FINAL PROGRESS REPORT

Project Title: Worker health and safety in Chinatown Restaurants: A CBPR study

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List of abbreviations

CBPR Community –based participatory research

CPA Chinese Progressive Association

LOHP Labor Occupational Health Program (UC Berkeley)

DPH/DOH Department of Public Health/ Department of Health (used interchangeably)

RWLG Restaurant Worker Leadership Group

OSHA Occupational Health and Safety Administration

OLSE Office of Labor and Safety Enforcement

Abstract

The San Francisco Chinatown Restaurant Worker Health and Safety Project was a community-based participatory research (CBPR) effort that used an ecological framework to better explore and address working conditions in Chinatown restaurants. The restaurant industry employs almost one-third of all adult workers in Chinatown and the work is characterized by many physical and psychosocial stressors which may be exacerbated for low-wage Chinese immigrant restaurant workers due to language barriers, low educational levels, and lack of health care coverage. The project brought together a diverse set of community members, researchers, and government officials from the Chinese Progressive Association (CPA), the San Francisco Department of Public Health (DPH), UC Berkeley's School of Public Health and Labor Occupational Health Program, and UC San Francisco's School of Medicine.

In accordance with CBPR principles, the project used a collaborative approach that built upon diverse areas of expertise and involved all partners throughout the research and action stages. In addition to partnership development, project aims included conducting a detailed occupational health and safety survey of 400 restaurant workers and developing and piloting an observational restaurant worker safety checklist in all Chinatown restaurants, as well as widely disseminating and applying research findings for education and action to the improve working conditions and lay the groundwork for pilot testing future interventions. A final aim of the project was to conduct a participatory evaluation to assess the partnership's effectiveness in working together as it undertook research and action.

The partnership completed the pilot test and data collection of the observational checklist in all but two of Chinatown's 108 restaurants and collected 433 detailed (103 item) surveys of current and recent Chinatown restaurant workers. A core group of 9 such workers was hired and trained, and worked closely with other partners to develop the research instruments and to design and implement recruitment strategies for the survey. Seventeen additional workers were hired and trained as survey recruiters. Worker participation was critical to the project's accomplishments including making the research tools more relevant to the population, and achieving a high response rate and improved interpretation, dissemination and use of study findings.

Key findings from the survey were sobering: 50% of workers reported minimum wage violations, with other forms of "wage theft" reported including withholding of wages, and employers' taking a portion of workers' tips. Forty two percent of workers reported working over 40 hours a week, with half of those working 60+ hours; 40% reported getting no rest or meal breaks; and 76% not receiving overtime pay. Close to two-thirds (64%) reported receiving no on the job training, and high proportions reported having sustained burns (48%) cuts (40%) and slips or falls (17%) in the past year. High levels of psychosocial stress also were reported, including increasingly demanding work loads (72%), feelings of job insecurity (68%) and being yelled at by their superviors and others

in the work place (40%). Only 3% of workers reported having employee paid health care, with the majority (54%) paying for their care out of pocket.

Findings from the observational check list were equally disturbing. Of the 106 restaurants observed, 65% did not have any of the required labor law postings displayed, 62% had wet and greasy floors, under half (48%) had non-slip mats, and 82% did not have fully stocked first aid kits.

Study findings were presented in a detailed report, academic publications, presentations at local and national meetings, and through the mainstream and ethnic media press. A colorful 27-page report for workers and policy makers, presenting key study findings and recommended actions, was released at a press and public education event that attracted 170 people, including 4 of the 7 City Supervisors, three of whom spoke to express their support. A Low Wage Worker Bill of Rights also was presented at this event, and included in the Booklet as were additional recommendations including the convening of stakeholder roundtables on healthy jobs, healthy communities; the strengthening of local government enforcement of labor and health and safety laws; and significantly increased investment in healthy economic development and responsible employment practices in communities like Chinatown. Follow up actions to date have included letters from the DPH to OSHA, the California Division of Labor Standards Enforcement and the Division of Workers' Compensation citing study findings and urging improved compliance. Two local supervisors also recently introduced a wage theft ordinance based on our study findings.

An article in the American Journal of Industrial Medicine, (2010) and the sharing of a report and the project's observational check list tool through a DOH web link (http://www.sfphes.org/publications/Restaurant_Health_Safety_Checklist.pdf) were additional important steps for dissemination and subsequent action. Additionally, a paper on the check list was submitted to Public Health Reports and is under final review; if accepted, this will further help disseminate this new instrument and information about its utility and testing to public health and occupational health agencies and departments around the country and beyond. Worker- friendly educational materials, (e.g., Frequently Asked Questions) also were developed and disseminated in Chinese and English and information further provided through educational "afternoon teas" and community meetings.

A final anticipated action outcome—laying the groundwork for a DOH program to incentivize restaurants that were "good employers" --proved unfeasible at this time, in part given the poor economic climate, but may be revisited if appropriate at a later date.

As the population of low-wage immigrant workers in the restaurant sector continues to climb, and as restaurants remain among their largest employers, the utility of an approach to research that can combine the insights of workers with those of occupational health specialists and other professionals deserves much more careful attention. We hope that this study will provide the foundation for a continuing collaborative effort between community, health department and university partners to study and work to improve working conditions and health and safety for this growing immigrant worker population.

Section 1

Highlights and key findings

This is, to our knowledge, one of the largest studies ever conducted of immigrant restaurant workers in the US, and the fact that it was succcessfully completed through a CBPR partnership, within the context of an ecological model, further underscores its unique nature.

A highly effective partnership was developed between community, health department, and academic partners and a core group of restaurant workers who were hired and extensively trained for active involvement throughout the research, from instrument creation to dissemination and action. Although we had originally hoped to include 15 such workers, their heavy work and family obligations precluded this, and we instead relied on the core group of workers which included 9 over the course of the project plus 17 additional restaurant workers who were successfully hired and trained as surveyors for critical but more time limited roles. Two of the surveyors eventually joined the core group of worker leaders.

Our study of the association between physical and psychosocial restaurant conditions and occupational illness and injury in Chinese restaurant workers was also highly successful. A detailed, 103-item survey was developed and administered to 433 restaurant workers Final n = 405). Key results included that 50% of workers reported minimum wage violations; 42% reported working over 40 hours a week, with half of those working 60+ hours; 40% reported getting no rest or meal breaks, and 76% received no overtime pay. Close to two-thirds (64%) reported receiving no on the job training, and high proportions reported having sustained burns (48%) cuts (40%) and slips or falls (17%) in the past year. High levels of psychosocial stress also were reported, including increasingly demanding work loads (72%), feelings of job insecurity (68%) and being yelled at by their superviors and others in the work place (40%). Only 3% of workers reported having employee paid health care, with the majority (54%) paying for their care out of pocket.

A 13-item observational tool for use by restaurant inspectors was developed under the leadership of the DPH partner, and like the survey, benefited from the input of all partners including the resturant worker leadership group. The final instrument was piloted by a DPH staff member of the project in all but two of Chinatown's 108 restaurants. Although the administration of the tool took place primarily in the morning hours, and hence may have produced conservative results, its findings were never the less important. Observed preventable occupational hazards were common in Chinatown restaurants. The majority of kitchens visited were small with overcrowded range tops (70%) and cooks working in overcrowded conditions, sometimes in kitchens with blocked emergency exits. 62% of establishments visited had wet and greasy floors, creating hazards for slips and falls while walking through the kitchen area, yet less than half of all establishments (48%) had mats specifically designed to prevent slips and falls. 87% of restaurants surveyed lacked proper storage of knives on the counters or walls, 37% lacked adequate ventilation, and 28% lacked adequate lighting. Although 70% of restaurants had band-aids available, 82% of restaurants did not have fully stocked first aid kits. 18 of the 22 establishments (81%) that slice, grind or process food did not have any visible guards for their

slicing, grinder and food processing machines. Administration of the checklist tool took approximately 10-15 minutes, and the tool was placed on the DOH web site for use by other health departments (http://www.sfphes.org/publications/Restaurant_Health_Safety_Checklist.pdf).

Culturally relevant worker education took place throughout the training of the 24 restaurant workers involved with the project (e.g., through discussions of worker health and safety issues, tips on how to protect oneself and one's colleagues from work related injuries, and information on worker rights and supports for assuring that they are honored). Worker-friendly educational materials, (e.g., Frequently Asked Questions) also were developed and disseminated in Chinese and English and information also provided through educational "afternoon teas" and community meetings.

Numerous approaches were used to help disseminate the findings of this study. An initial article was published in a special issue of the American J of Industrial Medicine and another article is under final review for Public Health Reports. The checklist observational tool also was posted on the web site of the SFDPH (http://www.sfphes.org/publications/Restaurant_Health_Safety_Checklist.pdf) to faciliate easy access. A CPA led booklet, Check, Please! has been widely disseminated in print form and both it and its executive summary are available in Chinese, English and Spanish and on the CPA web site (www.cpasf.org). The document included several proposed action plans, including adoption of a low wage worker bill of rights. Many additional recommendations are included in a detailed 75 page report summarizing the survey findings and will appear in forthcoming publications. Close to a dozen talks on the project and its research outcomes have been presented at venues including APHA (n=5),major research universities, and both Asian Pacific Islander and occupational health forums and meetings. A doctoral dissertation focused in part on the evaluation component of the project also was successfully completed. Eight additional publications are in progress by various academic and community partners, and several mass media articles have appeared in the mainstream and ethnic media, including a lengthy article in the SF Chronicle and several stories on local news stations following the project's Sept. 17 report launch and press event.

Evaluation of the project and particularly the partnership itself through a multi-method approach proved highly successful, and also contributed to partnership growth, increasing trust between members, intra-group communication, and effective overall project functioning.

Translation of findings

The project's intial publications include recommendations for translation and use of the study findings and methods, including adaptation and use of the survey in other restaurant worker populations, and of the check list, which is posted on the SFDPH web site (http://www.sfphes.org/publications/Restaurant_Health_Safety_Checklist.pdf) for ue by by other health departments. The policymaker-, media-, and lay-friendly report, Check, Please! (www.cpasf.org) includes several proposed actions, including adoption of a Low Wage Worker Bill of Rights; the convening of stakeholder roundtables on healthy jobs, healthy communities; the strengthening of local government enforcement of labor and health and safety laws; and

significantly increased investment in healthy economic development and responsible employment practices in communities like Chinatown.

Outcomes/Relevance/Impacts

This study produced a simple observational tool that can be used by health departments around the US to better assess health and safety conditions for workers in restaurants. The research further produced a detailed and culturally relevant survey that could be tailored for use with other immigrant restaurant worker populations. The Low Wage Worker Bill of Rights developed and based on study findings has received considerable attention from the board of supervisors, the mass media and other stakeholders, and two local supervisors introduced a wage theft ordinance based on our findings. Based on study findings, the SFDPH also has written letters to CAL/OSHA, the California Division of Labor Standards Enforcement and the Division of Workers' Compensation urging improved emforcement, and also is seeking improved collaboration between the DIR, OSHA and OLSE. Above all, greatly increased attention is being paid to the problems faced by Chinatown restaurant worker, as indicated in the dozens of pages of media coverage and other information on Google and other search engines when "Chinatown restaurant workers" is entered. Indeed, the only action outcome we had hoped to see, and that did appear feasible at this time, involved potentially laying the groundwork for a DPH program to incentivize "good employers." Both the current economic recession, and the disinclination of some good employers to be singled out for recognition, led us to focus on other potential action strategies, leaving this one for potentially revisiting at a later time.

Section 2 Scientific Report

Background

Immigrants accounted for 86% of all newly employed workers hired from 2000 to 2005 and in urban areas, restaurants remain a primary source of employment. In San Francisco's Chinatown, close to a third of workers are employed in this sector. The high rates of injuries and work related illnesses in restaurant workers often are compounded for low-wage Chinese restaurant workers due to language barriers and low educational level. The Chinese Restaurant Worker Project was a three-year pilot project, in the traditions of community-based participatory research (CBPR) and social ecological theory, that placed a strong focus on immigrant worker health to help better understand and address these concerns.

Several early studies provided important background and context for this research. In summer, 2005, CPA and LOHP conducted preliminary research on work-related injuries, work hazards and stress hazards in Chinese restaurants which laid critical groundwork for the proposed study. This initial research included key informant interviews, 2 focus groups with 21 workers, and participation in 9 restaurant inspections. Multiple types and sources of hazards were observed during the latter, including slip, trip and fall hazards, burn hazards, and ventilation and air quality hazards. Central themes of the two focus groups included not being paid minimum wage or overtime pay, "slow pay" or "no pay," a lack of knowledge of worker rights and workers' compensation, fear of retaliation from employers, and job stress resulting from high work demand, lack of job control, and unclear work roles.

Two earlier CBPR studies by LOHP and its partners also laid important groundwork for the proposed research. The San Francisco Hotel Room Cleaners Project included survey research with 258 workers in four large tourist hotels (69.2% response rate) and a core group of 25 hotel room cleaners which was involved in each phase of the project, from research design to testifying on a proposed contract based in part of study findings. Modeled on this project, a similar study took place in Las Vegas and included a cross-sectional survey of 941 hotel room cleaners. This study investigated the association of numerous psychosocial, ergonomic and other factors with health indicators (74% response rate). The CBPR methodology developed and refined through these three studies offers valuable lessons and training and recruitment tools effective with low literacy immigrant worker populations and helped inform the proposed study.

Specific aims

The project's specific aims included: (1) developing an effective partnership between community, health department, and academic partners; (2) creating and training a Restaurant Worker Leadership Group (RWLG) which would play a key role throughout the project; (3) conducting a study of the association between physical and psychosocial restaurant conditions and occupational illness and injury in Chinese restaurant workers; (4) providing culturally relevant worker education; (4) widely disseminating project findings and using them to help inform subsequent research and action; and (5) evaluating the project using both conventional and participatory approaches.

Procedures and methodology

To design and conduct this study of the relationships between Chinatown restaurant workplace hazards (e.g., ergonomics, chemical exposures, job stress, discrimination), and worker health and safety (e.g. general physical and mental health, musculoskeletal disorders, work-related injuries, disability), a partnership was created in 2007 that included a community-based organization, the Chinese Progressive Association (CPA); the University of California, Berkeley School of Public Health; UC Berkeley's Labor Occupational Health Program; the University of California San Francisco School of Medicine; and the San Francisco Department of Public Health's Occupational and Environmental Health Section. A nine-member Restaurant Worker Leadership Group (RWLG) facilitated the active participation of workers in the research process with 17 additional workers hired and trained as surveyors for participation in the survey component of the work.

The project included three main research components: (1) Development and administration of a survey of a target of 400 restaurant workers, (2) Design and testing of a restaurant health and safety checklist – an observational instrument for use by county restaurant food safety inspectors and piloted in this project in Chinatown restaurants and (3) A participatory evaluation of the entire study process to explore the effectiveness of the partnership and research process according to CBPR principles, including active and equitable engagement of all partners, co-learning, community capacity building, and creating sustainable change. The former two methods would enable us to to explore the relationship between restaurant characteristics (e.g., restaurant size and type), workplace hazards, worker characteristics and perceptions (e.g., gender, seniority and perceived risk), and health outcomes (occupational illness and injury), while the latter would enable a careful assessment of the partership development, maintenance and functioning over time and its contributions to the overall project.

Survey data methodology Beginning with an earlier instrument developed by Dr. Krause. LOHP staff, and community partners in conjunction with the above mentioned hotel worker surveys, the project Steering Committee, with the active involvement of the RWLG, constructed a survey research instument that would allow us to collect individual-level data through a survey of a target of 400 Chinatown restaurant workers.

As noted above, development of the study's survey instrument was informed by two preliminary focus groups conducted with members of the RWLG, as well as earlier focus groups conducted by interns in the summer of 2005. These qualitative studies underscored the need to examine multiple types and sources of hazards including slip, trip and fall hazards, burn hazards, and ventilation and air quality hazards. Central themes of the focus groups included not being paid minimum wage or overtime pay, "slow pay" or "no pay," a lack of knowledge of worker rights and workers' compensation, fear of retaliation from employers, and job stress resulting from high work demand, lack of job control, and unclear work roles. The earlier hotel and restaurant worker studies in SF and Los Vegas conducted by partnership members also shaped in large part

the survey instrument for the present study. CPA and worker leaders additionally contributed a series of questions related to immigration, family and living conditions, access to social benefits, and civic participation that would provide important information for their work in the community. Finally, their input was critical in improving the cultural sensitivity of the survey and assisting with interpretation. When reviewing the validated scales included in the draft survey, for example, RWLG members noted that "stomachaches," included as a symptom of stress, are also often associated by workers with irregular break schedules, which cause them to go for long periods of time without eating. Additionally, RWLG members were highly amused by the Chinese translation of the idiom, "butterflies in your stomach," which appeared as part of the scale measuring depression and anxiety. Their own first reactions led them to emphasize to academic and health department partners that such a phrase would make little sense to Chinese-speaking survey takers. Experiences such as these provided co-learning opportunities between academic researchers and the RWLG members. They discussed tradeoffs between retaining certain validated scales in their original format to allow for the comparability of findings and adapting the scales to be more culturally and linguistically appropriate. Such discussions also were helpful subsequently in the data interpretation phases of the project (see Publications).

Building on this earlier work, and with the input of Steering Committee members and the RWLG, multiple versions of the new restaurant worker survey were developed, pretested by RWLG members, and cut down substantially based on their feedback. A near final instrument, approved by the IRB, was pretested with 15 workers and final changes made, with the new final version also submitted for approval to our IRB. Once approved, the survey was administered to 433 individuals, following receipt of informed consent. Surveys took approximately 1 hour to complete, and most were conducted orally at a place convenient to the participant. No recruitment or survey administration took place in restaurants themselves.

Following data cleaning and checking, 28 of the 433 surveys were found to contain incomplete or highly contradictory data and were excluded, leaving a final sample of 405. Any written comments on the surveys were translated into English, and numerical results analyzed using the statistical program STATA. Descriptive statistics were calculated for almost all survey questions. Data were stratified by gender and job position for selected items.

Observational checklist (restaurant level data) Our second major data collection method included observer-based restaurant-level data (n=106) during restaurant inspections to explore the relationship between restaurant characteristics (e.g., restaurant size and type), workplace hazards, worker characteristics and perceptions (e.g., gender, seniority and perceived risk), and health outcomes (occupational illness and injury). Under the leadership of the health department partner, but with input from other Steering Committee members and the RWLG, a Resturant Worker Health and Safety Checklist was designed to supplement the health department's routine food safety inspections. This instrument too went through multiple interations, with RWLG members "testing" it through self reflection on conditions in their own restaurants, and a health department partner pilot testing the instrument in 10 restaurants. The RWLG members offered valuable sugestions for improving this instrument as well, for example, not only indicating whether first aid kits were visible, but also whether they were fully stocked, and whether the reequired signage (e.g., concerning the City's minimum wage and OSHA information) was not

simply posted but also posted in Chinese. The final instrument consisted of 13 items (see attached) and took approximately 10-15 minutes to administer.

Because the health department's estimate of the number of Chinatown restaurants was not precise (n=92-131), a preliminary step in this phase of the project involved having RWLG members walk in pairs with maps of the various streets comprising Chinatown and indicating the precise location of currently operating restaurants. Their combined data yielded a more accurate number of 108 restaurants, 106 of which were included in this component of the study.

Although we had originally hoped to have restaurant inspectors pilot test the instrument, DPH staff overload and resource limitations made this impossible, and the instrument was therefore tested by a health department staff member who also was part of our project team, and who accompanied inspectors on their rounds and adminstered the instrument himself in all but two of the Chinatown restaurants.

Data from the checklist were compiled using simple frequencies and presented to workers in bar graphs and pie charts to enable ease of analysis.

Results and discussion by specific aim

1) *Developing an effective partnership* A highly effective partnership was developed between community, health department, and academic partners who met monthly during the first half year of the project, and subsequently each quarter, with a Core Group representing each partner meeting more often and a subcommitttee structure developed to faciliate progress in specific areas. Subcommittees on the survey, the checklist, project evaluation, and publications thus were formed, and reported back to the full partnership as needed to present updates and recommendations.

(2) *Creating and training a Restaurant Worker Leadership Group (RWLG) which would play a key role throughout the project*

Although we initially had hoped to hire and train 15 members of the RWLG who would work 15-20 or more hours per week, the reality of the work and caregiving responsibilities of restaurant workers soon proved this number to be unrealistic. With approval of our IRB, we therefore hired and trained a smaller number of RWLG members (n=9), and also hiring and training a larger group of 17 workers as surveyors tasked with recruiting potential survey participants and helping in the administration of the survey (e.g., providing help with reading for those with limited literacy in Chinese or English). Six Restaurant Worker Leadership Group members participated in eight 2-3 hour weekly trainings initially, and continued to meet weekly with CPA and LOHP staff throughout the course of the project which included follow-up trainings as new aspects of the project (such as data interpretation) arose. Although two of these original members had to leave due to work and family conflicts, an additional new member, plus two of the surveyors, subsequently joined the RWLG and received comparable training for their roles. Both the RWLG members and the surveyors did extremely well in the trainings and in their subsequent work with the project. The RWLG's involvement in and contributions to the project were also of extremely high quality, including rewording survey items to increase

cultural relevance; adding new areas of questioning (e.g., regarding the prevalence of "wage theft" in its various manifestations, and of workers who smoked being allowed to keep their full breaks while non smokers were called in early). As noted below, the observational check list developed also profited from worker involvement, as did the interpretation of findings.

3) Conducting a study of the association between physical and psychosocial restaurant conditions and occupational illness and injury in Chinese restaurant workers A detailed, 103 item survey was developed by the Steering Committee, under the leadership of the UCSF academic partner, with substantial input from other members including the RWLG. RWLG members and surveyors recruited 433 restaurant workers for participation in the study, 405 of whom met all study critieria and comprised the final sample. Key findings from the survey were sobering: 50% of workers reported minimum wage violations, with other forms of "wage theft" reported including withholding of wages, and employers' taking a portion of workers'tips. Forty two percent of workers preported working over 40 hours a week, with half of those working 60+ hours and 40% reporting getting no rest or meal breaks. Close to two thirds (64%) reported receiving no on the job training, and high proportions reported having sustained burns (48%) cuts (40%) and slips or falls (17%) in the past year. High levels of psychosocial stress also were reported, including increasingly demanding work loads (72%), feelings of job insecurity (68%) and being yelled at by their superviors and others in the work place (40%). Only 3% of workers reported having employee paid health care, with the majority (54%) paying for their care out of pocket.

A 13-item observational tool for use by restaurant inspectors was developed under the leadership of the DOH parnter, and also benefited from the input of other partners. Following pre-testing in 10 restaurants and subsequent revisions, the final instrument was piloted by a DOH staff member of the project in all but two of Chinatown's 108 restaurants. The instrument included observations of signage (e.g., re. OSHA and San Francisco's minimum wage) as well as the conidtion of floors (wet or greasy etc.) whether there were blocked exits, proper knife guards and so forth. Several of the items were included and/or changed as a result of feedback from the worker partners, eg., whether required signs were not only posted but posted in Chinese, and whether first aid kids were not simply present but "fully stocked." Administration of the checklist tool took approximately 15-20 minutes, and the tool was placed on the DOH web site for use by other health departments (http://www.sfphes.org/publications/Restaurant_Health_Safety_Checklist.pdf).

We are completing multi-level analysis on the associations between occupational illness and injury in Chinese restaurant workers and the social and environmental conditions in which they work. Preliminary findings, however, suggest good correspondence between many of the findings from the survey and check list.

(4) Providing culturally relevant worker education Culturally relevant worker education took place throughout the training of the 24 restaurant workers involved with the project (e.g., through discussions of worker health and safety issues, tips on how to protect oneself and ones colleagues from work related injuries, and imformation on work rights and supports for assuring that they are honored). Worker friendly educational materials, including a "frequently asked questions"

handout and the 27 page booklet, "Check, please!" also were developed and disseminated in Chinese, English and Spanish in print form and online (www.cpash.org), and information also provided through the ethnic language press. Worker teas and other educational events also were held for workers in the community. To date, no educational events for employers have taken place.

(5) *Widely disseminating project findings and using them to help inform subsequent research and action* An initial article on partnership formation, study design, and initial findings was published in a special issue of the American Journal of Industrial Medicine in 2010 and made available on line the preceding year. Another article is under final review for Public Health Reports, which reaches all health departments and many other venues. The check list observational tool is avialable on the web site of the SF DPH. Finally, the CPA led report, Check, Please! Has been widely disseminated in print form in both Chinese and English and on the CPA web site (www.cpasf.org), and is also available in Spanish. A detailed 75 page report summarizing all survey findings was compiled by two academic researchers (Salvatore and Krause) and will be made available on several web sites. Close to a dozen talks on the project and its research outcomes have been presented at venues including APHA (n=5), major research universities, and both Asian Pacific Islander and and occupational health forums. Eight additional publications are in progress by various academic and community partners, and several mass media articles have appeared in the mainstream and ethnic media, including a lengthy article in the SF Chronicle (Sept. 18, 2001, from page of Business Section) and several stories on local news stations.

(6) Evaluating the project using both conventional and participatory approaches
Participatory evaluation of the project was undertaken to explore the effectiveness of the partnership and research process according to CBPR principles, including active and equitable engagement of all partners, co-learning, community capacity building, and creating sustainable change [Israel, et al. 2005]. The evaluation component of this study may well have set a new bar for both thoroughness and fidelity to principles of CBPR in the extent to which full partnership input was included throughout the process. Led by a UC Berkeley doctoral student, Charlotte Chang, a highly skilled evaluator, plans for the evaluation were developed in close consultation with a subcommittee of partners representing each of the organizations involved. Early group interviews conducted with organizational partner (community, health department, and university) served the dual purpose of project goal-setting and obtaining some baseline indication of where the partership was in terms of knowledge, trust levels etc.. The evaluation contributed substantially to the building of a strong sense of community within the partnership, provided opportunities to address challenges to participation, and revealed ways in which the partnership both reflected CBPR principles and adapted them to their unique context. Numerous exercises (e.g., an interactive timeline and small group activities designed to elicit both excitement and concerns about working with diverse partners) were employed in the data gathering process. Schulz et al's guide for assessing partnership progress also was utilized in a closed-ended questionnaire, and individual interviews with each partner were conducted at the beginning and midpoint, in addition to group assessments of various project events and components. A final partnership meeting allowed for reflection on progress, challenges, and changes that had occurred over the three-year process of collaboration.

Although not originally intended, creation of an evalulation subcommittee of the steering committee one month after the project started further helped engage a greater number of team members with the evaluator in the planning and assessment of the evaluation component of the project. A dissertation paper based on this aspect of the work was successful completed and is now being prepared for publication (see Publications) and several of the innovative activities developed have already been shared with colleagues in other CBPR partnerships.

Discussion

This study well demonstrated that immigrant, largely monolingual restaurant workers themselves can serve as key partners; their high level partcipation resulted in the collection of substantial, high quality data on both the individual and restaurant levels, that make this, we believe, a landmark study.

The results of the research also provide data that supports what OSHA data and much smaller scale studies have suggested, namely high rates of both physical injury and illness and highly stressful work environments which can further compromise mental and social health and well being. Key findings from the survey included that 50% of workers reported minimum wage violations, with other forms of "wage theft" (e.g., withholding of wages, and employers' taking a portion of workers'tips). Forty two percent of workers reported working over 40 hours a week, with half of those working 60+ hours and 40% reporting getting no rest or meal breaks. Close to two thirds (64%) reported receiving no on the job training, and high proportions reported having sustained burns (48%) cuts (40%) and slips or falls (17%) in the past year. High levels of psychosocial stress also were reported, including increasingly demanding work loads (72%), feelings of job insecurity (68%) and being yelled at by their superviors and others in the work place (40%). Only 3% of workers reported having employee paid health care, with the majority (54%) paying for their care out of pocket.

Results of the pilot study of our oservational tool in 106 restaurants were equally troubling: The majority of kitchens had overcrowded range tops (70%) and cooks working in overcrowded conditions, sometimes in kitchens with blocked emergency exits. 62% of establishments visited had wet and greasy floors, creating hazards for slips and falls while walking through the kitchen area, yet less than half of all establishments (48%) had mats specifically designed to prevent slips and falls. 87% of restaurants surveyed lacked proper storage of knives on the counters or walls, 37% lacked adequate ventilation, and 28% lacked adequate lighting. Although 70% of restaurants had band-aids available, 82% of restaurants did not have fully stocked first aid kits. 18 of the 22 establishments (81%) that slice, grind or process food did not have any visible guards for their slicing, grinder and food processing machines.

The results of the study are being used in multiple ways to lay the basis for change. In addition to publications in academic journals and presentations at professional meetings, findings from the survey have been compiled by CPA and its partners in a colorful 27 page booklet,"Check Please!" which was released at a press event attended by 170 people, including 4 of the 11 City

Supervisors and close to 20 representatives of the mainstream and ethnic media. Key findings, along with recommendations for change, received substantial media coverage on the nightly news, and in the city's major newspaper and the ethnic press. The booklet itself was also widely disseminated in hard copy and on line (www.cpasf.org).

The checklist instrument findings also have been widely shared in a report on the SF DH website, and in an article under final review for the wide disttribution journal, Public Health Reports. The final checklist instrument also is available on the Department's website (http://www.sfphes.org/publications/Restaurant_Health_Safety_Checklist.pdf) so that other health departments may adapt or replicate this instrument in their locales.

Recommendations based on the study were codified in a "low wage worker bill of rights", debuted at the project's press event and published in "Check, Please!" The SF DPH also has written letters to CAL/OSHA and the California Division of Labor Standards Enforcement and Division of Workers' Compensation citing study findings and urging improved emforcement, and also is seeking improved collaboration between the DIR, OSHA and OLSE. Above all, greatly increased attention is being paid to the problems faced by Chinatown restaurant worker, as indicated in the dozens of pages of media coverage and other information on Google and other search engines when "Chinatown restaurant workers" is entered.

The evaluation component of the study also was an important contribution as it constitutes an extremely thorough and we believe highly effective example of the utility of participatory evaluation for both measuring partnership formation and effective functioning, but also assisting in partnership development through its adherence to and adaptation of CBPR principles.

As the population of low-wage immigrant workers in the restaurant sector continues to climb, and as restaurants remain among their largest employers, the utility of an approach to research that can combine the insights of workers with those of occupational health specialists and other professionals deserves much more careful attention. We hope that this study will provide the foundation for a continuing collaborative effort between community, health department and university partners to improve working conditions and health and safety for this growing immigrant worker population.

Publications list

Journal articles

*Gaydos, M, Bhatia, R, Morales, A, Lee, PT, Liu, SS, Chang, C, Salvatore, A, Krause, N and Minkler, M. Promoting Health Equity and Safety in San Francisco's Chinatown Restaurants: Findings and Lessons Learned from a Pilot Observational Survey. Under final review, Public Health Reports.

Minkler M, Lee, PT, Tom, QA, Chang, C, Morales, A et al., (2010) Using community-based participatory research to design and initiate a study on immigrant worker health and safety in San Francisco's Chinatown restaurants. American Jour. of industrial Medicine. 53(4): 361-371.

Books and book chapters

Two book chapters are in press, each of which includes a detailed case study on the Chinatown study:

Minkler, M and Salvatore, A. (in press) Participatory approaches for study design and analysis. In R. Brownson, G Colditz and E. Proctor (eds.) Dissemination and Implementation Research in Health: Translating Science to Practice Oxford University Press

Minker, M and Chang, C. (in press) Participatory research and action. In Ichiro, K. (Ed.) Oxford Handbook of Public Health Practice (3rd Edition). Oxford University Press.

Proceedings and presentations

Alicia L. Salvatore, et al., Cooking Up Occupational Injustice: Poor Wages and Working Conditions among San Francisco's Chinatown Restaurant Workers. Presentation at the Annual meeting of the American Public Health Association, Denver , Co. Nov 9, 2010.

Pam Tau Lee, et al., Research to action: Chinese immigrant restuarnt workers apply popular education and community based research to environmental justice. Presentation at the Annual meeting of the American Public Health Association, Denver , Co. Nov 10, 2010.

Chang, C., Lee, PT, Tom, A, Liu, S, Gaydos, M, Salvatore, A, Baker, R., Krause, N., Bhatia, R., and Minkler, M. Conducting CBPR in a Chinese Immigrant Worker Community – Benefits,Challenges, and Adaptations - NYU Asian American Health Conference,October 2009

M,Minkler et al., CBPR with immigrant workers: An ecological study of restaurant worker health and safety in San Francisco's Chinatown District. Presentation at TraCS Institute Symposium, UNC, Chapel Hill, March 19, 2010

M. Minkler et al., Research with immigrant worker populations: Restaurant workers in San Francisco Chinatown. COEH Conference on Immigrant Workers and Occupational Injury and Illness. Oakland, CA April 18, 2008.

C Chang and M Minkler et al, "Developing a CBPR partnership with Chinatown restaurant workers: Lessons from the beginning of the story" Presentation to the annual meeting of the American Public Health Association, October, 2007

Chang, C. The Chinatown Restaurant Worker Health & Safety Project: A Community-Based Participatory Research Collaboration, New Student Visit Day,UC Berkeley, CA 2009

Chang C. The Chinatown Restaurant Worker Health & Safety Project Partnership Evaluation (poster presentation)

Dissertation/Thesis

Chang, C. [2010] Evaluation and Adaptations of a Community-Based Participatory Research Partnership in San Francisco's Chinatown. DrPH. Dissertation, University of California, Berkeley.

Other

Salvatore, A and Krause, N (2010) Health and working conditions of restaurant workers in San Francisoc's Chinatown: report of preliminary study findings (March, 2010, unplubished). UC Berkeley and UC San Francisco

Program Director/Principal Investigator (Last, First, Middle):

Inclusion Enrollment Report

This report format should NOT be used for data collection from study participants.

Study Title: Worker Health and Safety in Chinatown Restaurants: A CPBR Study

Total Enrollment: 405 **Protocol Number:** 2010-05-1438

Grant Number: 5R21OH009081-02

PART A. TOTAL ENROLLMENT REPORT: Number of Subjects Enrolled to Date (Cumulative) by Ethnicity and Race

Ethnic Category	Females	Males	Sex/Gender Unknown or Not Reported	Total
Hispanic or Latino				**
Not Hispanic or Latino	279	126		405
Unknown (individuals not reporting ethnicity)				
Ethnic Category: Total of All Subjects*	279	126		405 *
Racial Categories				
American Indian/Alaska Native				
Asian	279	126		405
Native Hawaiian or Other Pacific Islander				
Black or African American				
White				
More Than One Race				
Unknown or Not Reported				
Racial Categories: Total of All Subjects*	279	126		405 *

PART B. HISPANIC ENROLLMENT REPORT: Number of Hispanics or Latinos Enrolled to Date (Cumulative)

Racial Categories	Females	Males	Sex/Gender Unknown or Not Reported	Total
American Indian or Alaska Native				
Asian				
Native Hawaiian or Other Pacific Islander				
Black or African American				
White				
More Than One Race				
Unknown or Not Reported				
Racial Categories: Total of Hispanics or Latinos**				**

* These totals must agree.
** These totals must agree.

Inclusion of children (n/a)

Materials available for other investigators

- Observational tool: restaurant health and safety checklist available on the SFDPH web site for use by other health departments (http://www.sfphes.org/publications/Restaurant_Health_Safety_Checklist.pdf).

- Salvatore, A and Krause, N (2010) Health and working conditions of restaurant workers in San Francisoc's Chinatown: report of preliminary study findings (March, 2010, unplubished). UC Berkeley and UC San Francisco

- *CPA, Check , Please! Health and working conditions in San Francisco's Chinatown restaurants*. Available at www.cpasf.org Summary of study findings in a form useful for work with media or community (lay) populations (Sept. 2010**)**

- See also articles and book chapters above

B) Final financial status report forms Please see attached

FINANCIAL STATUS REPORT

0

1. FEDERAL AGENCY AND ORGANIZATION ELEMENT TO WHICH REPORT IS SUBMITTED:	2. FEDERAL GRANT OR OTHER IDENTIFYING NUMBER
NIH	R01OH009081
3. RECIPIENT ORGANIZATION (Name and complete address, including zip code) THE REGENTS OF THE UNIVERSITY OF CALIFORNIA Extramural Fund Accounting 2195 Hearst Ave., Rm 130 - MC 1103 Berkeley, California 94720-1103 PHS#451470	**4. EMPLOYER IDENTIFICATION NUMBER** 1946002123A1 **5. RECIPIENT ACCOUNT NUMBER OR I.D. NUMBER** 11825

8. PROJECT/GRANT PERIOD	6. FINAL REPORT :	7.BASIS:
FROM: 9/1/2007 TO: 8/31/2010	YES xx NO	xx CASH ACCRUAL
	9. PERIOD COVERED BY THIS REPORT FROM: 9/1/2007 TO: 8/31/2010	

10. STATUS OF FUNDS

A. NET OUTLAYS PREVIOUSLY REPORTED	$ 0.00
B. TOTAL OUTLAYS THIS REPORT PERIOD	367,690.88
C. LESS: PROGRAM INCOME CREDITS	0.00
D. NET OUTLAYS THIS REPORT PERIOD (Line B minus line C)	367,690.88
E. NET OUTLAYS TO DATE (Line A plus line d)	367,690.88
F. LESS: NON-FEDERAL SHARE OF OUTLAYS	0.00
G. TOTAL FEDERAL SHARE OF OUTLAYS (Line E minus line F)	367,690.88
H. TOTAL UNLIQUIDATED OBLIGATIONS	0.00
I. LESS: NON-FEDERAL SHARE OF UNLIQUIDATED OBLIGATIONS SHOWN ON LINE H	0.00
J. FEDERAL SHARE OF UNLIQUIDATED OBLIGATIONS (Line H minus line I)	0.00
K. TOTAL FEDERAL SHARE OF OUTLAYS AND UNLIQUIDATED OBLIGATIONS (LINE G PLUS LINE J)	367,690.88
L. TOTAL CUMULATIVE AMOUNT OF FEDERAL FUNDS AUTHORIZED	367,777.00
M. UNOBLIGATED BALANCE OF FEDERAL FUNDS (Line L minus line K)	86.12

11. INDIRECT EXPENSE

A. TYPE OF RATE (Type "X" in appropriate box)
PROVISIONAL X PREDETERMINED FINAL FIXED

B. RATE	C. BASE	D. TOTAL AMOUNT	E. FEDERAL SHARE
52.00%	145,568.73	75,695.74	75,695.74
	145,568.73	75,695.74	75,695.74

11. REMARKS:

13. CERTIFICATE: I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays and unliquidated obligations are for the purposes set forth in the award documents.	SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	DATE REPORT SUBMITTED
	Julio Rodriguez	11/5/2010
	TYPED OR PRINTED NAME AND TITLE Julio Rodriguez Supervisor	TELEPHONE AND FAX 510-642-2074 510-643-8997

Standard Form 269

Form Approved Through 06/30/2012
OMB No. 0925-0001

Department of Health and Human Services **Final Invention Statement and Certification** *(For Grant or Award)*	DHHS Grant or Award No. 5R21OH009081-02

A. We hereby certify that, to the best of our knowledge and belief, all inventions are listed below which were conceived and/or first actually reduced to practice during the course of work under the above-referenced DHHS grant or award for the period

9/1/2007 *original effective date* through 8/31/2010 *date of termination*.

B. Inventions (Note: If no inventions have been made under the grant or award, insert the word *"NONE"* under Title below.)

NAME OF INVENTOR	TITLE OF INVENTION	DATE REPORTED TO DHHS
	None	
(Use continuation sheet if necessary)		

C. Signature — This block ***must*** be signed by an official authorized to sign on behalf of the institution.

Title	Name and Mailing Address of Institution
Associate Director	The Regents of the University of California c/o Sponsored Projects Office 2150 Shattuck Avenue, Suite 300 University of California, Berkeley, CA 94704-5940
Typed Name Patricia Gates	
Signature Mary Baugh acting for Patricia A. Gates	Date 11/15/10

HHS 568 (Rev. 06/09)