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The Impact of a Worker Health Study  
on Working Conditions

*by Pam Tau Lee and Niklas Krause*

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## The Impact of a Worker Health Study on Working Conditions

PAM TAU LEE and NIKLAS KRAUSE

### BACKGROUND

IN the spring of 1998 the San Francisco-based Hotel Employees/Restaurant Employees Union (HERE) Local 2 began preparations for contract negotiations. For many years room cleaners had complained of high rates of injuries and musculoskeletal disorders. The union was aware that many had undergone surgery and several had become permanently disabled. Believing that these injuries could be job-related, the union leadership felt it was time to tackle this problem and find ways to protect their members' health and safety.

Although the hospitality industry employs roughly 1.7 million workers in 43,000 establishments nationwide, very little health research has been conducted on this sector (1,2). HERE concluded that they needed original research which would look at workload, health, and employee/employer relationship issues.

Traditionally, collaborations between universities and community organizations such as unions arise from the interests and priorities of the academic partners, not the community organizations. In addition, the selection of research methods and design is usually considered within the domain of the academics. This study took a non-traditional path, with the union initiating the partnership and defining the research priorities and methods.

The union looked to UC Berkeley's Labor Occupational Health Program (LOHP) to serve as an intermediary with university-based researchers at UC's School of Public Health (SPH). The union also asked LOHP to direct the project as a whole. This was necessary since the union had no prior experience in

working with academic-based researchers. However, union leadership was comfortable with LOHP because of its strong standing with labor and successful track record in facilitating joint labor-management initiatives around issues of health and safety. The union asked LOHP to build a team that included SPH researchers who could apply participatory action research methods and involve workers in all phases of the project.

#### THEORETICAL FRAMEWORK: PARTICIPATORY ACTION RESEARCH

Participatory action research is “a systematic investigation, with the collaboration of those affected by the issue being studied, for the purpose of education and taking action or effecting social change” (3). This community-driven research begins with the goals and questions of the community, is participatory at every level, is culturally sensitive, and uses a diversity of communication tools and languages. It involves sharing of power and resources with the community, and attempts to build a common language among partners.

A participatory study assembles an appropriate team of research partners, which may include health educators and social scientists, to work in real collaboration with the community. It ensures that ownership of data and methods of dissemination are considered collaboratively, and it includes a collaborative evaluation process that examines the potential and actual impact of the intervention (4). Other objectives include education and empowerment of the community by making resources available for the study of community-defined issues, facilitation of activism, and involvement of both the researchers and community in improving conditions and quality of life (5).

#### TEAM PARTICIPANTS

HERE Local 2 was the lead community organization. HERE represents approximately 75% of all non-managerial hotel employees in San Francisco. The union membership is more than 8,500 workers; the majority are employed in the 23 major hotels that have contracts with HERE. Local 2 frequently mobilizes its diverse membership to participate in activities such as picket actions, organizing drives, and workplace committees.

Room cleaners typically make up 27% of the workforce in the hotel industry, with food and beverage at 18%, front desk clerks at 9%, and managers at 7% (6).

Ninety-nine percent of San Francisco room cleaners are female. Filipinas account for 31%, other Asians 35%, and Latinas 28%. English is not the first language for 95% of the room cleaners (7).

LOHP at UC Berkeley was responsible for direction of the project, coordination between the union and SPH researchers, and facilitation and training of room-cleaner groups involved in the project. Established in 1974, LOHP is a public service arm of the Center for Occupational and Environmental Health at SPH. Its primary purpose is to serve working people and their unions, particularly in Northern California, and assist them in taking an active role in identifying and controlling occupational hazards. Known for its innovative, action-oriented training methods, LOHP also is recognized as a leader in the development of multilingual training materials appropriate for low literacy audiences, for work at the policy level to advance prevention strategies, and its strong record of successful collaborations with community-based organizations.

To facilitate a true community-based participatory research study, LOHP identified as potential collaborators public health researchers who were knowledgeable about and comfortable with the use of this approach. Physician and epidemiologist Niklas Krause, a faculty member in Occupational and Environmental Medicine at the University of California, San Francisco, with extensive experience in collaborating with both unions and management, was the lead public health researcher suggested by LOHP, and joined the project after a meeting with union representatives. Pam Tau Lee, LOHP's Labor Services Program Coordinator, served as co-director, and brought with her professional background her own personal experience years earlier as a room cleaner.

Partners in participatory action research may be differentially involved in different stages of the research. In the present study, for example, Dr. Krause and the academic partners took primary responsibility for study design. Consistent with participatory action principles, however, they were respectful of and attentive to community partner concerns. Thus, although these researchers would have preferred a joint labor/management setting for the study, they understood the union's expressed need to focus its limited resources on researching specific room-cleaner health and workload issues. Since these topics were unlikely to generate interest

or involvement from the employers in this period just prior to contract negotiations, the union's preference for a study design that was more limited in scope was given close attention by the academic partners and guided their development of the research design.

### DEFINING RESEARCH TOPICS

Over the years room cleaners had complained that their workload had increased. Here was an opportunity to cut through the rumors to find out if a significant number of new duties had been added, and if so, what if any was the impact on worker health?

Identifying the specific data needed took four months. The team agreed to an approach that would combine the knowledge of the workers and the best available science. A core group of 25 room cleaners attended six focus group sessions, held every two weeks for three hours after work. LOHP facilitated group discussions to look at workload, physical strain, relationship with management, and worker disability. The information from these discussions provided the researchers with several specific issues to study in more depth.

To inform the focus group discussions, LOHP integrated training on ergonomics and control measures into the sessions. Each session utilized adult education techniques and interactive activities such as hazard risk mapping, analysis of illness and injury reports, body charting for workplace pain, and brainstorming.

A mock hotel room was also set up with two beds, a bathtub, a sink, furniture, and equipment. Room cleaners were given a short introduction to ergonomic risk factors. Then the focus group facilitator asked for volunteers to go through the motions of cleaning a room. As volunteers went through the motions, the rest of the participants were instructed to call out "freeze" when they spotted a risk factor for injury. Using this process the researchers found that the weight and awkwardness of linen carts and vacuum cleaners, weight and size of bed spreads, placement of furniture, number of beds, and weight of mattresses were all potential sources for ergonomic stress. Cleaning products which did not work effectively and required repeated scrubbing were another potential problem area.

To understand what questions to pose regarding workload and tasks, the room cleaners were asked to list on index cards every task required to get their job done. Then the LOHP facilitator asked the group to identify those tasks which created

time pressures or other stresses for the room cleaner. People were then asked to identify when these particular duties were introduced as part of a room cleaner's job. For instance, facilitators learned that linen carts were once fully stocked during the evening by utility personnel. This crew was gradually eliminated and their duties turned over to the room cleaners. Also, the changing of shower curtains was once performed by inspectresses. As this group was downsized, the task of changing the curtains was given to the room cleaners.

#### ENHANCING PARTICIPATION

Several factors were considered to enhance participation in the focus groups. Since English is not the first language for 95% of the San Francisco room cleaners, simultaneous interpretation into Spanish and Chinese, and translated written materials, had to be available at each session. Dinner and a stipend of \$15.00/hr. were provided to each participant. These stipends communicated appreciation for their expertise and recognized the hardship of meeting for three hours after work. Many of these women lived outside of San Francisco and had to travel an hour or more after dark to get home.

#### DESIGNING THE SURVEY

Once the researchers identified the specific data needed, their next task was to create a questionnaire to be distributed to larger numbers of room cleaners. It was important to formulate questions that would capture accurate information about workload, job pressure, and employer relations. The researchers combed through standardized questionnaires to select appropriate psychosocial questions. A draft questionnaire was produced, but the union considered it to be too long and complex. This was a concern because of low literacy levels among some room cleaners, not only in English but in their native language as well. A long and difficult questionnaire could hold them back from completing the entire survey.

Hearing the union's concerns, the researchers explained that completeness was necessary to maintain the scientific integrity of the standardized scales and to provide valid points of comparison. This was important since the union wanted the ability to compare health conditions of room cleaners with other working populations. How the team overcame this potential obstacle is described in more detail below.

### PILOT TESTING THE SURVEY

The core group of 25 room cleaners met with the researchers to pilot test the draft questionnaire. It was originally written in English and then translated into Spanish and Chinese. As predicted, the room cleaners complained that it was too long and some questions difficult to understand. They suggested that survey “helpers” be available at each survey site to help the room cleaners understand the intent of the questions and the complex directions for filling out the form.

As a result of the process, researchers learned which sets of questions to keep and which to delete; LOHP and the union came away with concrete ideas for how to design the implementation phase; and translators found better ways to translate questions using terminology more familiar to this audience.

### SELECTING THE SAMPLE POPULATION

The researchers advised the union to select hotels that differ by business category, by type of customer, and/or by quality of labor-management relations. Variation in such hotel characteristics allows for statistical comparisons that identify the effects of the different work environments on the health and well-being of room cleaners. Only if differences in working conditions are related to differences in health status, can changes in working conditions be proposed to improve the health of hotel workers.

The union explained that San Francisco hotels generally fall into four categories: luxury/business, convention/business, tour group/business, and family/tour group. In addition, the relationship between the union and the hotels varies from fairly positive to more adversarial. The union selected four hotels, one from each business category. Two of these hotels had a relatively positive labor-management relationship and two had a more adversarial one.

The union provided the latest scheduling and seniority lists from the four selected hotels. LOHP and the researchers then worked with a subcommittee of workers from these hotels to update the lists, deleting workers who were no longer employed, and adding the names of new hires. The union announced the study in meetings and in flyers. Union representatives also contacted all employees at their workplace and personally invited them to participate in the study.

### OUTREACH PLAN

To ensure the accuracy and usefulness of the results, the researchers and union wanted a high participation rate from the room cleaners. Achieving a high turnout would be difficult. It was necessary to develop an outreach plan to mobilize room cleaners to gather after work at locations away from their hotels and spend at least an hour filling out the questionnaire.

The outreach effort was a “mini-campaign” waged by the union and its rank-and-file. The union appointed and trained leaders from each of the four hotels to be active members of an outreach team. There was one leader per approximately twelve workers. In most cases these assignments were made by language and other social or cultural factors. Armed with copies of seniority lists, outreach team members followed up with individual workers. They explained the importance of the questionnaire and got their co-workers to understand that a high participation rate would increase the credibility of the study and could help their representatives in negotiating for better working conditions.

The union supplemented this activity with letters sent to each worker's home. Union staff and workers also distributed leaflets at the various work sites. Announcements were made by union staff at union committee meetings, stressing the importance of this study and encouraging members to contact their friends at these hotels to participate.

The outreach strategy produced several benefits. The project eventually developed an accurate list of all the room cleaners who agreed to take the survey. This provided a good indication of the participation rate. In addition, outreach made certain that the room cleaners knew when and where to take the survey, and what time they could expect to be finished and head home. Clear information and communication helped to foster good participation.

### SURVEY LOGISTICS

Three survey sites were set up within walking distance of the hotels. Two of the locations were church community rooms and the third was at a union hall. Each site needed to be staffed with at least 5-12 people, depending on the number of room cleaners expected to turn out.

Although most sessions were after work, one morning survey session was



offered at the HERE union hall for workers who were on their day off, on vacation, or on disability leave. To maintain confidentiality, rooms were selected that had their own separate street entrances. Rooms were also strictly off limits to union staff and employers. Only survey participants, survey “helpers,” and researchers were allowed in the rooms.

Learning from the pilot test, room-cleaner leaders were recruited to become survey “helpers” at each site. LOHP also recruited UC graduate students and community social service workers to be survey “helpers” to ensure that there were enough personnel to staff the three sites. Their task as survey “helpers” was to assist room cleaners who had difficulty understanding the questionnaire. It was important that “helpers” speak and understand Spanish, Chinese, or Tagalog.

LOHP conducted a special training session for the “helpers,” covering the protocol for administration of the survey, their role as interpreters and explainers, and the importance of not influencing participants' answers. The completed questionnaires were collected by the university research staff, not the union members, to insure the neutrality and absolute confidentiality of the process.

On the day of the survey, the outreach leaders stationed themselves at the time clocks at the various hotels, where workers punched out at the end of the day, or just outside the employee entrances. When the room cleaners finished their shifts, those who agreed to participate knew to meet at the employee entrance. After 15 minutes, the majority of participants were assembled and walked to their survey site together. Because many of the room cleaners lived in areas that had poor evening transportation, arrangements were made to take these workers home. This made it easier for the room cleaners to agree to participate.

The detailed planning that went into the outreach proved to be very successful. Of 373 eligible day-time room cleaners, 258 (69.2 percent) participated in the survey.

#### ADMINISTERING THE QUESTIONNAIRE

At each survey site, check-in tables and signs were set up by the crew of “helpers” assigned to that location. A “welcome” person was stationed at the door to direct people to the check-in tables. Survey “helpers” at the tables checked off names and distributed the questionnaires and pencils. The “helpers” also made people

feel comfortable and safe by assuring each room cleaner that the employer and the union would not know how they filled out the questionnaire. The individual survey information was confidential and would be housed at the university.

With a copy of the questionnaire in hand, the room cleaners were directed to tables where they could sit down and fill it out. For every three tables, a researcher or “helper” was available to answer questions. Once the room cleaners completed the questionnaire, they were instructed to take it to a UC researcher who checked to see that every question was marked with an answer. When questions were left blank, the researcher encouraged the room cleaner to go back with a survey “helper” and fill in the blank answers to the best of their ability. When the questionnaire was completely done, the room cleaner watched as the researcher deposited it into a sealed box. Then the room cleaner was free to head home.

#### ANALYZING THE DATA

Once the questionnaires were collected, the information was entered into a database program by a graduate student researcher. UC researchers then prepared and provided simple frequency tables for all answers to the questions, stratified by hotel. Then the LOHP focus group facilitator brought together the original core group of 25 room cleaners and two UC researchers to review the information. The room cleaners, researchers, union president, and union staff broke into several small groups to discuss the data. Each small group was assigned a different set of data. They were asked to review the information and come back to the whole group with their analysis of it. After the small groups reported back on their findings, others attending were free to provide additional information or other perspectives. This meeting was originally scheduled for three hours, but the discussion was so fruitful that participants voluntarily extended the time and met another hour.

#### ROOM CLEANER INSIGHTS

Because the researchers did not have first-hand knowledge of how rooms are cleaned, they had many questions. They looked to the room cleaners for clarification. For example, why did “lots of garbage in the room,” “linens,” and “beds” surface as big workload problems?

Room cleaners explained that garbage is now more work because convention

and meeting participants collect bags of brochures and trinkets. Convention catalogs and brochures left in a room can weigh ten pounds or more. Guests eat on the run and bring in take-out food, leaving paper containers, cans, and bags on tables or in trash cans. More garbage translates into more trips to pick up trash and heavier trash cans.

Linen is more work because many hotels now use three sheets per bed and more pillows. A king bed can require up to six pillows. This creates more travel to and from the linen closet, because hotels usually do not have enough usable linen available when room cleaners stock their work carts in the morning.

Beds are also more work than in the past. At one time, rooms had either one double bed or two twin beds. Starting in the 1980s, hotels changed to two double beds. Then one of the double beds was replaced with a queen bed and fold-out sofa, or a king bed. In addition, the new beds came with heavier mattresses and bed spreads. The older, small beds were easier and faster to make.

The majority of hotels renovated their rooms with new furniture but the size of the room often stayed the same. With larger beds in the same spaces, room cleaners have less room to move around to make the bed. When beds are placed close to the wall, room cleaners often have to use their hips to shove the mattress to the side so they can bend over to tuck the sheets and blanket under the mattress. They then go to the other side and lean over to shove the mattress back into place.

Informed by insights like these, the researchers spent another four months doing more analysis and cross-checking the data before writing their final report and submitting it to the union.

### SELECTED FINDINGS AND CONCLUSIONS

According to a preliminary report of the study which the researchers prepared for the union (8), the overall health status of these room cleaners appears to be worse than that of the general US population. Self-rated general health among room cleaners (average score of 56) was significantly lower than among the general US population (average score of 72). More than three-quarters of the room cleaners reported work-related pain or discomfort. In 73% of all cases this was severe enough to visit a doctor, and in 53% of all cases it was severe enough to take time off from work. The relatively high frequency of work-related musculoskeletal

symptoms cannot be explained by the aging of the workforce, as was suggested by management in discussions with the union. The study actually found equally high rates of musculoskeletal symptoms among younger and older employees.

Significant differences in health status among the four types of hotels were found for several health measures. Employees of one hotel reported consistently better than average health on nearly all health measures. Further analysis is needed to determine to what extent these differences are caused by differences in physical workload and psychosocial working conditions, both of which appear to be more favorable at the hotel showing better health status.

Although 77% of all the room cleaners said they had work-related pain during the last year, only 50% reported this pain to their supervisors or management. Only 23% had a formally reported work-related injury during the last year. The reasons for this apparent under-reporting of potentially compensable work-related pain need to be explored in future research. Work days lost because of work-related pain in general, and because of formally reported workers' compensation injuries or illnesses specifically, varied considerably among the different hotels.

It is well known that heavy manual labor may lead to overuse and injury of the musculoskeletal system (9,10). Although no longitudinal data are available, the results of this study suggest that the physical workload of the room cleaners increased during the last five years. The extent of the increase, the particular tasks involved, and the reasons for the increase differ among the four hotels studied. Although the number of rooms assigned is nearly identical for every room cleaner at each hotel, there are considerable differences in current workload by several measures among room cleaners and among different hotels. Additional factors that determine the actual workload of room cleaners include the need to travel to another floor or building, problems with replacement linen, the need to restock missing supplies on the carts, varying amounts of garbage and food left in the rooms, extra scrubbing required in older or very dirty bathrooms, cleaning of coffeepots, and dealing with various extra amenities. Therefore the number of rooms assigned per worker per day is an insufficient measure of physical workload and insufficient to assure appropriate and equal workload assignments.

In addition to physical job demands, 83% of the room cleaners reported constant time pressure. Other job stressors often reported include lack of respect from supervisors (40%), poor job security (52%), and poor job promotion prospects (61%). On average, 30% of the room cleaners experienced an imbalance between their work efforts and the material and nonmaterial rewards they receive. This imbalance is an indicator for job stress. In addition, 38% of the room cleaners experienced high levels of job strain, measured as the combination of high job demands and little job control. Both these findings suggest that more than a third of the room cleaners experience high levels of job stress. The effects of these combined stressors on well-being, health, and productivity of hotel room cleaners need to be evaluated further.

In summary, the findings of this study suggest an association between poor working conditions and reduced health in hotel room cleaners. Room cleaners reported increasing physical workloads in recent years, and a large proportion of room cleaners were exposed to high levels of job stress. The study also found that room cleaners have high rates of work-related pain and disability, and that self-reported general health of room cleaners is below the national average.

#### DISSEMINATING THE INFORMATION

As described above, the preliminary report to the union concludes that the findings suggest “an association between poor working conditions and reduced health in hotel room cleaners. Room cleaners report increasing physical workloads in recent years, and a large proportion of room cleaners are exposed to high levels of job stress. This study also found that room cleaners have high rates of work-related pain and disability, and that the health status of room cleaners is below the national average” (11).

Statistical multivariate analysis is planned to formally test for the association between working conditions and health and to determine the most important occupational risk factors. The substantial variation in both working conditions and health status among hotels indicates that workload and work organization in housekeeping can be designed in ways which would reduce the burden of illness and disability currently experienced in this occupation.

Upon reading the report, the union invited the lead UC researcher to present these findings at a joint contract negotiation session between union and

management. The researcher agreed. A 45-minute presentation with slides was made to the entire negotiating committee of well over one hundred people. Those present included the union leadership along with many rank and file negotiators, the 23 hotel general managers, their lawyers, and human resources personnel. The presentation was followed by an hour-long closed-door session with the entire employer group and only three union representatives present. This commitment by the researcher to present his report in person and undergo questioning by the employer group was very significant. It lent credibility to the research and allowed the employers to ask questions and discuss the findings.

In the afternoon negotiating session, a panel of seven room cleaners presented their stories. They talked about their injuries and explained the physical and psychological demands of the job. They also explained the hardship these injuries caused for them and their families. Because they had been involved in the research, they could speak with great passion and clarity about their situation and about the proposals the union was making to protect their health.

The data from the study enabled the union and room cleaners to make and justify a contract proposal calling for a significant reduction in housekeeping workload. The union was successful in negotiating a contract which reduced the maximum required room assignment from 15 rooms to 14 rooms per day. In some hotels special cleaning requirements could drop the maximum assignment to 13 rooms. By lowering the maximum work assignment, these workers set a new standard which can potentially protect the health of room cleaners across the country. The union also won agreements for future health and safety studies covering other categories of hotel workers including food servers, telephone operators, and kitchen workers.

#### LESSONS FROM THE RELATIONSHIP

The participatory action research approach breaks with conventional approaches to gathering data “on” oppressed people. By contrast, “participatory research is a means of putting research capabilities in the hands of the deprived and disenfranchised people so that they can transform their lives for themselves” (12). While this method is especially appealing to institutions such as labor unions,

applying its principles can be challenging. Participatory action research, accepting the politics of research, requires a good emotional intelligence quotient (or EQ), a high tolerance of conflict, and excellent group process skills. By definition, [it] is a research method that employs group process to generate and utilize research” (13)

At a minimum the partners must agree to methods that are participatory, enhance community capacity, and balance research and action. Willingness to share power and build trust is key.

The labor movement is in a battle to maintain and increase membership. If membership is to grow, strategies and tactics employed by the unions must enable them to negotiate decent contracts for their members and win new contracts. Yet financial resources are often very limited. Although bold moves may be required to improve contracts, unions may be reluctant to take risks. When planning new projects, expected outcomes are often defined ahead of time. Uncertainty is avoided.

By agreeing to collaborate on this project, both HERE and the academic researchers were entering into uncharted waters. HERE knew the workers were getting hurt and sick from the job, but would the data provide this evidence? How could the union mobilize members for action without compromising the scientific protocols? And for the researchers, how could they respect the needs of the union and also maintain the methodological rigor and scientific integrity of the study? The union puts it this way: “This was like a marriage with no chance of getting a divorce in case things didn't work out.” The researchers realized they could collaborate with HERE when, after a series of exploratory discussions, the union representative made it known that he felt comfortable with the process and would abide by the findings, even if these turned out to be negative for the union. That statement set a tone of mutual trust.

LOHP's work to facilitate the relationship helped build a foundation for the sharing of power. Assuming the role of a third party, LOHP helped to build bridges between the union and the academic researchers. According to the union, “We needed a third party to keep us (the union) in line. We had to be disciplined and learn how to participate but not taint the process. A third party helped us to sort through our concerns and helped us present these in a way the researchers could understand. We didn't know anything about the world of the academics

and we wouldn't have been able to figure out what to do without the help of people who understood us and understood the researchers as well.”

LOHP sometimes held separate discussions with the union and the researchers to hear concerns and brief each party on the interests, needs, constraints, and culture of the other. Another role of LOHP as facilitator was to keep the project on track, keep the parties informed, and arrange check-in conference calls before moving the project to the next phase. Each party understood the importance of everyone being on the same page, and each exercised patience in making sure details were clarified before proceeding with each new stage.

### UNION RESOURCES

In addition to large chunks of their own time, the union leadership also allocated staff and dedicated a large budget to see the project through. Staff resources were channeled toward recruiting selected room cleaners into the focus groups, and organizing hotel committees. Internal weekly staff meetings included regular reports on this project as well as action planning. Special meetings were sometimes called so that staff members could work through concerns they had regarding the project. An initial grant of \$30,000 from the Rockefeller Foundation enabled the local union to launch the project. Remaining funding came mostly from the union and was over \$100,000.

### RESEARCHER ISSUES

Applying participatory action research methods to workplace issues raises several concerns for researchers. The parties should address these issues early in the process. For example, participatory methods usually require a greater time commitment from the researchers than traditional research methods. Time is expended on making the process work. These methods also require researchers to have excellent inter-personal skills. This project was fortunate to find researchers and graduate students who were open-minded, flexible enough to adjust to frequent schedule changes needed by the union, accessible, good listeners, and good at explaining scientific protocols in plain language (the last being the most important).

Because unions and community groups are usually strapped for funds, a significant amount of time on this type of project may go unfunded. So while the researcher is able to develop and utilize the research data, there is no



guarantee that there will be funding available to produce published articles later. Therefore, this type of project may not advance a researcher's career as effectively as other types of research.

### CONCLUSION

Subsequent to the study, the hotel workers and their union representatives in San Francisco demonstrated that a reduction of physical workload and an improvement of working conditions for hotel room cleaners are feasible in the hotel industry. Their new contract included substantial workload reductions. Evaluation of the working conditions and health status of room cleaners in a participatory research project was a helpful tool in bringing about those changes. It is hoped that this description of the process and results from this project will prove to be helpful in initiating further improvements in the health and working conditions of hotel room cleaners locally, nationally, and internationally.

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#### ABSTRACT

A research partnership of representatives from labor, academia, and public health enabled unionized San Francisco hotel workers to achieve important policy changes in workplace health and safety. Known as the "Housekeeping Study," the project took sixteen months to complete.

A unique aspect of the project was that it utilized participatory action research methods, involving workers themselves as full participants in the study. A core group of 25 hotel room cleaners was involved in each phase of the project.

The study developed health data which enabled room cleaners and their union to formulate and justify a contract proposal calling for a significant reduction in housekeeping workloads. The employer association agreed to a contract which reduced the maximum required room assignment from 15

rooms to 14 rooms per day in 14 San Francisco hotels. By lowering the maximum work assignment, these workers set a new standard which can potentially protect the health of room cleaners across the country.

The project can serve as a model for worker and union participation in academic research, as well as for the application of research to improving working conditions, particularly for low-wage immigrant workers.