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Street-level bureaucrats and the implementation of cleaning and sanitation practices in foodservice: case findings from a study in Danish hospitals and nursing homes

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Abstract

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Proper cleaning and sanitation that can to maintain the sanitary and hygienic level in the catering kitchens is an important routine to prevent food-borne diseases and good management of cleaning and sanitation is an important part of any hygiene management system. But large scale industrial kitchens in general seems to be quite slow in initiating change processes required to implementing new routines and only very few large industrial kitchens in Denmark had compulsory self-inspection programs or auto-control operating as required. Against this background a study was carried out in Danish institutional kitchens to study the implementation process of cleaning and sanitation practices at practitioner level. The aim of the study was to study how policies aiming at improving hygiene management in foodservice have been implemented at kitchen level when it comes to cleaning and sanitation. The study was conducted as a multiple case study in nursing home and hospital kitchens. The methodology was based on individual telephone interviews in combination with a quantitative questionnaire. A total of 15 kitchens participated in the study which were based on and open-ended interview guide, focusing on applied cleaning methods, principles for choice of cleaning procedures and methods, cleaning management, including existing documentation for cleaning quality, as well as suggestions for improvements and advancements in cleaning and sanitation. The study shows that street-level bureaucrats responsible for cleaning and sanitation feel themselves faced with number of challenges that they don't have the right background to be able to handle properly and this is mirrored in their views and attitudes towards cleaning and sanitation. Street-level bureaucrats find: that cleaning and sanitation is boring, monotonous and has low status; that help and guidelines for implementing their self-inspection program is needed; that planning and management tools and techniques are lacking; that tacit knowledge is the guiding principle rather than written procedures; and that educational opportunities are lacking and that there are few opportunities for networking and sharing of knowledge. In general street-level bureaucrats responsible for cleaning and sanitation feel themselves faced with number of challenges that they don't have the right background to be able to handle properly and this is mirrored in their views and attitudes towards cleaning and sanitation.

Introduction

Proper cleaning and sanitation that can maintain sanitary and hygienic levels in catering kitchens is an important routine to prevent food-borne diseases, and good management of cleaning and sanitation is an important part of any hygiene management system. This is especially important as evidence indicates that large industrial kitchens have been responsible for most of the confirmed food-borne illness outbreaks that have occurred in Western countries (Bryan 1988; Ollinger-Snyder & Matthews 1996; Setiabuhdi *et al.* 1997).

It is a particular problem because many users of large industrial kitchens may be exposed to malnutrition at institutions for the sick and elderly (Mikkelsen *et al.* 2003), and consequences of a food safety failure can be especially severe for institutional foodservice (Setiabuhdi *et al.* 1997). But large-scale industrial kitchens in general seem to be quite slow in initiating change processes required to implement new routines (Mikkelsen 2004), and experience-based data show that only very few large industrial kitchens in Denmark had compulsory self-inspection programmes or auto-control operating as required by authorities based on the European Union (EU) hygiene directive.

Adera *et al.* (1999) found that the highest mean violation rate for 171 American foodservice establishments was for cleanliness of the non-food contact surfaces of equipment and utensils. In a study of public catering, Macedo *et al.* (2003) also found that lack of maintenance and cleaning of catering equipment was frequent. A few studies point to the fact that lack of monitoring and written procedures may be part of the problem. In a study of public catering, Macedo *et al.* (2003) found the reason for poor cleaning of catering equipment was mainly that cleaning maps were almost non-existent, and Wade (1998) found in a study of hygiene that monitoring and control methods focused more on staff performance and that objective monitoring of cleaning chemicals was rare. Worsfold & Griffith (2003) found in a study of foodservice that food hygiene issues, including cleanliness, were viewed in terms of aesthetics rather than in terms of food safety.

Adding to the problem of implementing good cleaning and sanitation routines is the fact that

the hygiene agenda is competing with other agendas in public foodservice. Thus, it can be expected that the requirements for cleaning and sanitation in such institutions are not always met. In addition to the concern for the quality of the cleaning and sanitation carried out in catering kitchens, foodservice operators are also faced with other demands than hygiene. That applies to environmental considerations and the employee working environment, as well as the cost of maintaining the cleaning and sanitation. Based on these assumptions and on the literature findings, it is hypothesized that political intentions to improve hygiene management as expressed in hygiene directives are not implemented fully when it comes to cleaning and sanitation. Against this background, a study was carried out in Danish institutional kitchens to study the implementation process of cleaning and sanitation practices at practitioner level.

The theoretical foundation for the study is the assumption that policy targets adopted at the political level undergo transformations as they diffuse down from policy to practitioner level, and that the political expressed intentions might differ from what is actually achieved and implemented at practitioner level (Lipsky 1980; Meyers *et al.* 1998; Maynard-Moody & Musheno 2000, 2003). Thus, street-level bureaucrats at practitioner level in the kitchen are key players in the policy-implementation processes. In the case of implementation of food safety objectives, the street-level bureaucrats are the catering managers, and the task environment is the practitioners at kitchen level. They are in large part responsible for carrying out the policy objectives developed by governments or supranational bodies such as in the case of the EU hygiene directive, and several studies of the behavior of street-level bureaucrats illustrate the power of their discretion on policy outcomes (Weissert 1994; Clark-Daniels & Daniels 1995; Meyers *et al.* 1998). Winter (2004) has developed the framework even further to describe the implementation process and to model how implementation results are dependent on a number of independent variables. Thus, Winter's (2004) work can be used to explain why there are differences in implementation results and thus policy outcomes.

Aim and objectives

The aim of the study was to study how policies aiming at improving hygiene management in foodservice have been implemented at kitchen level when it comes to cleaning and sanitation. In order to do that, a study was conducted investigating the way in which cleaning and sanitation procedures are managed and operated in modern institutional foodservice in Denmark. The objective was to shed light on the way cleaning and sanitation is managed and planned, how it is conducted at operational level, how staff are trained and what attitudes and values are connected to cleaning and sanitation at kitchen level.

Using a theoretical approach based on the theory of street-level bureaucrats, it is finally the objective to discuss how implementation of cleaning and sanitation might be improved by influencing the task environment and street-level bureaucrats at kitchen level, and thus to overcome barriers to proper management and operation of cleaning and sanitation, including the need for developmental measures at the institutional, local or national level.

Methods

The study was conducted as a multiple case study in nursing home and hospital kitchens selected from the Danish Dietetic Association's membership file as a part of the KRIS project (Mikkelsen *et al.* 2000). The methodology was based on individual telephone interviews in combination with a quantitative questionnaire. The questionnaires were sent to the participating kitchens in order to give respondents the possibility of choosing beforehand who would respond and in order for respondents to be able to gather any information necessary for the subsequent telephone interview.

The questionnaire included questions regarding the kitchen's size, technology and staffing, as well as questions on time, routines and planning used for cleaning and sanitation. Before being sent out, the questionnaire was tested in four kitchens. A total of 33 kitchens were selected as the sample based on criteria that they should have a minimum size, identified as having more than 10 skilled catering employees, as this is used as the

cut-off point for being an industrial kitchen in a food control context.

A sample of 33 was chosen among the approximately 500 large industrial public kitchens in operation in Denmark. Thirty-three was chosen as the number necessary to secure representation of commonly used catering technology, to secure geographical representativeness, and to secure representation of both hospital kitchens and nursing home kitchens. The 33 kitchens were contacted and asked about their willingness to be interviewed by telephone.

This resulted in a total of 15 kitchens which were willing to participate in the interview and at the same time complete the questionnaires. Respondents were representatives from eight hospital kitchens and seven nursing home kitchens. The interview person was in all cases the person responsible for the kitchen's cleaning routines. For the interviews, an open-ended interview guide was used with questions on applied cleaning methods and principles for choice of cleaning procedures and methods, and cleaning management, including existing documentation for cleaning quality, as well as suggestions for improvements and advancements in cleaning and sanitation.

The results from the interviews were typed and analysed using a coding technique in which individual statements and answers in several steps were grouped into general statements at increasingly abstract levels. The results from the quantitative part were then used to add detail to these statements.

Results

In this section, the findings from the interviews are presented. In the first section, the basic facts and figures on cleaning and sanitation are presented to give background information for the subsequent analysis of findings. A model of the theoretical framework modified from Winter (2004) is given in Fig. 1. It shows the different stakeholders that play a role in the policy-implementation process, from policy-adoption process to kitchen-level cleaning and sanitation. The analysis of results is, however, primarily concerned with the lower levels in which current requirements are received and translated into concrete action. The street-level bureaucrats respon-

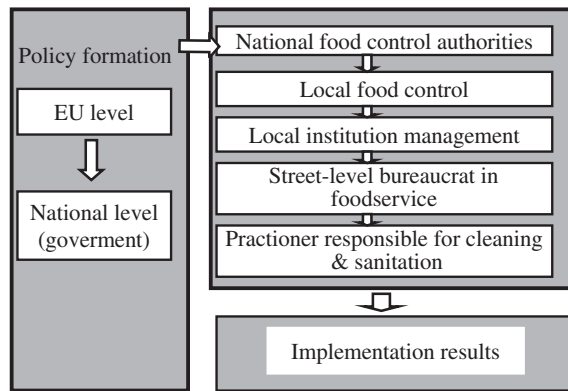


FIGURE 1 An implementation model for hygiene regulation including cleaning and sanitation. The figure illustrates the many different levels that a hygiene regulation goes through before it is delivered as concrete action on the ground, in this case, cleaning and sanitation planned and managed by the street-level bureaucrat and carried out by the kitchen practitioner. Modified after Winter (2004).

sible for cleaning and sanitation play an important role, along with the local foodservice management and the ground-floor practitioner responsible for the practical cleaning and sanitation.

Resources and methods

The results show that although food and meal production is regarded as the main task of the kitchen in comparison with cleaning and sanitation, a substantial amount of time is used in cleaning and sanitation. On average, kitchens use 20% of the total working hours on cleaning and sanitation. However, there is a great deal of variation, as the number of cleaning hours varies between kitchens, and thus smaller kitchens use proportionally more time on cleaning per food day than larger ones. Part of the explanation is that there are many utensils and much equipment in the kitchen to be cleaned every day regardless of the amount of food produced. There will therefore be a base cleaning time that is independent of how much food is produced.

Another reason for the difference is that larger kitchens at hospitals make more extensive use of cleaning machines that reduce the time required. Yet, within comparable types of kitchens, there is also a great degree of variation in the amount of time spent on cleaning. In some cases, 5–6 times

more time is spent on cleaning per food day compared with those kitchens that spend the least time on cleaning. Thus, the results indicate that there is a big difference in the amount of resources the kitchens use on cleaning, and it is likely that this is reflected in the degree of variation in the cleaning standard.

As is the case regarding time and resources spent on cleaning and sanitation, so the choice of methods shows substantial variation also. Thus, there is no clear correlation between the size and type of the kitchens as measured by the number of meals produced and cleaning methods used. Further, there is a great difference in the number of different cleaning methods used within a given kitchen. The same kind of variation is seen in the case of disinfection practices. When asked about the types of equipment most frequently subject to disinfection, it is found that such items are mostly thermometers and tables. The kitchens state the reason for disinfection is that these items come into direct contact with foods and may lead to cross-contamination. Besides thermometers and tables, disinfection is primarily used for machinery parts regarded as being difficult to clean and/or too large to clean in the dishwasher. Most common is disinfection using a liquid disinfectant; however, disinfectant towels are used in a number of the kitchens.

Results show that an automated device is used in many cases and that all kitchens in the study do foam cleaning by machine – yet to varying extents. Places where foam cleaning is used include inventory items such as tables, shelves, waste containers and food transport tables, kitchen equipment such as pots, fish/frying pans, and apparatus such as warming cupboards, ovens, air coolers, range hoods and washing machines, as well as building parts such as floors, cold storage, fender beans, ceilings, windows, freezers and walls. In addition to foam cleaning kitchen floors, a number of kitchens also use a floor-scrubbing machine, and around a third of the kitchens use a floor-washing machine.

Actors and stakeholders

The study also gives insights into the nature of the street-level bureaucrats and their task envi-

ronment – in other words those who are translating the policies into concrete cleaning and sanitation actions. In all cases, kitchens have a senior employee responsible for the planning and maintenance of cleaning and sanitation, which is the street-level bureaucrat in the context of the current theoretical framework. The practical cleaning and sanitation is taken care of by the target group of the kitchen-level practitioner.

In instances where the kitchen itself takes care of the cleaning, it is primarily the kitchen assistants, kitchen assistant trainees and unskilled workers that clean the kitchens. The more skilled workers in the kitchen – the dietitians – do not spend time on cleaning other than the tasks related to planning and management. The results show that approximately half of the kitchen employees are unskilled. However, the trend is toward more employees being skilled. One of the reasons is that new production methods and more demanding hygiene requirements demand more specialized skills among the employees.

Planning and management

Regarding the organization of cleaning and sanitation, the study shows that cleaning is typically organized either by the kitchens performing the task themselves or by special service groups within the institution, or by an independent contractor. The results show that there is growing interest in having a specialized contractor handle the cleaning. By doing this, the kitchen staff can concentrate on producing food and meals, which is considered to be their core competence.

In some cases, it is only periodical cleaning of such things as windows, exhaust vents, ceiling lights, ceiling panels and piping that is given to independent contractors or to the special groups, while the kitchen itself handles the daily cleaning.

In the case where contractors are responsible, the kitchens do not mention any types of problems related to cleaning being handled by others than the kitchen employees. On the other hand, the kitchens state that, as a bonus, subcontracting enables them to avoid the periodical cleaning that is often physically burdensome to them.

The results show that the kitchens rarely have specific financial frameworks for cleaning agents

and utensils. This means that the cleaning must be carried out within a general budget either for the institution or the kitchen, and the kitchens thus do not have any immediate incentive to consider alternative management methods such as sourcing out the responsibility to an outside contractor. Nor is there any incentive to attempt to optimize the price/quality ratio for the cleaning and sanitation.

Innovation and development

Although cleaning and sanitation seems to be based on tradition and existing routines, it undergoes developments in some cases. The study also shows that the kitchens have put new and less familiar cleaning methods into use. That also applies to cleaning with microfibre cloths. Around 20% of the kitchens stated that they used microfibre cloths both for daily/weekly cleaning and for periodical cleaning. The kitchens state that they were primarily used for dry and wet cleaning such things as range hoods, electrical sockets, tiles, writing tables, drawers, ventilation and windows. The study shows that it is typically items such as inventory, machines and building parts that are primarily cleaned with wet cleaning using other types of cloths than microfibre ones.

The kitchens that clean with microfibre cloths do not have documentation for the quality of hygiene related to these cloths, e.g. hygiene testing that measures the number of bacteria and micro-organisms after cleaning with a microfibre cloth. This, say the kitchens, is also the reason that microfibre cloths are not yet being used on items that come into direct contact with foods.

Effectiveness of the cleaning and sanitation is, however, not the only factor to be taken into account when planning and maintaining a cleaning and sanitation system. Other concerns are also important. According to the results, street-level bureaucrats generally prioritize hygiene and working environment concerns higher than environmental and economic concerns. It is particularly emphasized that the cleaning methods must be tested to see if they induce asthma and allergies, and ergonomics have been taken into consideration. The latter especially applies to selection of appliances and heavy cleaning tasks

in general. As regards hygiene, it is particularly emphasized that cleaning methods and appliances must be capable of removing visible filth. Methods must, as a matter of course, be approved for foods, be effective and be approved by the hygiene committee of the institution.

Despite regular requirements that the kitchens give hygiene and working environment considerations the highest priority, the kitchens would still like to have the option of prioritizing the environment more highly. However, they point out that they do not know enough about the impact of cleaning methods on the environment. The kitchens place a high priority on purchasing cleaning materials without solvents, that the products are eco-labelled, and that cleaning materials and appliances live up to environmental standards in legislation and in any joint purchasing agreements. However, also here the street-level bureaucrats must admit that they lack the necessary knowledge to make decisions against a proper background.

In some instances, interviews indicated that the kitchens can get help with environmental considerations from municipal purchasing employees. Out of further consideration for the environment, street-level bureaucrats would like a reduction in the number of different cleaning methods to avoid excessive chemical use. A reduction in the number of cleaning methods will in addition mean a simplification of their routines. The same wish is also stated for cleaning and sanitation appliances, and street-level bureaucrats state that these appliances must be user-friendly and it should be possible to adapt them to tight spaces. There is a general desire for as few appliances as possible.

Conclusion

In general, street-level bureaucrats responsible for cleaning and sanitation feel themselves to be faced with a number of challenges that they do not have the right background to be able to handle properly, and this is mirrored in their views and attitudes toward cleaning and sanitation.

Cleaning and sanitation is boring, monotonous and has low status

Employees and, in many cases, the management view cleaning tasks as being boring and monoto-

nous. Food production is viewed as the kitchen's main responsibility, and producing this service is the preferred work task. It is also this work task that gets the highest status in the kitchen, in the institution and in the further environment, and it is also the issue which gets most attention in the media. The employees say that food production is the most visible result of their work. Cleaning up after this is only visible to people other than the employees if it causes a hygiene breach. On the other hand, management and staff are very well aware that cleaning is a necessary task in line with other tasks in the kitchen. Therefore, the general picture is also that the staff accept and do the cleaning as a part of their work, but without great pride. The kitchen staff view the cleaning tasks as secondary and 'foul' work. Cleaning therefore becomes a lower priority when things get busy.

Self-inspection programmes only in one out of five kitchens

Self-inspection programmes are apparently only implemented in few cases. In this study, three kitchens reported having such a programme in operation. Four of the kitchens had a completed, but not approved, programme, whereas eight of the kitchens were working on drafting a self-inspection programme. The results show that catering managers need help and guidelines for implementing their self-inspection programme because caterers in many cases complained about having trouble finding relevant expertise, i.e. consultants that could help implement their self-inspection programme.

Planning and management tools and techniques are lacking

In general, caterers find that developing cleaning and sanitation management systems is difficult, and that their expertise and project skills required to handle implementation of such projects are limited. In the kitchens with an implemented self-inspection programme, however, the results show that in the locations that have implemented a self-inspection, programme resources have been freed up to make it possible to start implementing initiatives such as trying to improve the environmental aspects of cleaning.

Tacit knowledge is the guiding principle rather than written procedures

Cleaning and sanitation is an area in which routines are mostly based on knowledge of what is believed to work rather than evidence-based knowledge. Procedures are kept as tacit knowledge rather than in the form of written procedures. Thus, interviewees would like to see more documentation for techniques and for quality assurance tools to determine the quality of the cleaning. Also, better methods to design and plan cleaning and sanitation as well as financial tools based on results. Also certification systems are needed. The growing need for documentation in modern organization makes it important to develop certification and audit schemes for cleaning and sanitation in foodservice. Such schemes should be adapted to the different foodservice environments, depending on the size and type of technology used. Street-level bureaucrats would like methods to be developed to determine cleaning quality measured by objective parameters such as micro-organism count and temperature. Interviewees expressed a wish for external audit documentation such as that generated by the food inspectors and cleaning companies, etc. Documentation from other sources could, for example, be datasheets on cleaning methods and washing and floor-cleaning water usage, as well as hygiene testing carried out during inspection visits. Some kitchens in the study conducted their own hygiene tests, but at the same time, they indicated that these results were not generally included in a specific cleaning management system. In addition, it was reported that the food authorities conducted hygiene testing in conjunction with inspection visits, but that the kitchens did not have direct access to this documentation.

Educational opportunities are lacking

Results point to the fact that there is limited knowledge about both planning and management of cleaning and sanitation, as well as about the operational procedures. One of the reasons for this is a lack of educational and in-service training opportunities. Cleaning and sanitation must be developed in the curriculum in the basic education of dietitians, especially with regards to plan-

ning and management, and more in-service training opportunities should be available. Especially, there is a need for knowledge of how to take environmental, working environmental and economic considerations into a balanced decision-making process, along with hygienic considerations.

Poor networking and sharing of knowledge

Results point to a need for stronger networks with innovation agents such as colleagues, experts, researchers, authorities, control officials and suppliers. This is the case when choosing methods and appliances. Despite regular requirements that the kitchens give hygiene and working environment considerations the highest priority, they would still like to have the option of prioritizing the environment higher. However, they point out that they do not know enough about the impact of cleaning methods on the environment. Street-level bureaucrats feel that only very limited help and assistance is offered by authorities and experts in the field, and would like to be a part of stronger knowledge and innovation networks.

Discussion

The study shows that although huge efforts are spent on cleaning and sanitation in institutional foodservice, there seems to be significant barriers and obstacles to the successful implementation and operation of effective and up-to-date cleaning and sanitation. The study underlines the fact that there is a great need for putting more status into cleaning and sanitation. This is due to the fact that foodservice already has low status on the organizational hierarchy in institutions such as hospitals and nursing homes. Caterers in many cases fight to be able to put food and nutrition on the agenda in such institutions. Unfortunately, the present study shows that cleaning and sanitation issue might be even further down the agenda. The lack of status and the somewhat problematic attitudes toward cleaning and sanitation is underlined by the fact that many caterers prefer to have somebody else do it. Thus, it is not surprising that the kitchens, to a greater extent, wish to give the cleaning to specialized contractors, either within the same institution or to contract cleaning com-

panies. In the outsourced cases, the management find a clearly higher motivation in relation to the cleaning tasks, and specifically point out the fact that in outsourced cleaning and sanitation, the employees are hired especially to handle the cleaning.

The problematic attitude toward cleaning and sanitation seems to be characteristic for foodservice and catering. Worsfold & Griffith (2003a) found that twice as many butchers as caterers claimed to provide hazard analysis critical control points (HACCP) training for all the staff and that butchers had a greater proportion of their staff qualified in basic food hygiene compared with caterers (Worsfold & Griffith 2003b). Worsfold & Griffith (2003a) found that some caterers appeared to show attitudinal ambivalence, having difficulty transferring their general positive attitude toward specific operational food handling procedures into cleaning.

In a study of educators' educational goals for students majoring in dietetics and hospitality management, Gross & Harris (2002) found that educational goals associated with HACCP, microbial aspects of food safety, and cleaning or sanitizing had lower mean importance ratings than other subjects.

Despite the fact that quite detailed requirements for cleaning and sanitation are in operation as a part of the EU hygiene directive, and even though foodservice operators are expected to implement and document self-inspection programmes, the policies seem to undergo transformations and distortions as they are planned and managed in real life by street-level bureaucrats and carried out by the employees.

Certainly, foodservice management has a strong obligation here, and this is underlined by results. In line with this, von Holy (2003) found that lack of management support and commitment was on the top of the list of key reasons why HACCP most commonly fails. The absence of a food safety budget, the lack of an agreed implementation strategy and the lack of adequate training at all levels of the organization were, according to von Holy (2003), among the main problems regarding successful HACCP implementation in catering.

For example, Coleman & Roberts (2005), in a study of hotel foodservice, found that half of all

respondents displayed a lack of knowledge and awareness regarding specific requirements of European food hygiene legislation, and many believed that the legislation is too complicated. In the same study, only half of the respondents found that their knowledge of food hygiene matters was adequate to undertake the management responsibilities. The Coleman & Roberts results (2005) also showed that six out of 10 respondents found that simplified food hygiene legislation would enable it to be more effectively implemented.

Stakeholders increasingly require tasks to be carried out in compliance with accepted norms and standards, i.e. authorities require cleaning and sanitation to be carried out in compliance with an approved self-inspection programme that meets the requirements for self-inspection covered in the EU directive on hygiene. Catering managers need help and guidelines for implementing their self-inspection programme as caterers in many cases complained about having trouble finding relevant expertise, i.e. consultants who could help implement their self-inspection programme. Better documentation is also needed, and tools to determine the quality of the cleaning, as well as better planning and financial tools. This is also the case in other countries. Worsfold (2005) found that the Welsh Hygiene Award Scheme was a popular way to benchmark hygiene in foodservice, although the study concluded that it was too early to determine whether the initiative has resulted in an overall improvement in the hygiene standards of businesses. In the UK Heartbeat Award Scheme initiative, caterers receive an award for meeting identified minimum criteria related to healthy menu choices, food hygiene and eating environment (Stocker & Howard 1997). Johnson & Chambers (2000) found internal or external benchmarking measures were used by 60–71% of American food service managers.

The theoretical framework of street-level bureaucrats seems to offer some explanation of why policies are not always transformed into actions as expected. The study clearly shows that the coping mechanism suggested by Lipsky, which street-level bureaucrat uses to transform the policies on paper into those at work, is very active in the case of cleaning and sanitation. The results show that the catering management in general seems to have limited knowledge about how to

meet the requirements for cleaning and sanitation. A general point is that the catering staff themselves do not have the skills to develop the way in which cleaning and sanitation is carried out. But as suggested in Lipsky (1980) and Winter (2004), the task environment for implementation plays a great role in policy outcome. Thus, it seems that the very nature of this environment – the foodservice setting – can help explain why implementation of cleaning and sanitation apparently seems to be problematic.

Foodservice organizations differ very much from other companies, for example, the manufacturing industry in terms of their industrial relations and the way they are organized. Characteristics of foodservice organizations include low-pay, high-labour turnover, and high rates of dismissals, accidents and absenteeism (Lucas 1996; Hurst 1997), and foodservice has only a small tradition of taking advantage of research results and methods (Moskowitz *et al.* 2001). Mikkelsen (2004) found that traditional in-house organized foodservice organizations had difficulties in meeting new challenges such as those related to implementation of new principles like environmental management, and Kristensen *et al.* (2005) found that the ability to react toward outside expectations and challenges and to innovate accordingly is often limited.

Gabriel (1988) has characterized foodservice organizations as traditional tayloristic organizations where tasks are carried out according to precise specifications and with very little involvement of the employees. In addition, the foodservice organization plays only a peripheral role in the company compared with the company's core business as pointed out by Mintzberg (1983). This may mean that the foodservice organization is only to a limited extent involved in the organizational change processes that the rest of the company experiences.

The present study suggests that there are obvious challenges to be taken up by different actors and stakeholders in order to help street-level bureaucrats and the cleaning practitioners implement and maintain cleaning and sanitation procedures at ground level.

- Management at the institutions which the kitchens are a part of must move forward and place cleaning on the agenda and support kitchen

management. Priorities must be reflected in the attention the task is given by people in the kitchen and the institution, in educational grants and in time allowed for continuing education and improving skills. The cleaning tasks should be budgeted separately, so they are visible, thus making it possible to continuously evaluate whether they are economically viable.

- The kitchen workers are very aware of the working environment, and would like to continue being able to show their greater and deeper consideration. They themselves are also aware that there are risk points in many areas of the working environment.

- The kitchen workers are very willing to realize the wishes for environmental considerations. The kitchen workers themselves are often aware of which environmental points they would like to focus on. Some kitchen workers are of the view that although they take environmental concerns into consideration, they are not able to document or show any type of registration in the area of environment.

- Suppliers, i.e. manufacturers and cleaning contractors, must be able to develop and deliver the necessary products, service and know-how. Flexible, turnkey, manufacturer-specific cleaning systems that are adaptable to each individual kitchen are a clear wish and a challenge for the manufacturers. Systems must be adaptable to both small and large kitchens. The suppliers have a large task in developing methods that show environmental and working environmental considerations. The great interest on the part of the kitchen workers combined with the interest on the part of government purchasers will create increased demand for the products with the least environmental impact.

- For manufacturers of large industrial kitchen equipment, there are obvious opportunities to build in added value by improving the cleaning tools. For example, tables without under shelves and corners that are hard to get to, machines (slicers), shelves, etc.

- The educational system also faces challenges. Through more and improved courses, cleaning will gain greater visibility and thereby an opportunity to achieve higher status. Better instructional materials at schools for food professionals are also important.

• Finally, authorities have a great responsibility in providing help for implementing self-inspection. It is a huge task for kitchen workers to research, understand and find the time for the drafting, during working hours in which they are already busy. The basic attitude toward self-inspection is actually excellent; but, they really need some type of implementation or perhaps even a hotline!

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