

## REVIEW ARTICLE

# The three moments of skin cream application: an evidence-based proposal for use of skin creams in the prevention of irritant contact dermatitis in the workplace

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## Abstract

Contact dermatitis is one of the most common occupational diseases, with serious impact on quality of life, lost days at work and a condition that may be chronically relapsing. Regular prophylactic skin cream application is widely acknowledged to be an effective prevention strategy against occupational contact dermatitis; however, compliance rates remain low. To present a simple programme for skin cream application in the workplace with focus on implementation to drive down the rate of occupational irritant contact dermatitis, an expert panel of eight international dermatologists combined personal experience with extensive literature review. The recommendations are based on clinical experience as supported by evidence-based data from interventional studies. The authors identified three moments for skin cream application in the work place: (i) before starting a work period; (ii) after washing hands; and (iii) after work. Affecting behaviour change requires systematic communications, monitoring and reporting, which is proposed through Kotter's principles of organizational change management. Measurement tools are provided in the appendix. Interventional data based on application of this proposal is required to demonstrate its effectiveness.

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## Conflicts of interest

Dr. HI Maibach and Dr. S Wassilaw are consultants to Deb Group Ltd or its subsidiaries. Dr. S Kezic and Dr. T Rustemeyer act as supervisors to a PhD student, supported by Deb Group Ltd.

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## Introduction

Skin disease is arguably the most common occupational disease, with occupational contact dermatitis (CD) accounting for up to 95% of all occupational skin disease;<sup>1–4</sup> irritant contact dermatitis accounts for the majority of these cases.<sup>1</sup> Irritant contact dermatitis can have serious adverse impact on social and occupational aspects of life, including lost days at work, and threat to employment.<sup>5,6</sup> Despite well-conducted studies identifying threats to skin

health in the workplace and occupational risk management guidelines on recommended skin care regimens, rates of irritant contact dermatitis remain elevated.<sup>7–10</sup> Furthermore, the prognosis for sufferers is often one that is long-lasting and chronically relapsing;<sup>11</sup> therefore, it is clear that further focus to reduce the rate of occupational irritant CD are needed.<sup>5,12,13</sup>

Skin care in the work place is a multi-faceted concern, with skin cream application playing a simple but important role in

skin protection and repair.<sup>14</sup> While guidelines exist and provide evidence-based recommendations for skin cream use in specific workplaces, implementation and compliance is notably poor.<sup>15,16</sup> Existing recommendations focus on evidence of cream benefits and not necessarily practical implementation and compliance enforcement.

The aim of this work is to distil an evidence-based proposal for skin cream use in the workplace and combine it with simple instructions applicable across all industrial sectors, in order to reduce the rate of occupational irritant contact dermatitis. With the relatively fragmented literature on this topic, an expert panel review serves to consolidate available evidence and present a proposal reinforced by clinical experience.

### Materials and methods

An international expert panel of eight dermatologists combined their collective clinical experience together with English language PubMed literature review from inception to date of draft. The PubMed search considered all indexed journals using the key terms: cream, moisturizer, occupational dermatitis, skin barrier, prevention, compliance. Furthermore, references of relevant articles were searched for additional sources and bibliographies were reviewed to identify sources not obtained in the original search.

Publication inclusion criteria focused on primary prevention of skin irritation through the use of skin creams in healthy study populations in interventional settings.

This proposal, first, reviews clinical evidence and existing guidelines regarding preventive skin cream use in the workplace in Review of evidence below, and second, describes the implementation steps of a workplace skin cream programme that focuses on measurement and feedback to increase compliance in Distillation and recommendation below.

In Review of evidence, the reviewed clinical evidence is categorized into three areas of focus: (i) preventive care before starting work and exposure to irritants; (ii) skin cleansing and conditioning throughout the work day as workers come into contact with irritants and post-work conditioning to improve epidermal barrier regeneration;<sup>17</sup> and (iii) behavioural change in occupational skin care regimens. Each area of focus reviews the clinical evidence that met the inclusion criteria, and then provides an author recommendation on the topic.

### Review of evidence

#### Evidence for preventative care before work

The use of skin cream before starting work (so-called 'pre-work creams' or 'barrier creams') has produced varying results based mainly on composition.<sup>18</sup> Some argue a negative effect of 'barrier creams' because they may infer a sense of false protection to workers, who subsequently do not practice appropriate safety measures in the workplace.<sup>19</sup> Naming convention may play an

important role; i.e. a change in terminology from barrier cream to pre-work cream would change the perception of the worker in relation to the cream.

Recent studies have demonstrated the effectiveness of pre-work creams in preventing onset of irritant contact dermatitis and even improving skin condition in healthy subjects in the workplace.<sup>8</sup> Pre-work creams reduce irritant access to the skin,<sup>20</sup> and help with the removal of oils, greases and resins from the skin, thus reducing the need to use abrasive detergents to wash hands post-exposure.<sup>17</sup> The evidence for pre-work creams used in combination with conditioning creams supports its inclusion in a daily skin care programme.

*Pre-work cream application – author recommendation* The authors strongly recommend the use of pre-work creams under the naming convention 'pre-work' cream with a clear focus on their benefits in boosting the skin's natural defences and facilitating the removal of lipophilic irritants.

#### Evidence for use of skin creams during and after work

The next focus is on clinical studies on the use of conditioning creams, generally applied after washing for restorative purposes

**Table 1** Summary of evidence for skin care application in preventing CD

Authors, Year	Study type	Subjects	Outcome
Arbogast <i>et al.</i> , 2004	Randomized controlled trial	336	Regular use of skin conditioning cream at work results in beneficial effect on skin health
Winker <i>et al.</i> , 2009	Blind, randomized controlled trial	485	Pre- and post-work cream application resulted in improved skin condition when used in combination, but not standalone
Kütting <i>et al.</i> , 2010	Randomized controlled trial	800	Pre-work and post-work creams used in combination significantly improve skin condition over a 12-month period (pre-work 'protection' cream alone was more effective in improving skin condition than post-work 'conditioning' cream alone)
Goh <i>et al.</i> , 1994	Randomized, controlled study	54	Barrier creams did not prevent CD compared to control, but emollient creams seemed to have better effect; however, none of the results reached statistical significance

CD, contact dermatitis.

of the stratum corneum (SC) and replenishment of lipids.<sup>21–24</sup> Mechanistically different to pre-work creams, conditioning creams play an important role in restoring the skin barrier, which is gauged by a reduction in transepidermal water loss (TEWL), increased SC hydration and replenished lipids.<sup>23,25–28</sup>

Arbogast *et al.* demonstrated the statistically significant role of conditioning creams in maintaining skin integrity in a workplace hand-care regimen vs. a regimen without creams.<sup>29</sup> Winker *et al.* compared pre-work and conditioning creams alone or in combination in preventing development of eczema and maintaining baseline TEWL values; pre-work creams alone did not demonstrate statistically significant results, but when used in combination with conditioning creams, they showed a positive effect as gauged by subjective and TEWL measurements.<sup>30</sup> In a randomized controlled trial of 800 metalworkers in Germany, Kütting *et al.* showed that the generally recommended application of pre-work cream used in combination with conditioning cream seems to effectively prevent skin disease and that further emphasis should be placed on improving compliance to a skin care regimen in the workplace.<sup>8</sup> Finally, in a small Singaporean study, Goh *et al.* examined pre-work vs. conditioning cream usage in a small population of 54 metalworkers exposed to cutting fluid irritants; while they did not find any statistically significant results compared to the control group, they conclude that conditioning cream use after work is clinically beneficial for preventing hand dermatitis.<sup>31</sup> Table 1 summarizes these interventional studies.

Evidence from the use of conditioning creams post-wet-work, or post-work indicate that it is beneficial to use a conditioning cream in both circumstances.

*Post-wet-work and post-work cream application – author recommendation* The authors recommend applying a

conditioning cream after any hand-washing event during work, as well as at the end of a shift after work.

### Evidence for intervention strategies

As previously stated, compliance and implementation remain to be overcome in successfully driving down rates of occupational irritant contact dermatitis. The outcome of work place intervention depends both on the efficacy of the suggested measures, as well as the degree of implementation of the programme.<sup>8,32</sup>

In 2002, Dickel *et al.* retrospectively analysed worker's compensation registries in Germany and concluded that improved education and reinforced workflow control would serve to reduce allergic contact dermatitis (ACD) by decreasing improper handling of skin hazards in the workplace.<sup>33</sup> A 2006 controlled interventional study demonstrated that preventive individual education and collective measures during training result in significantly reduced risk of skin irritation in the medical workplace.<sup>34</sup> An Austrian interventional study in the oil industry was able to decrease the rate of irritant hand dermatitis from 55.4% to 19.7% by introducing workplace-adapted skin products, strategically placed and labelled dispensers and a series of standardized educational courses.<sup>35</sup> Dulon *et al.* found a significant improvement in skin disease rates, from 26% to 17%, in healthcare workers by providing training for the nurses and an occupational advisory service for management.<sup>36</sup> Two more studies in 2012 show significantly improved clinical outcome compared to control groups by providing skin disease-specific educational interventions, which resulted in decreased eczema occurrence (Table 2).<sup>37,38</sup>

Taken together, evidence supports the inclusion and importance of behavioural intervention strategies designed to effect change. These should include education, monitoring and regular feedback.

**Table 2** Summary of evidence for interventional studies in preventing contact dermatitis

Authors, Year	Study type	Subjects	Outcome
Dickel, Kuss <i>et al.</i> , 2002	Retrospective, registry analysis	997	Intervention strategies and increased stakeholder cooperation helped decrease occupational contact dermatitis
Löffler <i>et al.</i> , 2006	Controlled intervention study	521	Integrated hand care education during training period resulted in significant prevention of irritant skin changes
Speiser-Rankine <i>et al.</i> , 2006	Pilot Study	924	Introduction of workplace-adapted skin care products, and educational courses resulted in a significant decrease in irritant hand dermatitis in a mineral oil production facility
Dulon <i>et al.</i> , 2009	Randomized intervention study	388	Educational skin care programme and advisory service for senior personnel resulted in significant reduction in frequency of skin changes and improved behaviour towards enhanced risk management
Van Gils <i>et al.</i> , 2012	Randomized, controlled trial	158	Integrated care significantly improved clinical outcome compared with usual care
Bregnhøj <i>et al.</i> , 2012	Controlled intervention study	502	Evidence-based education effectively reduced (prevented) occupational hand eczema among hairdressing apprentices; programme included skin protection programme, optimization of workplace procedures and practical training from supervisors

**Behaviour change – author recommendation** The authors recommend implementing an integrated behaviour change programme including:

- Acknowledgement of the topic by the organization, especially the senior management;
- Practical education, communication and training measures;
- Consideration of product availability and location aligned to the triggers for skin cream use, with clear labelling;
- Accurate monitoring of compliance;
- Regular feedback of compliance back to the intervention population.

### Distillation and recommendation

Based on the evidence, the authors propose the following three moments for skin cream application to prevent irritant contact dermatitis in the general workplace:

- Before work;
- During work after hand washing;
- And after work.

It is further recommended that this proposal be implemented in workplaces using an integrated framework for behaviour change including regular measurement and feedback of progress. These recommendations apply only to individuals who do not currently suffer from skin conditions; those suffering from skin conditions must adhere to specialized care assigned by a health-care professional.

#### Skin care moment 1: apply pre-work cream before starting a work period

Before starting a work period with risk of occupational exposure to irritants, workers should apply a pre-work cream as a supporting layer for the skin's defence mechanism. The pre-work cream also facilitates removal of irritants from the skin surface by capturing them and washing them off at the next hand-washing event.

#### Skin care moment 2: apply conditioning cream after washing hands

During work, workers wash their hands for a variety of reasons. Washing with soap and water is known to dry the skin and deplete its natural moisturizing factors and oils.<sup>39</sup> Conditioning cream should be applied to hands after hand washing and drying to maintain skin barrier integrity.

In cases when a worker washes his hands before immediately returning to work with a risk of exposure to irritants, it can be considered that a 'combined moment' (moment 2 followed by moment 1) has occurred. In such cases, best practice should be to apply cream once, using a suitable protective cream with conditioning properties, rather than to insist on two separate applications. One combined moment should be counted for compliance purposes.

#### Skin care moment 3: apply conditioning cream after work

At the end of the shift, workers again wash or cleanse their hands. Applying a conditioning cream to hands helps restore skin health for the following day.

In all hand cream application scenarios, it is assumed that workers are educated that hands must be freshly washed, or previously cleansed, in order to make certain the skin is free of irritants so as not to trap them under cream applications. Creams must be applied thoroughly with special attention to inter-digital areas and nail beds and allowed to absorb and feel dry prior to sanitizing with any alcohol-based substances or engaging in work activities. The drying time of creams depends on the hydrophilicity of the cream and other environmental factors such as relative humidity and temperature;<sup>40</sup> the precise time remains to be determined, but empirically is in the order of minutes. Each workplace should also take into account practical considerations, such as mounting skin cream dispensers at all workstations with visible and clear instructions to workers to apply the recommended portion (e.g. specified by the number of pumps required from the dispenser) in accordance with the relevant event.

The 3-moments method reflects measurable events in the workplace (i.e. before entering work at the beginning of a shift, after washing hands during work and exiting work after a work shift), which serve as trainable prompts for cream application. Specific cream formulation recommendations are not made in this proposal as they vary from one workplace to another, depending on multiple factors including the specific exposure to irritants as well as glove use. Cream formulation decisions must be made for each workplace individually.

#### Implementation

The authors adapted Kotter's principles of change management into four implementation stages for this proposal: (i) establish a need and assign leadership; (ii) develop a strategy and communicate it to employees; (iii) empower the change movement through measurement and feedback; and (iv) enhance compliance and embed behaviour change.<sup>41</sup>

**Establish a need and assign leadership** The first step is to gain buy-in from stakeholders and key-influencers such as management and worker representatives. Establish a baseline with an organization-wide audit that assesses skin care education and practice (see Appendix 1, Example of Skin-Health Audit Checklist, and Appendix 2, Example of Pre-Change Behavior and Attitudes Assessment Questionnaire). This baseline identifies group and individual risk levels that should be used to create an information dashboard about skin health and establish the leadership's scope and success criteria for short-term wins and long-term sustainable improvements.



**Fig. 1** Workplace visual cue for prevention of irritant contact dermatitis of the hands using skin creams (1) before work, (2) during work after washing hands, and (3) after work. Before applying any hand cream, make certain that hands are clean and clear of any potential irritants.

*Develop a strategy and communicate to employees* Create a tailored implementation programme for the workplace based on initial audit data, which should include appropriate skin care products, dispensing locations and formats and measurement methods.<sup>42</sup> Communicate and educate employees on the importance of skin care, the risks and early symptoms of poor practice and the long-term benefits of following best practices. Each workplace should consider multimodal training and practical demonstrations including:

- Awareness and education posters with clear and robust messaging.
- Clearly labelled dispensers and skin care reminder signs next to washing facilities (see Fig. 1).
- Skin Care Days and other group education events.
- An instructional video posted on corporate intranet or screened at gathering points (e.g. restaurant).
- Skin care champions who create and highlight case studies of successful skin care behaviour change.

Specifically, understanding the reason why the training and skin care programme are important is a strong motivator.<sup>43–45</sup>

*Empower the change movement through measurement and feedback* Compliance monitoring,<sup>43,46</sup> with electronic dispensers or a manual monitoring calculator (see Appendix 4, Example of Manual Skin Care Compliance Calculator) should be used to reinforce that the three-moments method is producing positive change in the workplace. Drawing on an established model of hand-hygiene compliance monitoring,<sup>47–49</sup> there are three fundamental monitoring components: (i) establishing a denominator for the total number of hand cream application events that are possible in a given period; (ii) developing a sustainable method for measuring the number of events fulfilled in a given period (the numerator); and (iii) calculating a baseline from which to gauge improvements over time.<sup>50,51</sup>

As data become available from monitoring, it is essential to report findings back to the concerned population.<sup>12</sup> This reporting serves three main objectives: demonstrating that there is genuine concern for the topic, holding individuals accountable to a

pre-determined standard that represents success, and demonstrating that the three-moments method is creating positive change. Workforce questionnaires should also be circulated post-change to observe changes in skin care behaviour compared to pre-change behaviour (Appendix 3, Example of Post-Change Behavior and Attitudes Assessment Questionnaire). This establishes a closed-loop feedback mechanism that drives continuous improvement.<sup>44,52</sup> Results should be communicated to workers on a regular basis through public notice boards and other common communication platforms.

*Enhance compliance and embed behaviour change* In the final stage of behaviour change, the three-moments programme should be converted from a high-touch manual programme, into a more scalable and systematic behaviour that is embedded in the organization's culture and health and safety guidelines. This includes 24/7 electronic monitoring, conducting formal audits and reporting results, establishing standardized education and training tools, monitoring key performance indicators with a management dashboard, regularly communicating about skin care and compliance through broadly accessible channels and providing refresher activities.

## Discussion

Irritant contact dermatitis caused by occupational exposure is a serious threat to workers and employers. Lack of proper training and adherence to preventive care in the workplace lead to expensive medical treatment, lost days at work, change in job and even social backlash.<sup>5,53</sup> Despite available studies highlighting the importance of pre-work and conditioning creams in workplaces exposed to irritants and frequent detergent usage, and workplace guidelines for preventing irritation, compliance remains low and contact dermatitis rates elevated.

As recently as 2012, Schwensen *et al.* report that even with the development of modern evidence-based prevention programmes, there is a lack of practical implementation at the European level; surveillance (i.e. monitoring and feedback) being cited as a key factor in realizing benefits of prevention programmes.<sup>15</sup> Even in countries where occupational skin disease has been extensively researched and communicated (e.g. Germany), compliance still remains an issue.<sup>16</sup> This proposal focuses on improving compliance to an evidence-based hand cream use regimen in the workplace by focusing on implementation, specifically on monitoring compliance and reporting results.<sup>41</sup> Furthermore, practical tools and references for implementing the three-moments of skin cream application are provided in the appendix.

Analogous programmes have been successfully implemented in the adjacent field of hand hygiene.<sup>43,54,55</sup> Critical success factors included visual cues as reminders to workers, message ownership by key workplace figures, a readily available stock of substance as well as wall-mounted dispenser units and pocket-



friendly bottles, electronic compliance monitoring and feedback to target audience. Other areas of health promotion also support these critical success factors as reviewed by Whitby et al.<sup>44</sup>

This proposal specifically examines the best evidence around skin barrier protection and restoration after exposure to irritants in the workplace. It has been developed in a manner which can be applied to all industrial sectors, with evidence drawn from various work places including hairdressers, food, timber, building, machinists and metal workers. It should not be a substitute for other known classes of irritation prevention, such as replacement of irritants with non-irritants, automation to remove human exposure to irritants, and personal protective equipment use according to worksite requirements. This proposal does not address allergic contact dermatitis, which requires its own assessment of roots, sensitization and treatment. It should be used alongside other compatible guidelines aimed at preventing contact dermatitis in the workplace.

Study limitations include a limited number of randomized clinical trials, possibility of an industry bias due to the limited randomized controlled trial (RCTs) and a lack of long-term controlled observations. Future studies should implement and assess the health and economic effects of this proposal in preventing occupational irritant contact dermatitis.

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## Appendix 1: Example of Skin-health Audit Checklist

Regular skin health checks can help with early detection of dermatitis, which can prevent more serious disease

development. Checks can also help identify any gaps in preventative measures and the need to reassess skin protection as appropriate.

This list should be reviewed in consultation with employees.

Area where the checklist is being completed:	
Soap manufacturer / type:	
Dispenser information:	
Other information:	

		Yes	No	If no, provide details	What action will you take (with agreed date for completion)?
<b>1. Employee Needs</b>	Have you conducted an audit of the contaminants in your workplace that get on to employees' skin?				
	Are you aware of which skin care products are most suitable for each employee's working environment?				
	Do you conduct a regular skin condition audit?				
	Do you analyse skin issues to ensure your skin care programme is effective?				
<b>2. Products</b>	Have you confirmed that the hand cleansers provided are suitable for the specific				
	contaminants in your workplace?				
	Is there access to milder soap for lightly soiled/contaminated hands?				
	Is pre-work protection cream available?				
	Is after-work conditioning cream available?				
	Do any employees use their own products from home?			If so, why?	
<b>3. Product Use / Compliance</b>	Are employees using the correct amount of hand cleanser? (In line with manufacturer's recommendations).				
	Are they applying heavy duty hand cleanser to wet or dry hands?				
	Are employees using the pre-work cream?				



<b>4. Training and Education</b>	Have all employees received training on how to wash hands correctly?				
	Have all employees received training on why they need to use the skin care products provided?				
	Have all employees received training on how to use the skin care products provided?				
	Have all employees received training on how checking their skin regularly can help reduce risk of serious skin disease (by early identification of symptoms)?				
	Have all employees received training on where products are located?				
	Is point of use signage used to reinforce the skin care training messages?				
<b>5. Placement and Availability of Products</b>	Are all products readily available? (no empty dispensers)				
	Are creams available alongside hand cleansers for use after hand washing?				
	Is pre-work cream available on entry to the workplace?				
	Is after-work cream available at the exit from the workplace?				

Summary

Action	Who is responsible for the action?	Date to be completed
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

## Appendix 2: Example of pre-change behaviour and attitudes assessment questionnaire

1. In general, how would you describe the condition of your hands as of today?  Normal  Dry/ Irritated  Other Condition (please describe): \_\_\_\_\_
2. What type of soilings are most prevalent?  Medium duty General Dirt/Grim  Heavy duty Grease, Oil, Etc.  Varnishes, Inks, and Dyes
3. Do you use a skin safety regimen?  Yes  No
4. If Yes, how many times a day do you estimate you use a skin regimen at work?  3 or less  Between 3 & 5  Between 5 & 10  More than 10
- 5a. How would you rate your satisfaction with the current skin regimen being used at your facility?  Satisfied  Somewhat satisfied  Neither satisfied nor dissatisfied  Somewhat dissatisfied  Dissatisfied
- 5b. If you answered somewhat dissatisfied or dissatisfied, please tell us why.  Does not clean my hands  Does not offer pre-work protection / restorative cream  Other
6. Which ONE statement best describes your preference for skin regimen types.  I prefer soap only  I prefer pre-work cream and soap  I prefer pre-work cream, soap, and after-work cream
7. Which ONE statement best describes you?  I would like to see our facility evaluate a new skin regimen at this time  I would not care if a new skin regimen were evaluated in this facility  I would not like to see our facility evaluate a new skin safety regimen at this time

**Appendix 3: Example of post-change behavior and attitudes assessment questionnaire**

1. In general, how would you describe the condition of your hands as of today?  Normal  Dry/ Irritated  Other Condition (please describe):
2. Estimate how many times per day you used the new skin safety regimen being evaluated?  3 or less  Between 3 & 5  Between 5 & 10  More than 10
- 3a. How would you rate your satisfaction with the new skin safety regimen being evaluated?  Satisfied  Somewhat satisfied  Neither satisfied nor dissatisfied  Somewhat dissatisfied  Dissatisfied
- 3b. If you were at all dissatisfied, please tell us why. \_\_\_\_\_
4. Which ONE statement best describes your opinion?  I would like to see this new skin safety regimen provided at my workplace  I would not care if this new skin safety regimen were provided at my workplace  I would not like to see this new skin safety regimen provided at my workplace
5. If you answered (c), please tell us why?  Medium duty General Dirt/Grim  Heavy duty Grease, Oil, Etc.  Varnishes, Inks, and Dyes
- Other comments you would like to share:  Yes  No
- 5a. How would you rate your satisfaction with the current skin regimen being used at your facility?  Satisfied  Somewhat satisfied  Neither satisfied nor dissatisfied  Somewhat dissatisfied  Dissatisfied
- 5b. If you answered somewhat dissatisfied or dissatisfied, please tell us why.  Does not clean my hands  Does not offer pre-work protection / restorative cream  Other
6. Which ONE statement best describes your preference for skin regimen types.  I prefer soap only  I prefer pre-work cream and soap  I prefer pre-work cream, soap, and after-work cream
7. Which ONE statement best describes you?  I would like to see our facility evaluate a new skin regimen at this time  I would not care if a new skin regimen were evaluated in this facility  I would not like to see our facility evaluate a new skin safety regimen at this time

**Appendix 4: Example of Manual Skin Care Compliance Calculator**

Number of Employees on Site Daily		<input style="width: 80%; height: 20px;" type="text"/> A
Monitoring start date B	Monitoring end date C	Days Monitored (C-B)
		<input style="width: 80%; height: 20px;" type="text"/> D
Cartridge Start Weight (g) E	Cartridge End Weight (g) F	Weight Product Used (g) (E-F)
Pre-Work Cream 1		G
Pre-Work Cream 2		H
Pre-Work Cream 3		I
Hand Cleanser 1		J
Hand Cleanser 2		K
Hand Cleanser 3		L
After-Work Cream 1		M
After-Work Cream 2		N
After-Work Cream 3		O
Total Cream Used (g) (G+H+I+M+N+O)		<input style="width: 80%; height: 20px;" type="text"/> P
Total Cleanser Used (g) (J+K+L)		<input style="width: 80%; height: 20px;" type="text"/> Q
Hand Cream Dose (1 dispenser push) (g)		<input style="width: 80%; height: 20px;" type="text"/> R
Hand Cleanser Dose (1 dispenser push) (g)		<input style="width: 80%; height: 20px;" type="text"/> S
Total Cream Events (P/R)		<input style="width: 80%; height: 20px;" type="text"/> T
Total Cleanser Events (Q/S)		<input style="width: 80%; height: 20px;" type="text"/> U
Total Moment 1 (A * D)		<input style="width: 80%; height: 20px;" type="text"/> W
Total Moment 2 (U)		<input style="width: 80%; height: 20px;" type="text"/> X
Total Moment 3 (A * D)		<input style="width: 80%; height: 20px;" type="text"/> Y
Total Hand Care Moments (W+X+Y)		<input style="width: 80%; height: 20px;" type="text"/> Z
Hand Care Compliance % (T/Z * 100)		<input style="width: 80%; height: 20px; border: 2px solid red;" type="text"/>