fail to improve within 3 days on the Cavilon Advanced Skin Protectant may be discontinued from the study.

6.1 Randomization

Each subject will be randomized to receive either 3M™ Cavilon™ Advanced Skin Protectant or ConvaTec Sensi-Care® Protective Barrier skin protectant paste in a 1:1 ratio, using a randomization schedule prepared by a biostatistician. The randomization code will be provided using sealed envelopes. The Investigator is responsible to ensure that the study randomization is followed. The 3M study monitor must be notified within 24 hours of an emergency deviation from protocol.

Subjects enrolled at site will be given the numbers: xx-101 to xx-199. A subject who discontinues before the first IAD assessment, will be replaced with another qualified subject who will follow the same randomization scheme as the discontinued subject.

6.2 Blinding

Given the obvious differences between a paste versus a liquid delivered in an applicator, and the fact that the skin protectant paste can leave visible residues even after cleansing, the study nurse applying the products cannot be blinded.

6.3 Sample Size

102 eligible subjects will be enrolled in this study across approximately 13 centers, with 51 subjects being enrolled in each product group. it is expected that each center will enroll between 8 and 15 subjects. If it is determined that ineligible subjects were enrolled (e.g. without denudement at baseline or leaving the study prior to the first assessment day), additional subjects will be enrolled so that a total of 102 eligible subjects will be enrolled in the study.

6.4 Study Duration

In order to screen, enroll, and complete 102 evaluable subjects, an enrollment period of approximately 18-24 months is anticipated. Each adult subject may be followed for up to a maximum of 42 days or until the subject is discharged. Each pediatric subject may be followed for up to a maximum of 21 days or until the subject is discharged.

1. If the subject is discharged prior to 21 days, the subject will still have met the requirements for study completion.
2. Adult Subjects (>18years) can remain in the study for up to 21 days following enrollment receiving the Cavilon Advanced Skin Protectant or comparative product. All subjects will be discontinued at this point with the exception of the following 2 scenarios:
   - Subjects randomized to the comparative group, who fail to reach healing at the end of 21-day period with ongoing incontinence may be crossed over to the Cavilon Advanced Skin Protectant group and allowed to continue for up to an additional 21 days.
   - Subjects randomized to the Cavilon Advanced Skin Protectant group, who either re-epithelized or have a positive reduction in their IAD during the 21-day period, but remain hospitalized and continue to have incontinence, may continue to receive the Cavilon Advanced Skin Protectant product for up to an additional 21 days to evaluate prevention of IAD reoccurrence.
   - If a subject completely heals during the study, they may be discontinued at that time.
3. Pediatric Subjects Full term (37 weeks) to 18 years) can remain in the study for up to 21 days following enrollment receiving the Cavilon Advanced Skin Protectant product or comparative product. If the subject is discharged prior to 21 days, the subject will still have met the requirements for study completion.
   - Subjects randomized to the comparative group, who fail to improve (IAD) within 3 days of first application in the study may be crossed over to Cavilon Advanced Skin Protectant group and allowed to continue for up to an additional 21 days. The staff should cleanse the skin, complete skin assessments, and photographs prior to application of Cavilon Advanced Skin Protectant.
   - Subjects randomized to Cavilon Advanced Skin Protectant group, who fail to improve (IAD) within 3 days of first application in the study may be discontinued.
   - Subjects randomized to the product group, who either re-epithelized or have a positive reduction in their IAD during the 21-day period, but remain hospitalized and continue to have incontinence, may continue to receive the Cavilon Advanced Skin Protectant product for up to 21 days to evaluate prevention of IAD reoccurrence.
   - If a subject completely heals during the study, they may be discontinued at that time.

7. Study Endpoints

7.1 Primary Efficacy Endpoint

The primary efficacy endpoint will be percent change in IAD score from baseline to end of subject participation. The effect of skin protectants on clinical re-epithelialization of denuded skin in subjects with containment or resolution of urinary and/or fecal incontinence, as well as in subjects with ongoing urinary and/or fecal incontinence, will be observed. Skin condition will be determined using

clinical assessment data collected by means of a validated IAD skin assessment tool, and photographs.

7.2 Secondary Efficacy Endpoints

Secondary efficacy endpoints in this study will include:

- Re-epithelialization to a Category 1 or lower. The patient may still have erythema at the site. Pain scores during incontinence management will be measured on a 0-10 Faces Pain Scale Visual Analog and will be analyzed only for those adult subjects who can report pain. Pain scores during incontinence management will be measured on the FLACC scale for pediatric patients.
- Efficacy in subjects who switch from the comparative product to Cavilon Advanced Skin Protectant after failure to completely heal on the comparative product.
- Prevention of IAD, as measured by either:

o Areas of the buttocks that were free of IAD and remained free of IAD throughout the intervention
o IAD scores in subjects whose IAD improved and who continued on Cavilon Advanced Skin Protectantt.
o The proportion of subjects who have no progression of IAD, while still experiencing incontinence, will be estimated.

- Patient Quality of Life (QoL) as measured by the EQ-5D-5L questionnaire will be analyzed by comparing the change from baseline in each of the domains. The changes from baseline will be compared using an analysis of variance with center, product, type of skin (denuded or not), and interactions as factors in the model.
- Nursing time will be summarized for time and motion to be completed on 2 subjects at each participating study site (one patient in each arm of the study). Each subject will have time and motion measured during a fecal incontinence episode
- Incontinence product use will be recorded during the study, and summarized for both product groups. Product utilization, such as estimated cost per application, frequency of application and days of treatment will be considered. The purpose of this analysis is to provide estimates of total IAD management cost for both regimens.
- Prevention of complications such as fungal infections and or pressure ulcer development.
- Environmental cleanliness of multi-use comparative product packaging.

7.3 Safety Endpoints

Assessment of the safety of Cavilon Advanced Skin Protectant compared to the comparative product will be based upon analyses of the number and percent of subjects with an adverse event (AE) and the nature of each AE. The data will be summarized for each group based on the number and percent of subjects reporting AEs and will be summarized by product group and overall. In addition, AEs will be categorized and then summarized by relation to product and severity/intensity. Incidence of discontinuation will be summarized by reason for discontinuation for each product group.

8. Study Population

The study population will consist of subjects suffering from severe Category 2 Incontinence-Associated Dermatitis where the epidermis has been breached, or the skin is denuded, and who are

in a facility that provides nursing care 24 hours a day. Subjects' incontinence may be urinary and/or fecal, and can be continuous or non-continuous during the 21-day follow-up period. The subjects should not have any pre-existing fungal infections or stage 3, or stage 4 pressure ulcer(s) in the sacrococcygeal and buttock area. Subjects with Stage 1 or Stage 2 pressure ulcers maybe enrolled. (Note, no dressings are allowed for Stage I/II pressure ulcers.) Subjects with ostomies may be enrolled if the anal opening is present and there is evidence of denudement in the perianal or surrounding areas. Also subjects with fecal management systems may be enrolled if there is evidence of denudement in the perianal or surrounding areas. Subjects enrolled must meet the Inclusion/Exclusion criteria set forth in Section 8.1 and 8.2.

8.1 Subject Inclusion Criteria

Subjects may be enrolled into this study if the answers to all these questions are **yes**.

1. Is the subject a full-term newborn (37 weeks or greater gestational age) or older?
2. Is the subject in a facility providing nursing care 24 hours per day?
3. Does the subject have severe Category 2 Incontinence-Associated Dermatitis –red with skin breakdown (i.e. skin erosion and denudation or denudation of skin alone)?
4. Is the subject willing to have photos taken of their skin exposed to incontinence and permit use of photographs in potential publication?
5. Is the subject willing to release rights to 3M for the use of the photos?
6. Is there a reasonable expectation that the subject will remain in a facility for at least 7 days following enrollment in the study?
7. Has the subject, or their legally authorized representative, signed an Institutional Review Board-approved informed consent/assent document and authorized the use and disclosure of protected health information?

8.2 Subject Exclusion Criteria

Subjects are excluded from participation in this study if **any** of the answers to these following questions is yes.

1. If female, is the subject pregnant or breast feeding or has she given birth within the 3 weeks preceding the screening visit?
2. Does the subject have a known allergy to acrylates or cyanoacrylates?
3. Does the subject have a Stage III, IV, unstageable, suspected deep tissue injury pressure ulcer in the area where the skin is affected by incontinence?
4. Does the subject have a preexisting skin disease on the areas affected by incontinence that may make skin assessments for this study difficult?
5. Does the skin area affected by incontinence require treatment with a concomitant medication or product?
6. Does the subject have an active genital herpes infection?
7. Has the subject received antifungal powders in the area affected with IAD within 24 hours prior to enrollment?

8. Has the subject received cyanoacrylate based skin protectant (such as Marathon) within 72 hours prior to enrollment?
9. Is the facility unwilling to discontinue use for this subject of Dimethicone-containing wipes on the area where the skin protectant product will be applied?
10. Is the facility unwilling to discontinue use for this subject of Chlorhexidine Gluconate wipes on the area where the skin protectant product will be applied?
11. Does the subject have any medical condition that in the opinion of the investigator should exclude him/her from participating in the study?
12. Has the subject been enrolled in any investigational study where product was applied to proposed study sites within 30 days of the screening visit?

9. Subject Consent

The Investigator must ensure that written informed consent to participate in the study is obtained before including any individual as a subject in the study, and before conducting any study-related assessments. The Investigator must provide the prospective subject, or the prospective subject's legally authorized representative, with sufficient opportunity to consider whether or not to participate, and minimize the possibility of coercion or undue influence. The process is designed to 1) give the subject all the information that he/she needs, 2) ensure that the subject understands the information and 3) give the subject a chance to consider study participation. The process should permit the subject to ask questions and exchange information freely.

Specifically, the Investigator is to explain to each subject all elements of informed consent as specified in 21 CFR 50.25. This also includes explaining that photographs will be taken and may be used in publications in ways that do not identify the subject. After the explanation, the subject or legally authorized representative will voluntarily sign and date the consent/assent form if they wish to participate in the study. A copy of the consent/assent form must be provided to the subject or the subject's legally authorize representative. A signed and dated copy of the consent/assent form must be maintained in the Investigator Site File at all times. The informed consent process must be followed, and the subject's participation in the study, must be documented in the subject's medical record/chart.

9.1 Subject Authorization for Use and Disclosure of Protected Health Information (PHI)

The Investigator must ensure that written authorization for use and disclosure of protected health information is obtained before including any individual as a subject in the study.

Specifically, the Investigator is to explain to each subject all elements of authorization as specified in 45 CFR 164.508. After the explanation, the subject or legally authorized representative must voluntarily sign and date the authorization form if they wish to participate in the study. A copy of the authorization form must be provided to the subject or legally authorized representative. A signed and dated copy of the authorization form must be maintained in the Investigator Site File at all times and may be placed in the subject's medical record.

An authorization form may be combined with a consent/assent form (i.e. compound authorization) if required by the IRB. All required elements for both informed consent/assent and authorization must be included in a compound authorization.

9.2 Subject Revocation of Authorization to Use and Disclose Personal Health Information

In order to implement a valid revocation of authorization, the subject or their legally authorized representative must make the request in writing to the [Institution name and address]. The revocation cannot stop the use or disclosure of information that has been collected prior to the revocation, is needed to ensure complete and accurate study results, or is required by law or government regulation (e.g. reporting adverse events, etc.). Revocation of an authorization may not be used to withhold normal medical care from the subject, but may [or will] make the subject ineligible to receive study care.

9.3 Informed Consent in Regards to Decisionally Impaired Persons

The Principal Investigator and approved members of the study team will use their clinical judgment to assess if a potential participant is decisionally impaired. If a participant is found to be decisionally impaired, but is eligible for the study, the study team will seek consent from the legally authorized representative or next of kin. If the subject is capable of consent/assent, consent/assent of the subject will be obtained before they are entered into the study.

If a subject, previously determined to lack capacity to consent/assent, regains capacity during the study, the Investigator must obtain the consent/assent of the individual for the remaining part of the study.

9.4 Confidentiality of Data

The Principal Investigator will oversee the conduct of the study and all data will be kept confidential. Confidentiality will be maintained by using patient identification numbers instead of names. Consent forms, data collection sheets and records, linking a subject's name with their ID number will be maintained in a locked cabinet or locked office. Information to be stored on the computer will be identified by subject ID and will be password protected. Data disclosed outside the study team will be de-identified or will only include general group demographic information. Protected Health Information and/or identifiable study data will not be shared with anyone outside the study team or Health System, with the exception of the study sponsor, and federal regulators/ institutional officials for the purposes of auditing.

10. Screening and Enrollment

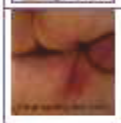
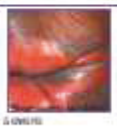
Subjects enrolled Week 1 will follow the following application/assessment schedule:
M-W-F, T-TH-SAT, W-F or Th-Sat.
Week 2 and Week 3 application/assessment schedule will always follow M-W-F schedule.
Subjects enrolling later in the week will need to be followed up by study coordinators for application 9 (M) in Week 4.

A representative from the site will complete the following screening and enrollment activities:

- **Obtain Informed Consent**
  - Explain the study to the subject, answer questions, and obtain written informed consent
- **Review the Inclusion/Exclusion Criteria.**
- **Perform assessments required by the Inclusion/Exclusion criteria.**
  - Collect urine sample and perform urine pregnancy test for female subjects who are of childbearing age. If the subject is post-menopausal, no pregnancy test is required.

3M is using the IAD Severity Categorisation Tool from Beeckman D et al Proceedings of the Global IAD Expert Panel (2015) for current classification of IAD. Attached below is Table 1, IAD Severity Categorisation Tool displaying the severity of IAD and associated signs for the study investigators use in categorizing subjects. Only subjects with a Category 2 level of IAD will be enrolled into this study.

TABLE 1 | IAD Severity Categorisation Tool

Clinical presentation	Severity of IAD	Signs**
	No redness and skin intact (at risk)	Skin is normal as compared to rest of body (no signs of IAD)
	Category 1 – Red* but skin intact (mild)	Erythema +/-oedema
 	Category 2 – Red* with skin breakdown (moderate-severe)	As above for Category 1 +/-vesicles/bullae/skin erosion +/- denudation of skin +/- skin infection
* Or paler, darker, purple, dark red or yellow in patients with darker skin tones **If the patient is not incontinent, the condition is not IAD		

If a subject does not meet all the Inclusion/Exclusion criteria, and is excluded from the study, the reason(s) for exclusion will be documented on the Screening Log.

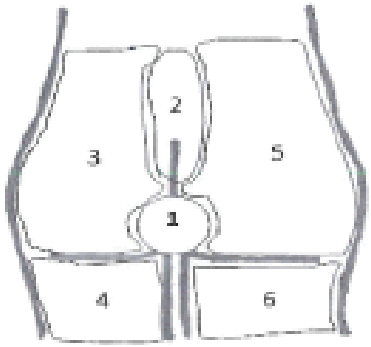
If a subject meets all the Inclusion/Exclusion criteria, the Investigator or study nurse will obtain and open the randomization envelope to determine which product group the subject has been assigned to. The study nurse will complete the following remaining screening activities:

- **Record subject demographics.**
- **Obtain and record IAD history.**
- **Obtain and record information describing current medications and IAD treatment.**
  - Oral or systemic medications prescribed by the subject's physician are allowed and will be noted on the appropriate CRF.

- Incontinence-related devices (such as urinary catheters, pads, diapers, etc.) are allowed and will be noted on the appropriate CRF.
- Use of moisture barrier, creams, ointments, pastes, or other topical medications in combination with the Cavilon Advanced Skin Protectant product for the management of IAD is **not** allowed.
- If subjects had prior barrier film products on their skin, use the Brava Adhesive Remover Wipe.

- **Conduct pressure ulcer risk assessment using Braden Scale.**
- **Administer Quality of Life questionnaire.**
- **Perform skin cleansing:**
  - Use 3M™ Cavilon™ No-Rinse Skin Cleanser (to be provided by 3M) or warm tap water and soft cloths.
  - Avoid rigorous scrubbing to minimize friction damage.
  - Record pain score assessment using Faces Pain Scale Visual Analog before and after cleansing for adults or the FLACC scale for pediatrics during the cleansing process.
- **Conduct skin assessment:**
  - Complete a skin assessment of the following six zones for its color, presence of lesions, and skin loss. Only subjects with denuded skin may be enrolled. The IAD score will be calculated electronically once results are entered into computer system using 3M's validated Skin Condition Assessment Tool (see Appendix A).

Zone 1:	Includes the anus and 2 inches surrounding anal opening plus: for males score the scrotal sac and females the labia majora.
Zone 2:	Crease between buttocks, above the anal opening and 2-3 inches below natural waistline
Zone 3:	Left buttock starts above fold between thigh and buttock and extends upward to 2-3 inches below natural waistline
Zone 4:	Left Posterior and medial upper thighs
Zone 5:	Right buttock starts above fold between thigh and buttock and extends upward to 2-3 inches below natural waistline
Zone 6:	Right Posterior and medial upper thighs



The score for each of the six (6) body zones will then be combined to obtain a single IAD score for the subject.

- **Take photographs:**
  - Position the subject appropriately in order to capture all affected body zones.
  - Take photograph including a paper ruler in the picture.
  - Download photographs immediately to the EDC system.
  - Biomedical Systems is an outside vendor who will QC the photographs for correcting the color quality.

11. Study Assessments

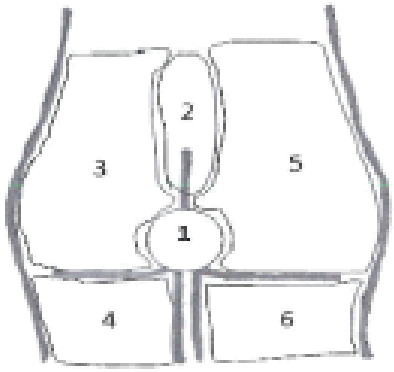
11.1 Investigational Product Group and Comparative Group

The following assessments will be completed **3 times per week (i.e. on dosing days M-W-F or T-Th-Sat, W-F or TH-Sat)** for subjects enrolled:

- **Perform Skin Cleansing**
  - Use 3M™ Cavilon™ No-Rinse Skin Cleanser or warm tap water and soft cloths.
  - Avoid rigorous scrubbing to minimize friction damage.
  - Record pain score using Faces Pain Scale Visual Analog for adults or FLACC scale for pediatrics
- **Time and Motion (Completed on one subject in each product group at each site)**
  - **This should be done after you have experience with applying both products. Preferably dose 2 or later**
  - Document the time taken to cleanse the skin during a fecal incontinence episode
  - Document the amount of supplies needed to cleanse the skin, as well as the cleansing procedures employed
  - Record pain score using Faces Pain Scale Visual Analog for adults or FLACC scale for pediatrics during cleansing and at product application.

- **Conduct Skin Assessment**
  - Complete a skin assessment of the following six zones for its color, presence of lesions, and skin loss.

Zone 1:	Includes the anus and 2 inches surrounding anal opening plus: for males score the scrotal sac and females the labia majora.
Zone 2:	Crease between buttocks, above the anal opening and 2-3 inches below natural waistline
Zone 3:	Left buttock starts above fold between thigh and buttock and extends upward to 2-3 inches below natural waistline
Zone 4:	Left Posterior and medial upper thighs
Zone 5:	Right buttock starts above fold between thigh and buttock and extends upward to 2-3 inches below natural waistline
Zone 6:	Right Posterior and medial upper thighs



- IAD score will be calculated using 3M's validated Skin Condition Assessment Tool (see Appendix A)

- **Take Photographs**
  - Position the subject appropriately in order to capture all 6 zones of the buttocks.
  - Take the photograph including the paper ruler in the picture.
  - Download photographs immediately to the EDC system for review by CRA.
- **Medications**
  - Review and record changes to current medications.
- **Adverse Events**
  - Assess and record adverse events. Immediately report any Serious Adverse Event. (Refer to Adverse Event CRF instructions).
- **Incontinence Episodes Care and Tracking**
  - At each incontinence care episode, cleanse the skin with 3M™ Cavilon™ No-Rinse Skin Cleanser or warm tap warm with soft cloths. Gently dry. Avoid rigorous scrubbing to minimize friction damage.
  - **Do not reapply Cavilon Advanced Skin Protectant between each incontinence cleansing episode. Follow the dosing schedule of either:**
  - **M-W-F, T-TH-Sat, W-F or TH-Sat for week 1. Week 2 &3 follow M-W-F.**
  - For the comparative arm – product must be applied at every incontinence cleansing episode.
- **Healthcare Worker Ease of Use Survey (only after first dosing)**
  - Complete product Ease of Use survey following application of Cavilon Advanced Skin Protectant
- **Cavilon Advanced Skin Protectant Product Application**
  - Following cleansing, the 3M™ Cavilon™ Advanced Skin Protectant will be applied 3 times a week following the M-W-F dosing schedule.
  - A thin coat of the Cavilon Advanced Skin Protectant will be painted on or dabbed onto the area covering the entire 6 zones. The Cavilon Advanced Skin Protectant product contains 2.4 mL of material which can cover a maximum area of 25 cm X 25 cm or 10 inches X 10 inches.

- More than one applicator may be necessary depending on the surface area involved. In the event that the contents of one applicator are not sufficient to cover the area requiring protection, additional applicators can be used as needed. Record the number of applicators used.
    - For subjects with IAD in the perineal area (front of body), the same product (either Cavilon Advanced Skin Protectant or comparative product) should be applied in the perineal area. This area will not be graded for IAD, but application of product in this area will be noted on the case report forms and the number of applicators used for the perineal area will be tracked separately from the applicators used on the buttocks.
- If there should be a need for product removal, use adhesive remover and gently wipe the area.
- Document the amount of product required to cover the entire affected area
- Record pain score using Faces Pain Scale Visual Analog before and after product application

- **Clean Trace ATP System Evaluation after Sensi-Care Product Application**
    - After all photos, patient assessments and **after** product application are completed, the Sensi-Care tube of paste used will be swabbed for environmental contamination using 3M Clean Trace ATP System.

- **ConvaTec Sensi-Care® Protective Barrier Paste Application**
    - ConvaTec Sensi-Care® Protective Barrier Paste, which will be provided by 3M, will be applied after each incontinence episode, per the manufacturer's instructions, during the 21 day follow-up period following cleansing of the skin.
    - Use enough product to cover the affected area and beyond the margins.
    - For subjects with IAD in the perineal area (front of body), the same product (either Cavilon Advanced Skin Protectant or comparative product) should be applied in the perineal area. This area will not be graded for IAD, but application of product in this area will be noted on the case report forms and the amount of product used for the perineal area will be tracked separately from the amount of barrier paste used on the buttocks.
    - Record pain score using Faces Pain Scale Visual Analog before and after Sensi-Care application.
- **Study Duration – 3M Cavilon Advanced Skin Protectant**
    - Subjects can remain in the study for up to 21 days following enrollment. If the subject is discharged prior to 21 days, the subject will still have met the requirements for study completion.
    - If the subject no longer has incontinence and heals completely with scores of normal healthy skin before 21 days, they can be discontinued from the study as completing the study.
    - Adult or pediatric subjects randomized to the Cavilon Advanced Skin Protectant product group, who either re-epithelialized or have a positive reduction in their IAD during the 21-day period, but remain hospitalized and continue to have incontinence, may continue to receive the Cavilon Advanced Skin Protectant product for up to an additional 21 days to evaluate prevention of IAD reoccurrence.

- Pediatric subjects that fail to improve (IAD) within 3 days while on the Cavilon Advanced Skin Protectant product may be discontinued.

- **Study Duration- ConvaTec Sensi-Care® Protective Barrier Paste Group**
    - Subjects can remain in the study for up to 21 days following enrollment. If the subject is discharged prior to 21 days, the subject will still have met the requirements for study completion.
    - If the subject no longer has incontinence and heals completely with scores of normal healthy skin before 21 days, they can be discontinued from the study as completing the study.
    - Adult subjects randomized to the comparative group, who fail to reach healing at the end of 21-day period with ongoing incontinence may be crossed over to Cavilon Advanced Skin Protectant group and allowed to continue for up to an additional 21 days.
    - Pediatric subjects that fail to improve (IAD) within 3 days while on the comparative product may be crossed over to Cavilon Advanced Skin Protectant. The staff should cleanse the skin, complete skin assessments, and photographs prior to application of Cavilon Advanced Skin Protectant.
- **Additional Observation**
    - Observe all 6 zones for any signs of fungal infections and /or pressure ulcers.

11.2 Final Study Visit

The subject's participation in this study is completed after 21-42 -days of follow-up or when the subject is discharged from the facility. At the final visit the following assessments will be completed:

- **Medications**
    - Review and record changes to current medications.
- **Adverse Events**
    - Assess and record adverse events. Immediately report any Serious Adverse Event. (Refer to Adverse Event CRF instructions).
- **Perform Skin Cleansing and record pain score before and after cleansing**
- **Conduct Skin Assessment**
- **Take Photographs**
- **Administer Quality of Life questionnaire**
- **Healthcare Worker Ease of Use Survey**
    - Complete end of study product Ease of Use survey
- **Documentation**
    - Complete and check all documentation.

Schedule of Events

Assessment	Screening/ Enrollment	D1 /23	D2 /24	D3 /25	D4 /26	D5 /27	D6 /28	D7 /29	D8 /30	D9 /31	D10 /32	D11 /33	D12 /34	D13 /35	D14 /36	D15 /37	D18 /38	D17 /39	D18 /40	D19 /41	D20 /42	D21 /43	End of Study/ D22/D44
Informed Consent	X																						
Inclusion/Exclusion	X																						
Urine Pregnancy Test	X																						
Demographics	X																						
IAD History & Current Product Use	X																						
Medications	X	X																					X
Pressure Sore Risk Assessment	X																						
Quality of Life questionnaire	X																						X
Skin Cleansing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
*Skin Cleansing – Timing & Product Use	X			X																			
Skin Assessment / IAD scoring	X	X		X		X			X		X		X			X		X		X			X
Photographs	X	X		X		X			X		X		X			X		X		X			X
Sensi-Care Product Application Arm		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Cavilon Application		X		X		X			X		X		X			X		X		X			
Clean Trace Assessment				X		X			X		X		X			X		X		X			
*Product Application – Timing & Product Use				X																			
Healthcare Worker Ease of Use Survey		X																					X
Incontinence Episode Care/Tracking		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adverse Events		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

*** Only required for first Subjects in each product group**

12. Subject Discontinuation

The Investigator may discontinue individual subjects from the study at any time. Subjects may voluntarily withdraw from the study at any time. The Investigator or study nurse will indicate on the appropriate CRF reason for, and date of, subject discontinuation.

Possible reasons for discontinuation are listed below:

- A subject develops a pressure ulcer in the sacral area (stage 3, 4, or unstageable, or any Deep Tissue Injury). The data from such a subject will be kept and analyzed to include the time during which the subject was in the study without a pressure ulcer.
- A subject develops a bacterial or fungal infection in the area included in the study or any other condition requiring the use of a topical treatment. Data collected up to the time where the subject required topical treatment will be analyzed.
- A subject develops any condition which, in the opinion of the Investigator, requires discontinuation from the study. If this condition is a suspected localized allergic reaction to the Cavilon Advanced Skin Protectant product, then appropriate testing confirmation should be performed and results/reports should be submitted to 3M. In addition, the event should be entered on the Adverse Event CRF.

The expectation is that subjects will be enrolled in this study for a period of 21 days. A subject who discontinues before the second IAD assessment, will be replaced with another qualified subject who will follow the same randomization scheme as the discontinued subject.

Subjects discontinued from the study will be returned to standard care and no further follow-up for this study will be performed.

13. Subject Compliance

Subject compliance is not an issue in this study as subjects will not be applying the product themselves. CRFs will be used to monitor the number of cleansing episodes, and number of product application(s), performed by skilled care givers.

14. Study Supplies

14.1 Investigational Product

3M will label, package, and ship the Cavilon Advanced Skin Protectant product to each research facility participating in the study. Each Cavilon Advanced Skin Protectant pouch will be labeled with the following minimum information:

- Study Number EM-05-012990
- 3M Health Care, St. Paul, MN 55144-1000
- 3M™ Cavilon™ Advanced Skin Protectant
- Lot number PPE-R30-01
- Package content: single-use applicator with ampoule
- Non-sterile Solution. Applicator is sterile if package is intact

- Use as directed in protocol. See Instructions for Use.
- **DANGER! HIGHLY FLAMMABLE!**
- Store at room temperature
- Expiration date July 2017

Instructions for Use (IFU) is provided in Appendix B.

14.2 Other Products

Other products supplied by the sponsor will contain a label indicating that these materials are for use in this study. Each commercial product supplied by the sponsor will be in the product's original commercial packaging.

The following materials will be provided:

- 3M™ Cavilon™ No-Rinse Skin Cleanser , #3380 (Appendix C)
- ConvaTec Sensi-Care® Protective Barrier (part number 325614) skin protectant paste with zinc oxide (Appendix D)
- Colorplast Brava™ Adhesive Remover Wipe
- Medline Ultra Soft Dry Disposable Washcloths (UltraSoft10x13)

14.3 Photographic Equipment

3M will provide all photographic supplies necessary for the conduct of this study through vendor, Biomedical Systems. At the conclusion or termination of this study, the Investigator agrees to return all cameras and photographic materials, provided by 3M, in accordance with instructions provided by the study monitor. Biomedical Systems will provide all cameras preset to the same setting for all sites as well as QC photographs. Use of the cameras and downloading photographs to the eDC system will be provided by Biomedical Systems.

15. Cavilon Advanced Skin Protectant and ConvaTec Sensi-Care Protective Barrier Accountability

3M requires Investigators to maintain accountability and adequate inventory security of the Cavilon Advanced Skin Protectant product and comparative product at all times. The Investigator or designee will:

- Upon receipt of Cavilon Advanced Skin Protectant product, check the contents and return the completed Confirmation of Release and Receipt of Clinical Supplies form to the sponsor's study monitor.
- Keep Cavilon Advanced Skin Protectant product in a secure storage area, accessible only to authorized individuals
- Dispense Cavilon Advanced Skin Protectant product only to subjects properly enrolled in the study
- Return all unused Cavilon Advanced Skin Protectant product to 3M at the end of the study, or dispose of as agreed upon

16. Data Collection

16.1 Source Data

Case Report Forms (CRFs) will be provided for each subject. All required data will be recorded on the CRFs. Completed CRFs will be reviewed by the site monitor to ensure completeness and consistency and to ensure adequate quality control and assurance of subject data. Any discrepancies found during CRF review are to be clarified by the Investigator or designee.

The subjects' medical records will be the source data for medical history and current IAD treatment regimen. Data collection forms will also be used. Data collection forms are source documents which must be retained by the Investigator such as the 3M validated Skin Condition Assessment Tool. Information and data recorded on a data collection form must be accurately transcribed to the appropriate CRF. Discrepancies between a medical record, or data collection form, and a CRF are to be resolved by the Investigator or designee.

The Investigator or designee must record all required subject data. An explanation must be documented for any missing data. The Investigator must attest that the data provided represents a complete and accurate record of each subject's participation in the study.

16.2 Computerized Systems

The following systems: eMatrix, SAS version 9.2, Word, and EDC, will be used to create, modify, maintain, archive, retrieve, transmit, analyze, and store data.

16.3 Case Report Forms

3M intends to use electronic data capture (EDC) software for this study. Sites will be trained on the EDC software prior to study enrollment. Each site will be provided with a manual, including instructions on how to complete the electronic CRFs and how to make CRF corrections. Data may be recorded on data collection sheets prior to data entry into the EDC, or may be entered directly into the EDC system. Once the forms are completed, the monitor will review the CRFs to ensure accuracy and completeness. The Investigator must review and sign the CRFs for each subject in a timely fashion following completion. Data for this study will be entered on the CRFs:

CRF	Screening & Enrollment	Days 1-22 or early discharge	Days 23-42 or discharge	End of Study
Inclusion/Exclusion	x			
Subject History	x			
Medications	x	x	x	x
Braden Scale	x			
EQ-5D-5L Questionnaire	x		x	x
Incontinence Care		x	x	x
IAD History & Initial Skin Assessments	x			
3M Skin Assessment		x	x	x
Product Application		x	x	
Healthcare Worker Ease of Use Survey		x	x	x
Incontinence Episodes		x	x	x
Adverse Event		x	x	x
Protocol Deviation		x	x	x
Study Exit				x

17. Potential Risks and Benefits

17.1 Study Risks

The potential risks involved in this clinical study are considered to be consistent with those associated with similar skin protectant products used for the management and prevention of IAD. At this time, there are no known risks associated with Cavilon Advanced Skin Protectant.

17.2 Risk Minimization Actions

Additional risks may exist. Measures which have been taken to minimize risks include:

- The selection of Investigators trained in IAD management and prevention
- Specific Investigator and study nurse training on the use of Cavilon Advanced Skin Protectant
- A well-defined clinical protocol, including specific inclusion/exclusion criteria, to enroll appropriate subjects in the study

Risks can be minimized at the clinical site through:

- Compliance with this protocol
- Performing assessments in the appropriate hospital environment
- Adherence to subject inclusion/exclusion criteria
- Close monitoring of the subject's status during follow-up

17.3 Anticipated Benefits

The potential benefit of this product is that it will provide better skin protection of damaged skin against irritants such as feces and/or urine versus currently available skin protection products such as pastes and ointments. In addition, it is able to attach to moist or wet, damaged skin forming an adherent, protective coating that creates an environment for healing. Furthermore, it provides a durable coating that resists removal with routine cleansing practices; therefore fewer applications of barrier film are needed. Unlike current protective paste products, stool does not embed into the film, preventing the need for more frequent and potentially irritating cleansing episodes. The investigational product is expected to be more comfortable for patients to wear and does not transfer to other surfaces such as undergarments, absorbent pads, and bedding. These properties make the product more user friendly for both patients and clinicians.

17.4 Risk to Benefit Rationale

The study product is investigational and is classified as non-significant risk. Based on data collected in previous studies, the risk-to-benefit ratio is within reason for foreseeable risks. However, appropriate observation and follow-up of subjects, will still be required as outlined in the protocol.

18. Safety Reporting

Adverse events will be collected for subjects beginning at Day 1 through the final study visit, or until the subject is discharged from the facility. An adverse event is any symptom, sign, illness, or experience, which develops or worsens during the course of the study, which may or may not be considered investigational product related. The principal measures of safety will be the incidence of adverse events reported during the study.

An anticipated adverse event in this study is a skin reaction to the investigative product itself. Worsening of IAD is expected in this subject population and would therefore not constitute an adverse event (related to the product being tested).

The Adverse Event CRF will be used to capture any safety-related concerns.

18.1 Adverse Events

The Investigator is responsible for identifying and reporting adverse events experienced by each subject throughout the study. An adverse event can occur at any time during the conduct of the study, in any phase of the study, or after the study is completed. An adverse event can be identified by the Investigator or reported by the subject.

Note: The Federal Privacy Rule (HIPAA) specifically permits the use and disclosure of protected health information "without written authorization of the individual" when used for public health activities such as reporting adverse events, tracking FDA-related products, enabling recalls, repairs, replacements, lookbacks, or conducting post-market surveillance [45 CFR 164.512]. This use and disclosure is subject to the *minimum necessary* standard, i.e. "the minimum necessary to accomplish the intended use, disclosure, or request" [45 CFR 164.502(b)(1)].

An adverse event is considered to be **serious** if it is:

- Life threatening of results in death
- Causes in-patient hospitalization
- Unduly prolongs hospitalization
- Persistently or significantly disabling
- A congenital anomaly
- Requires intervention to prevent outcomes above

Severity:

All adverse events will be classified as one of the following severities:

Mild: Subject is aware of signs or symptoms but they are easily tolerated.

Moderate: Signs or symptoms are sufficient to restrict but not prevent subject's daily activity.

Severe: Subject unable to perform daily activity.

Definitions:

- **Adverse event (AE)** means any undesirable clinical occurrence in a subject whether or not it is considered to be device related.

- **Device-related adverse event** (i.e. adverse device effect) is an AE considered by the Investigator to have a reasonable likelihood of being associated with the investigational device.

- **Serious adverse device effect (SADE)** is a device effect that has a serious adverse effect on health or safety causing hospitalization or prolonged hospitalization, or is life threatening or causes death.

- **Unanticipated adverse device effect (UADE)** is any serious adverse device effect on health or safety or any life-threatening problem or death caused by, or associated with a device if that effect, problem or death was not previously identified in nature, severity or degree of incidence in the investigational plan or application, or any other unanticipated serious problem associated with a device that relates to rights, safety and welfare of subjects.

18.2 Adverse Event Recording and Reporting

All adverse events will be recorded on the Adverse Event CRF. The Investigator will record each product-related adverse event on an Adverse Device Effect Record. Event documentation will include the description, severity, seriousness, date of onset and resolution, relationship to the investigational product, action taken, and outcome.

Relatedness:

Definitely related: Follows a reasonable temporal sequence from investigational product application, and cannot be reasonably explained by known characteristics of the patient's clinical data.

Possibly related: Follows a reasonable temporal sequence from investigational product application but could have been produced by the patient's clinical state regardless of the investigational product.

Probably not related: Temporal association is such that the investigational product is not likely to have had any reasonable association with the observed event.

Not related: No relationship to investigational product is perceived.

The Investigator must promptly report an adverse device effect to the site monitor. If the adverse device effect is also considered by the Investigator to be serious and/or unanticipated, the Investigator must report it to the IRB as soon as possible and within IRB requirements.

A serious adverse event (SAE) involving a non-3M commercialized product is to be reported to the site monitor and the IRB.

If a subject has no adverse device effect during the study, the absence of such must be recorded on the CRF.

19. Statistics

19.1 Statistical Methods

19.1.1 Efficacy Analyses

The primary analysis will be the percent change from baseline to last visit in IAD scores. The IAD score at each time point will be estimated using the assessments at each time point. The percent change from baseline will be calculated at the last visit and compared between treatment groups using an analysis of variance with site, treatment, age group (infants vs adults) and interactions as factors in the model. Lack of significance ($P<0.05$) for the age group-by-treatment will be used as justification for pooling the age groups. If the interaction is significant, the age groups will be analyzed separately. If appropriate, non-parametric procedures (e.g. ranking the data prior to analysis) will be used.

The primary analysis will be done using an intent-to-treat (ITT) population, using all subjects who have at least one dose of their assigned product. For this analysis, dropouts will be considered censored at the time of dropping out. Because two primary endpoints are being tested, Hocherg's procedure will be used to determine statistical significance to preserve the Type I error rate of $\alpha=0.05$.

A second analysis will be done using a per protocol (PP) set. This analysis will be done on those subjects who were compliant with therapy and completed all procedures. This dataset will be defined prior to database lock, and all reasons for exclusion will be documented.

Analytical methods will be defined in detail in the approved Statistical Analysis Plan (SAP).

Secondary efficacy endpoints in this study will include:

- Time to resolution of severe Category 2 IAD, defined as re-epithelialization of skin. The time to resolution will be tested using a Cox Proportional Hazards model, with treatment group as a fixed factor in the model, and center as a random factor in the model. Other important prognostic factors (e.g., age, type and intensity of incontinence, use of corticosteroids, diabetes, use of warfarin) will be identified and may be included as covariates in the model. Kaplan-Meier estimates of time to re-epithelialization will also be done.
- Pain scores during incontinence management will be measured on a 0-10 scale, and will be analyzed only for those subjects from the ITT dataset who can report pain. This dataset will exclude those who are paraplegic or cannot respond. Infant pain will be measured with the FLACC tool[42], and adults with the 0-10 Faces tool, and the data will be combined for statistical analysis. For this dataset, the pain scores will be compared by day using an analysis of variance with center, product, age group (infants vs adults), and interactions as factors in the model. If the age group-by-treatment interaction is significant ($P<0.05$), the data will be analyzed by age group. This response will be considered significant using a Hochberg's procedure for adjusting the P-values for this and the other secondary response of time to re-epithelialization.

- The proportion of subjects on each treatment group with stinging or burning upon application will be compared using a Cochran-Maentel-Haenzel test, stratifying for center.
- Percent change in IAD scores at each visit.
- Efficacy in subjects who switch from the comparative product to the investigational product after failure on the comparative product. For this analysis, the proportion of subjects with resolution of IAD as defined above will be estimated.
- Prevention of IAD in areas that had no denuded skin and remained free of IAD throughout the intervention. This will be estimated and tested using a Cox Proportional hazard model.
- Prevention of IAD, as measured by IAD scores in subjects whose IAD re-epithelialized and who continued on the investigational product. The proportion of subjects who have no progression of IAD, while still experiencing incontinence, will be estimated.
- Patient Quality of Life (QoL) as measured by the EQ-5D-5L questionnaire will be analyzed by comparing the change from baseline in each of the domains. The changes from baseline will be compared using an analysis of variance with center, product, type of skin (denuded or not), and interactions as factors in the model.
- Nursing time will be summarized for a fecal episode occurring post Dose 1 (after first treatment) for a subset of subjects. The nursing times will be summarized for both product groups.
- Incontinence product use will be recorded during the study, and summarized for both product groups. The purpose of this analysis is to provide estimates of total IAD management cost for both regimens.
- Prevention of complications such as fungal infections and or pressure ulcer development will be summarized.
- Environmental cleanliness of multi-use comparative product packaging. The definition of a "clean" device will be one with a reading of <200. The proportion cleaned will be summarized.

19.1.2 Safety Analyses

Overall incidence of adverse events will be documented and compared between product groups. This analysis will be carried out for all subjects who are randomized.

19.1.3 Health Economics Analysis

The material used and nursing time spend to treat subjects with fecal or double incontinence over a three week (or shorter) period will be analyzed using an appropriate regression model. Detailed will be provided in the SAP.

19.2 Sample Size Justification

From a pilot study, the standard deviation of the percent change from baseline was estimated at 70%. A sample size of 51 patients per treatment group has at least 80% power to detect a mean difference of 45% change from baseline. The hypotheses tested will be:

H_O: $\mu_T = \mu_C = 0$ versus H_A: $\mu_T \neq \mu_C$, where the subscript T = the investigational product and C = Control, the paste product.

19.3 Interim Analyses and Criteria for Termination of the Study

Also, one interim analysis will be done after half of the subjects are enrolled. The P-value for this analysis will be adjusted using an O'Brien-Fleming method, and will be considered significant at P <0.0056. Data from this interim analysis will be used to re-estimate the sample size, based on the primary analysis. To minimize bias, the study personnel will remain blinded to the results. The result for the analysis after all subjects are complete will be considered significant at P <0.0483

19.4 Procedures for Accounting for Missing, Unused, and Spurious Data

Subjects who are replaced will not be included in the primary analysis as they will be missing any efficacy data (any IAD assessment). These subjects will be accounted for in the final report. Missing critical efficacy data such as the time to first healing of the IAD or time to significant IAD score reduction will be imputed using last observation carried forward. Also, a sensitivity analysis will be performed on the primary endpoint considering all dropouts in both treatment groups as worsening IAD.

Subject excluded from any subset or per protocol analysis will be documented and justified in the pre-lock meeting minutes.

19.5 Deviations to Statistical Plan

Any deviation from the original statistical plan will be described and justified in the SAP and/or final report.

20. Protocol Modifications

20.1 Protocol Amendments

The party initiating an amendment must confirm it clearly in writing using the Amendment/ Administrative Revision form. It must be signed and dated by 3M and, in the case of a significant amendment, the Investigator. A significant amendment means one that affects the safety, rights or welfare of subjects, the scope of the investigation, or the scientific quality of the study.

3M will submit significant protocol amendments to the Investigator for submission to the IRB. 3M will also notify the Investigator when a protocol amendment may be implemented.

20.2 Protocol Deviations

A protocol deviation is a departure from the protocol that will likely affect the safety, rights or welfare of subjects, the scope of the investigation, or the scientific quality of the study.

A protocol deviation is only for an individual subject. Protocol deviations are documented on a Protocol Deviation CRF.

Deviations that potentially affect 1) subject safety, rights or welfare, 2) data integrity or 3) compromise the statistical analysis of the study require immediate communication to 3M. Each protocol deviation will be documented by completing a Protocol Deviation CRF. This documentation will include the type of deviation and a description of the circumstances surrounding the deviation.

Deviations which are made to protect the life or physical well-being of a subject in an emergency must be reported to the IRB within 5 working days after 3M learns of the occurrence.

21. Compliance

This study will be conducted in accordance with the relevant parts of the ICH Guidelines for Good Clinical Practices, ethical principles that have their origins in the Declaration of Helsinki, and FDA 21 CFR Part 820. The study shall not begin until the required IRB approval has been obtained. The IRB will review all appropriate investigational documentation in order to safeguard the rights, safety and well-being of subjects. The study will only be conducted at sites where IRB approval has been obtained. The clinical protocol, informed consent, written information given to the subjects, safety updates, progress reports, and any revisions to these documents, will be provided to the IRB by the Investigator. Any additional requirements imposed by the IRB shall be followed, if appropriate.

22. Investigator Responsibilities

The Principal Investigator of a clinical site is responsible for ensuring that the study is conducted in accordance with the Clinical Study Agreement, the protocol, ICH guidelines for Good Clinical Practice, FDA 21 CFR Part 1271, ethical principles that have their origins in the Declaration of Helsinki, any conditions of approval imposed by the reviewing IRB, whichever affords the greater protection to the subject.

The Principal Investigator's responsibilities include, but are not limited to, the following:

- Prior to beginning the study, sign the Investigator Agreement and Protocol Signature page documenting his/her agreement to conduct the study in accordance with the protocol.
- Make no changes in or deviate from this protocol, except to protect the life and physical well-being of a subject in an emergency; document and explain any deviation from the approved protocol that occurred during the course of the clinical study.
- Create and maintain source documents throughout the clinical study and ensure their availability with direct access during monitoring visits or audits; ensure that all clinical study-related records are retained per requirements.
- Ensure the accuracy, completeness, legibility, and timeliness of the data reported to the sponsor in the CRFs and in all required reports.
- Record, report, and assess every adverse event.
- Report to the IRB any SAEs, and supply 3M with any additional information related to the safety reporting of a particular event.

- Maintain the investigational product and comparative product accountability records and control of the product, ensuring that the study product is used only by authorized/designated users and in accordance with this protocol and Instructions for Use.
- Allow 3M or designee to perform monitoring and auditing activities, and be accessible to the monitor and respond to questions during monitoring visits.
- Allow and support regulatory authorities and the IRB when performing auditing activities.
- Ensure that informed consent is obtained in accordance with this protocol and local IRB requirements.
- Inform the subject of any new significant findings occurring during the clinical study, including the need for additional medical care that may be required.
- Ensure that clinical medical records are clearly marked to indicate that the subject is enrolled in this clinical study.
- Ensure that the center facilities and study team are adequate and are maintained and documented for the duration of the clinical study.

22.1 Delegation of Responsibility

When specific tasks are delegated by an Investigator, including but not limited to conducting the informed consent process, the Investigator is responsible for providing appropriate training and adequate supervision of those to whom tasks are delegated. Delegation of responsibilities will be assigned and recorded on the Delegation of Authority Log. Any changes to responsibilities must be approved by the Investigator. The Investigator is accountable for regulatory violations resulting from failure to adequately supervise the conduct of the clinical study.

22.2 Institutional Review Board

Prior to gaining approval to enroll subjects in the study, the clinical site will provide 3M with documentation verifying that their IRB is registered.

A copy of the written IRB approval of the protocol and Informed Consent Form, must be received by 3M before recruitment of subjects into the study and shipment of the investigational product. Prior approval must also be obtained for other materials related to subject recruitment or which will be provided to the subject.

Annual IRB approval and renewals will be obtained throughout the duration of the study as required by the IRB. Copies of the Investigator's reports, and the IRB continuance of approval, must be provided to 3M.

23. Data Handling and Record Keeping

23.1 Study Personnel

Prior to study initiation, the Investigator must provide 3M with a signed Investigator Agreement (Statement of Investigator). The Agreement contains pertinent Investigator information (e.g. qualifications, experience, etc.) as well as the Investigator's commitment to conduct the study according to the protocol and all applicable state and federal regulations.

23.2 Pre-Study Documentation Requirements

Prior to study initiation, the Investigator must provide 3M with the following documents:

- Signed protocol including any amendments in place prior to study initiation
- Curriculum vitae for the Investigator and any Sub-Investigators
- IRB approved consent form
- HIPPA authorization form
- IRB study approval letter
- IRB name, location and chairperson
- Financial Disclosure documents per 21 CFR 54
- Signed Clinical Study Agreement

23.3 Records Retention

The Principal Investigator or the clinical site will maintain, at the site, in their original format all supporting study documents and source documentation for data collected on study subjects.
The Investigator will maintain the required study records during the investigation and for a minimum of 2 years after the latter of the following two dates: The date on which the study is terminated or completed, or the date the records are no longer required for purposes of supporting a regulatory submission.
Records that must be maintained by the Investigator include, but are not restricted to:

- Signed study protocol, amendments, deviations
- IRB approval of protocol, consent form, authorization form*, waiver of consent and/or authorization and amendments to any of these documents
- Applications to the IRB
- Signed consent and authorization forms
- Case report forms
- Adverse event reports
- Records of receipt, use or disposition of the investigational product
- Correspondence relating to the study
- Investigator brochure
- Financial disclosure documents
- Sponsor Final Report

23.4 Records Custody

If the Investigator withdraws from the study, or relinquishes his/her responsibility for maintaining these essential documents, custody must be transferred to an individual who will assume responsibility and 3M must receive written notification of the custodial transfer.

23.5 Final Report

3M will prepare and submit a Sponsor Final Report to all reviewing IRBs within 6 months after study completion or termination.

24. Clinical Monitoring

3M, as sponsor of this study, is responsible for ensuring the proper conduct of the study with regard to protocol adherence and validity of the data recorded on the CRFs. 3M has assigned the monitoring of this study to a Contract Research Organization (CRO). Monitoring will be performed during the study to assess continued compliance with the protocol and applicable regulations. In addition, the site monitor will verify that study records are adequately maintained, and that data are reported in a satisfactory manner with respect to timeliness, adequacy, and accuracy, and that the Investigator continues to have sufficient staff and facilities to conduct the study safely and effectively.

24.1 Source Documents

The Investigator will give the site monitor direct access to source documents that support data entered on the CRFs and make available such records to authorized 3M, quality assurance, IRB, and regulatory personnel for inspection and/or copying.

Note: The Federal Privacy rule (HIPAA) specifically permits the use and disclosure of protected health information “to a person subject to the jurisdiction of the Food and Drug Administration (FDA) [e.g. study sponsor] with respect to an FDA-related product or activity for which that person has responsibility, for the purpose of activities related to the quality, safety, or effectiveness of such FDA-regulated product or activity” [45 CFR 164.512(b)(1)(iii)].

24.2 Monitoring Plan

A monitoring plan will be developed prior to the initiation of the study, which outlines the extent and nature of monitoring appropriate for the clinical study, including the frequency of visits and the strategy for source data verification, based on considerations such as the objective, design, complexity, size, critical data points, and endpoints of the clinical study.

24.3 Audits

The study may be subject to a quality assurance audit by 3M, or its designees, as well as inspection by appropriate regulatory authorities. It is important that the Investigator and relevant study personnel are available during on-site monitoring visits or audits and that sufficient time is devoted to the process.

25. Quality Control and Quality Assurance

3M is responsible for implementing and maintaining quality assurance and quality control systems through written standard operating procedures (SOPs) to ensure that this study is conducted and data are generated, documented and reported, in compliance with the protocol, GCP and regulations. Study monitoring is carried out to accomplish this.

26. Ethical Considerations

This study will be conducted in accordance with the principles that have their origin in the Declaration of Helsinki, 21 CFR 50 (Informed Consent) and 56 (IRBs). The study will start only after approval of the protocol and consent form by the IRB. The approval letter or notice must contain the IRB name and identification number, meeting date, and sufficient information to identify the protocol and informed consent by name and number that were reviewed. 3M, prior to study initiation, must receive a copy of the IRB approval letter.

3M does not consider 3M™ Cavilon™ Advanced Skin Protectant to be a significant risk medical device. This study will be conducted in compliance with this protocol, GCP and applicable state and federal regulations including 45 CFR 160 & 164 (Authorization for Use/Disclosure of PHI),21 CFR 812.2 [b] (Investigational Device Exemptions-Abbreviated Requirements), 50 (Informed Consent), 56 (IRBs), and 54 (Financial Disclosure) for studies included in a 510(k).

27. Study Termination

Conditions that may warrant termination of the study by 3M include, but are not limited to, the following:

- The discovery of an unexpected, serious, or unreasonable risk to study subjects.
- Failure of the Investigator to comply with pertinent FDA regulations.
- Insufficient adherence to protocol requirements.
- Failure of the Investigator to enroll subjects into the study at an acceptable rate.
- Failure of the Investigator to comply with either pertinent FDA regulations or federal (e.g. HIPAA) and state privacy regulations.
- Submission of knowingly false information from the Investigator to 3M.
- Withdrawal of IRB approval.
- A decision on the part of 3M to suspend or discontinue evaluation of the investigational product.

3M or the Investigator has the right to discontinue the study at any time for medical and/or administrative reasons. This should occur as soon as possible, after mutual agreement.

28. Publication Policy

In accordance with 3M's corporate policy, the company requires disclosure of its involvement as a sponsor or financial supporter in any publication or presentation relating to a 3M study or its results.

29. References

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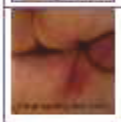
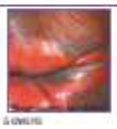
30. APPENDIX A – 3M Skin Condition Assessment Tool merged with Beeckman et al 2015 Consensus Document: IAD Severity Categorisation Tool

Parameter	Intensity	Weight	Multiplier		Mild Cases				Severe Cases			
	(Area Involved)				Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8
Epidermal loss depth and area involved	None	0										
	Partial (skin open, not weekping) or Complete (skin open and weeping)		30		0	0	0	0	1	2	3	4
	1-25%	1										
	26-50%	2										
	51-75%	3										
	76-100%	4										
Skin Color of Intact Skin and % area if not normal color	Skin color: normal	0	0									
	Skin color: pink or red		1		1	2	3	4	0	0	0	0
	1-25%	1										
	26-50%	2										
	51-75%	3										
	76-100%	4										
Total Score					1	2	3	4	30	60	90	120

TABLE 1 | IAD Severity Categorisation Tool

Clinical presentation	Severity of IAD	Signs**
	No redness and skin intact (at risk)	Skin is normal as compared to rest of body (no signs of IAD)
	Category 1 – Red* but skin intact (mild)	Erythema +/-oedema
 	Category 2 – Red* with skin breakdown (moderate-severe)	As above for Category 1 +/-vesicles/bullae/skin erosion +/- denudation of skin +/- skin infection

* Or paler, darker, purple, dark red or yellow in patients with darker skin tones
**If the patient is not incontinent, the condition is not IAD

31. APPENDIX B - Instructions for Use of 3M™ Cavilon™ Advanced Skin Protectant

3M™ Cavilon™ Advanced
Skin Protectant

Product Description:

3M™ Cavilon™ Advanced Skin Protectant is a polymeric-cyanoacrylate solution intended for the protection of intact or damaged skin. Upon application to skin, the liquid dries rapidly to form a primary long-lasting waterproof, highly durable film barrier. It is elastomeric, adhering to the contours of the skin and providing a uniform film. The film is transparent and possesses good oxygen and moisture vapor
permeability.

The polymer-cyanoacylate is dispersed in a non-stinging solvent. The film is colorless, non-cytotoxic and has a low dermatitis potential. The film adheres to dry, moist or wet skin surfaces and remains intact during conditions of continuous or repeated exposure to moisture or caustic irritants. It will wear off the skin and does not require removal.
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Ingredients: Hexamethyldisiloxane, Acrylic Tetrapolymer, 2-Octyl Cyanoacrylate

Indications for Use

Cavilon™ Advanced Skin Protectant forms a film barrier intended to protect intact or damaged skin. It is effective in conditions where skin is frequently or continuously exposed to moisture and caustic irritants such as feces, digestive fluids, wound drainage and urine. Cavilon™ Advanced Skin Protectant also can be used in areas exposed to friction and shear from bedding, clothing, shoes or any other material that would rub against the skin.

Contraindications

Cavilon Advanced Barrier Film is NOT to be used:

- as a wound dressing for full thickness wounds
- in or around the eyes

Warnings

1. **DANGER! EXTREMELY FLAMMABLE!**

2. Cavilon Advanced Skin Protectant is extremely flammable until it has completely dried on the skin.

3. Cavilon Advanced Skin Protectant should only be applied when no ignition sources or heat-producing devices are in use.

4. Avoid using Cavilon Advanced Skin Protectant around flames.

5. Use Cavilon Advanced Skin Protectant only in well ventilated area.

6. Avoid use on individuals who are allergic to any of the ingredients.
7. The product is individually packaged for single use only. Reuse could result in increased risk of infection, or inadequate product performance.
8. Cavilon Advanced Skin Protectant is not intended for applications requiring sterile product (e.g. infusion catheter site protection and care or surgical site protection).

9. Keep out of the reach of children.

Precautions

1. Skin absorption and the effectiveness of topical medications (including: antimicrobials, antifungals, and analgesics) may be reduced or prevented by the presence of the Cavilon Advanced Skin Protectant.

2. Use of other barrier products, ointments, creams or lotions may significantly reduce the effectiveness of the product.

3. The product can increase the adhesion of some adhesive products.

Directions for Use

1) Cleanse skin before applying Cavilon Advanced Skin Protectant. Gently dry areas of intact skin. If areas of erosion (denudement) are present, excess serous or serosanguinous drainage may be blotted with a gauze pad if necessary.

2) Grasp applicator and place thumb at the end of the lever. Aim the sponge end of the applicator downward and firmly depress the lever to break the internal ampule. (Figure 1) A snapping or popping noise will be noted as the ampule breaks.

Figure 1

3) Keep the applicator pointed in a downward position for approximately 10 seconds. Fluid will flow into the foam sponge; continued pressure on the lever is not required. Fluid will not completely saturate the sponge to the edges.

4) Using an even, sweeping motion, gently wipe the foam sponge across the skin (Figure 2); downward pressure on the applicator is not needed and may result in pooling of fluid. Move to adjacent unprotected area and repeat application until the entire area of concern has been covered.

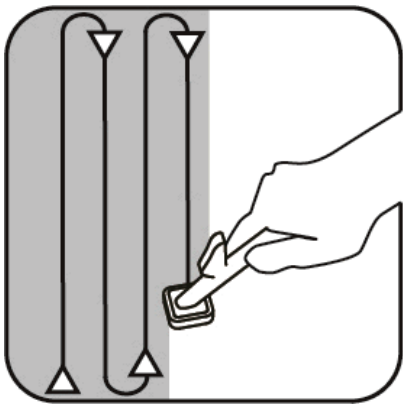


Figure 2.

Apply Cavilon Advanced to *all* skin that is exposed to stool and/or urine, or irritating body fluid. Allow the area to dry for 30 seconds.

1.

Figure 3

If an area is missed, wait until the fluid has dried completely before applying additional product.

5) If Cavilon Advanced Skin Protectant is applied within a skin fold or other area of skin-to-skin contact, make sure that the skin surfaces are separated to allow the fluid to dry completely (30 seconds) before allowing skin to return to the normal position.

6) When used under adhesive tapes, dressings, or devices allow Cavilon Advanced Skin Protectant to dry for approximately 1 minute before covering with adhesive products. Refer to Precaution Statement # 3.

7) Cleanse affected area as needed. Cavilon Advanced Skin Protectant is waterproof and is not removed by cleansing.

8) Removal is not required. If desired, the film can be removed with an adhesive remover containing hexamethyldisiloxane (HMDS).

9) Reapply two to three times per week. More frequent application may result in buildup of the product.

Storage/ Shelf Life/Disposal

For best results, the product should be stored in a cool and dry environment. Avoid excessive heat.

For shelf life, refer to the expiration date on each package.

Refer to facility policy for disposal.

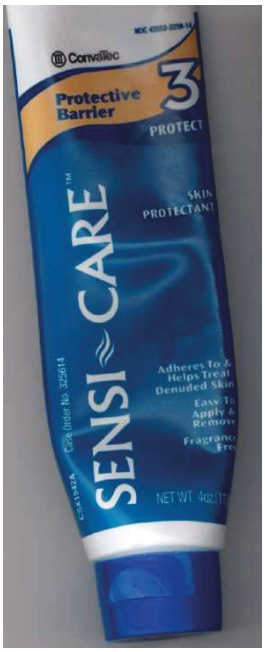
How supplied

Applicators are individually packaged for single patient one time use only. The solution is non-sterile. The applicator is sterile if package is intact. Do not use if the package is damaged or opened.

32. APPENDIX C – Instructions for Use of 3M™ Cavilon™ No Rinse Skin Cleanser #3380

- Moisten a clean cloth with 3M™ Cavilon™ No-Rinse Skin Cleanser or water.
- Spray affected area with 3M™ Cavilon™ No-Rinse Skin Cleanser.
- Gently wipe skin with the clean cloth to remove urine, stool or soil. Rinsing is not needed.
- Repeat as needed.

33. APPENDIX D – Manufacturer's instructions for ConvaTec Sensi-Care® Protective Barrier (part number 325614)



Active ingredients: Petrolatum 49%, skin protectant; Zinc oxide 15%, skin protectant

Directions: For skin protection: Apply as needed. For diaper rash: Change wet and soiled diapers promptly, cleanse the diaper area, and allow to dry. Apply liberally, as often as necessary, with each diaper change, especially at bedtime or any time when exposure to wet diapers may be prolonged.