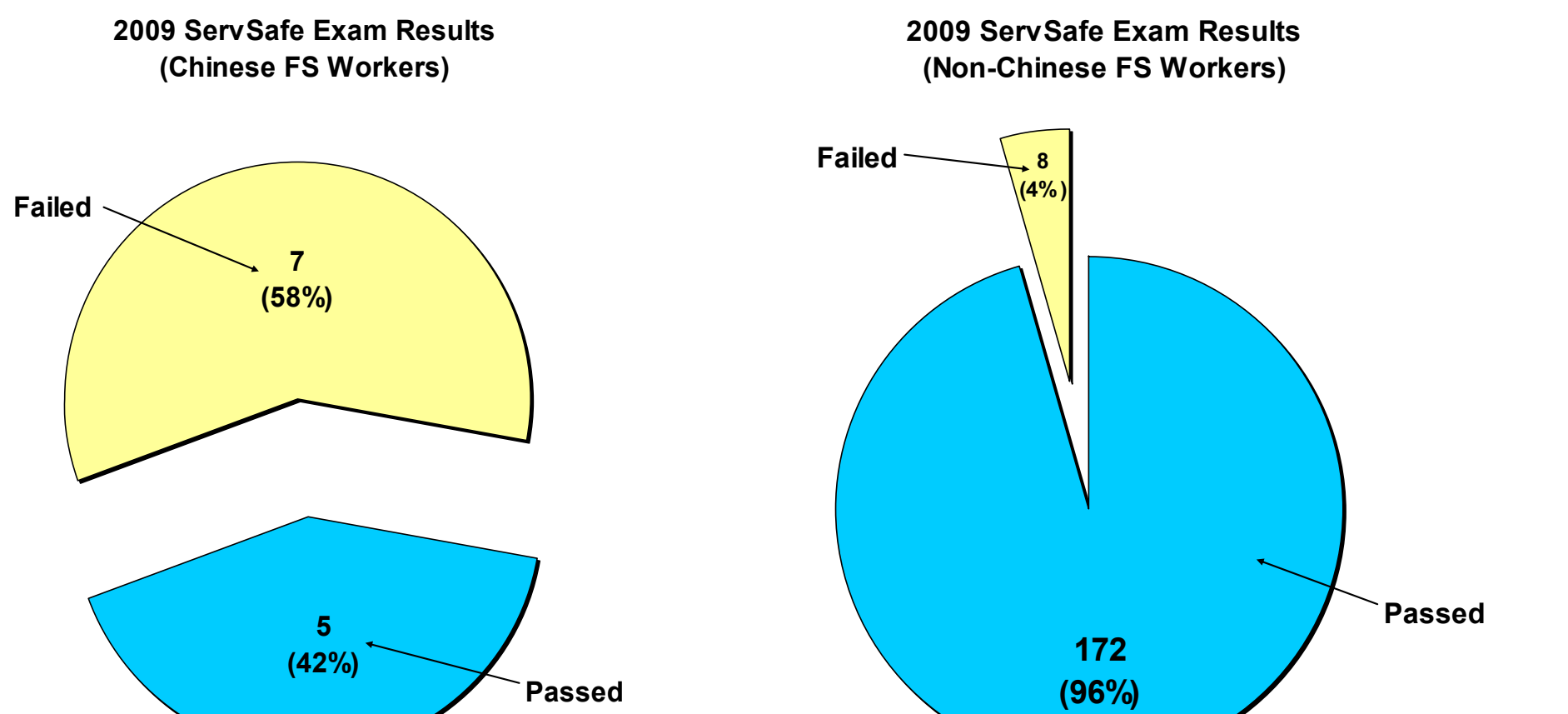


Serving a population of 86,000



Identify an Opportunity and Plan for Improvement

The Michigan Department of Agriculture (MDA) mandated that by June 30, 2009, at least one person in authority at a licensed food service establishment be certified by a nationally accredited food safety organization. Grand Traverse County Health Department (GTCHD) offered certification through the National Restaurant Association's ServSafe® program. Most restaurants became certified through ServSafe with a 94% passing rate. However, only five of the twelve workers from Chinese restaurants who attended NARA ServSafe courses in 2009 actually passed to become certified. This failure rate is a concern for the GTCHD and the National Restaurant Association's ServSafe Student Program. The failure rate among Chinese food service workers underscores a problem that has always existed within the GTCHD Food Safety Sanitation Program: How to communicate with owners/operators/workers from Chinese Restaurants who do not speak or understand English well?



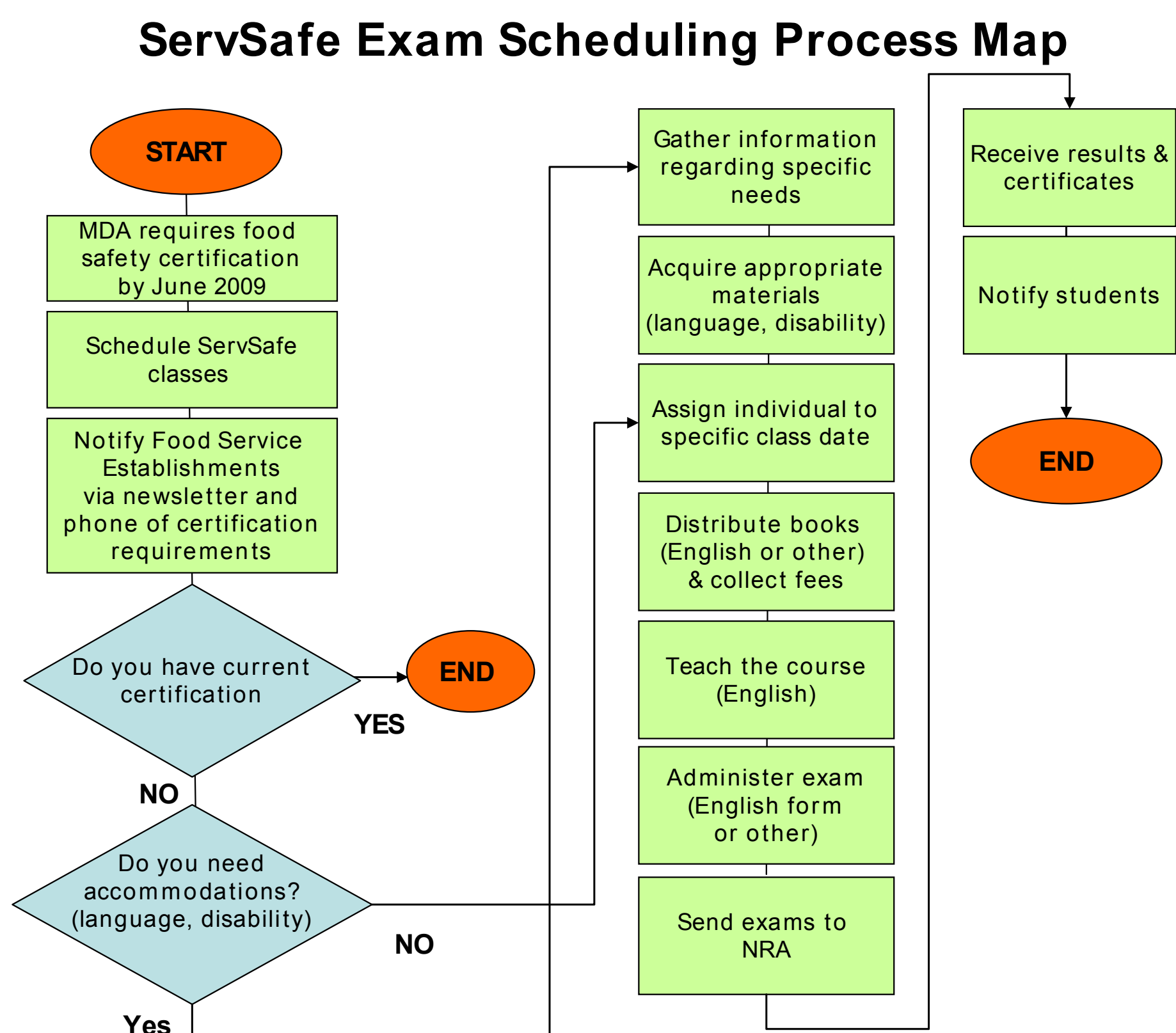
The GTCHD Quality Improvement Team was assembled to assess a diverse group of individuals within the organization. Because the project involved the Environmental Health Division food safety program, the EH Director was a logical choice for the team. In addition to managing Environmental Health, the EH Director also is the ServSafe Instructor for GTCHD. In order to facilitate the goal of spreading QI within all programs of the Health Department, the Personal Health Administrator was selected. The PH Administrator is located in the main Health Department building and manages several programs and staff. The GTCHD Community Outreach Coordinator has experience and expertise in communication, marketing, and graphic design. The team leader is a former EH Director. The team leader is an Environmental Sanitation unit with varied experience. The team leader has coordinated accreditation review of Powers and Duties of the Health Department, coordinated logistics for H1N1 vaccination, and has conducted research and developed programs and policies. The team leader's innovative style, coordination skills, and statistical skills were considered key qualities for the management of the QI project.

Grand Traverse County Health Department MLC-3 Quality Improvement Work Plan May 2010 – February 2011			
Month	Task	Month	Task
May	<ul style="list-style-type: none">• MLC-3 Learning Session• Finalize Team• Set-up team meeting schedule (Wednesdays 2 to 4 p.m.)• Refine Aim Statement• Work on QI Tools (Process Map, Fishbone Diagram)• Work on Team Charter	October	<ul style="list-style-type: none">• Stage 3 "Study" of PSDA• MLC-3 Tele-conference• Team Meetings
June	<ul style="list-style-type: none">• Team meetings• MLC-3 site visit• Continue working on Stage 3 of Plan Stage	Nov.	<ul style="list-style-type: none">• Stage 4 "Act" of PSDA• MLC-3 mini-collaborative• Team Meetings
July	<ul style="list-style-type: none">• Team Meetings• Stage 4 and 5 of Plan Stage• MLC-3 Webinar• MLC-3 Mini-collaborative teleconference	Dec.	<ul style="list-style-type: none">• Stage 4 "Act" of PSDA• Story Board• Team Meetings
August	<ul style="list-style-type: none">• MLC-3 Webinar• Team Meetings• MLC-Tele-conference• Stage 2 "Do" of PSDA	January	<ul style="list-style-type: none">• Stage 4 "Act" of PSDA• MLC-3 Teleconference• Story Board• Team Meetings• Final Report
Sept.	<ul style="list-style-type: none">• Team meetings• Stage 3 "Study" of PSDA• MLC-3 Webinar	February	<ul style="list-style-type: none">• Stage 4 "Act" of PSDA• Story Board• Final Report

By January 15, 2011, food service workers from Chinese restaurants will demonstrate a 20% increase in the ServSafe exam passing rate after receiving culturally appropriate training and educational materials provided by GTCHD Environmental Health program staff.

GTCHD created a process map to outline the current process for scheduling students for a ServSafe course and exam. Using the process map, GTCHD QI Team identified the following problem areas:

- There is no standard policy for identifying specific needs regarding language or disability
- Even though students may request a non-English book and exam, the course is only offered in English
- No translator available for Chinese food service workers to ask ServSafe instructor questions from text book
- No follow-up survey for students to measure course and exam quality
- Little follow-up for students who failed exam to determine root cause (no follow-up for Chinese students)



GTCHD employed a fishbone (cause and effect) diagram to determine possible causes of the low ServSafe exam passing rate among food service workers from Chinese restaurants. The most significant factor was identified as communication problems between GTCHD staff and Chinese restaurant staff due to language barriers. During this exercise, it was apparent that many assumptions were made regarding issues within the Chinese restaurants. GTCHD decided that a focus group of restaurant owners/managers would be helpful to determine the perspective from our clients viewpoint.

HD STAFF

- Lack of staff follow-up
- Lack of statistical analysis of data
- Lack of understanding of different cultures
- No process to identify needs
- Staff not trained to identify needs
- No resources for training

RESOURCES

- Non-English hand out materials are outdated
- Can't identify which questions missed on exam
- Don't collect specific data regarding tests
- Low ServSafe passing rate among food service workers from Chinese Restaurants
- No process to follow up on students who failed exam
- No standard process to analyze data
- No process to identify needs
- Staff not trained to identify needs
- No resource for training
- No translators
- No resources for

CLIENTS/WORKERS

- Workers don't disclose needs
- High staff turnover
- Multiple cultures within same facility
- Perceive HD as tied with Immigration
- Cultural differences not understood
- Difficulty communicating with HD staff
- Don't know who to contact

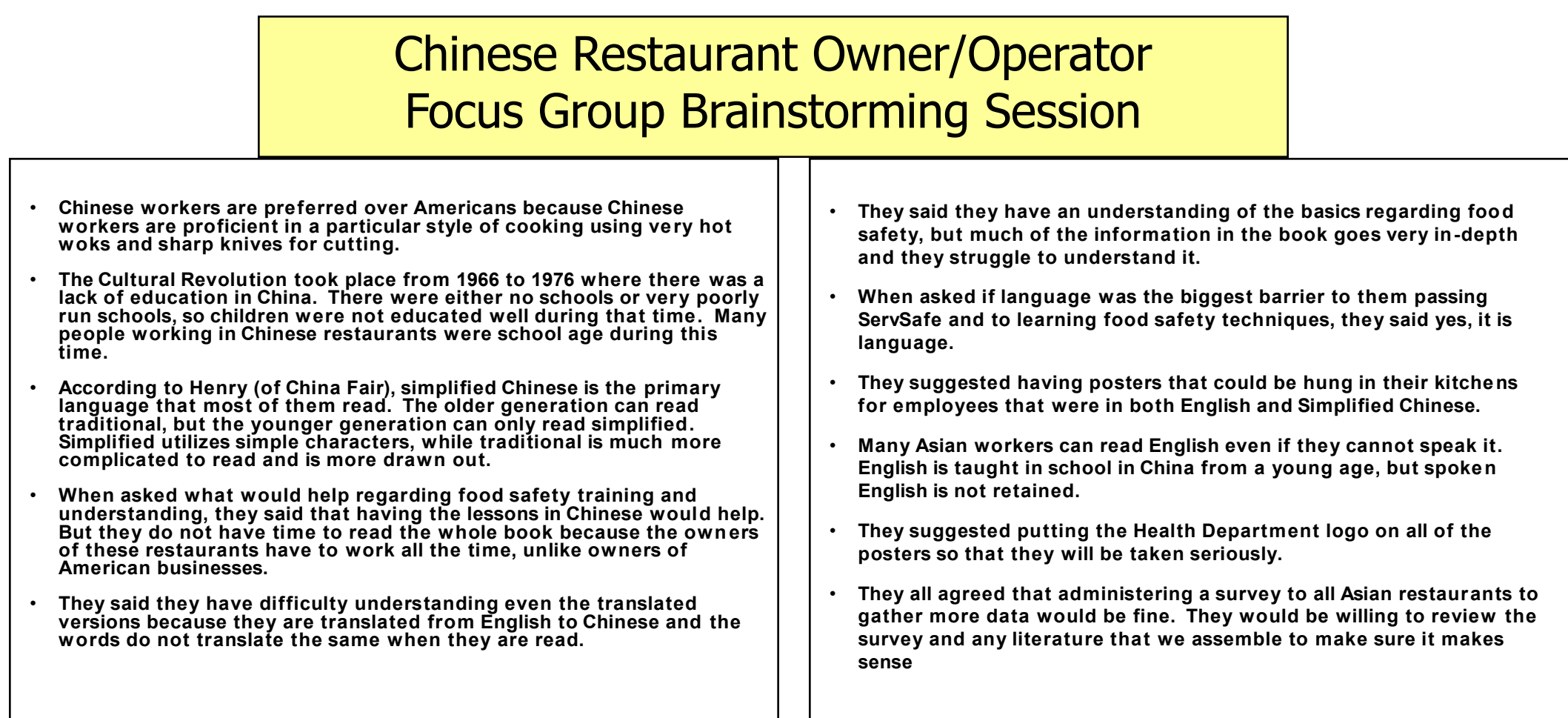
METHODS

- Communication limited to inspections
- Communication limited to English
- Class only taught in English

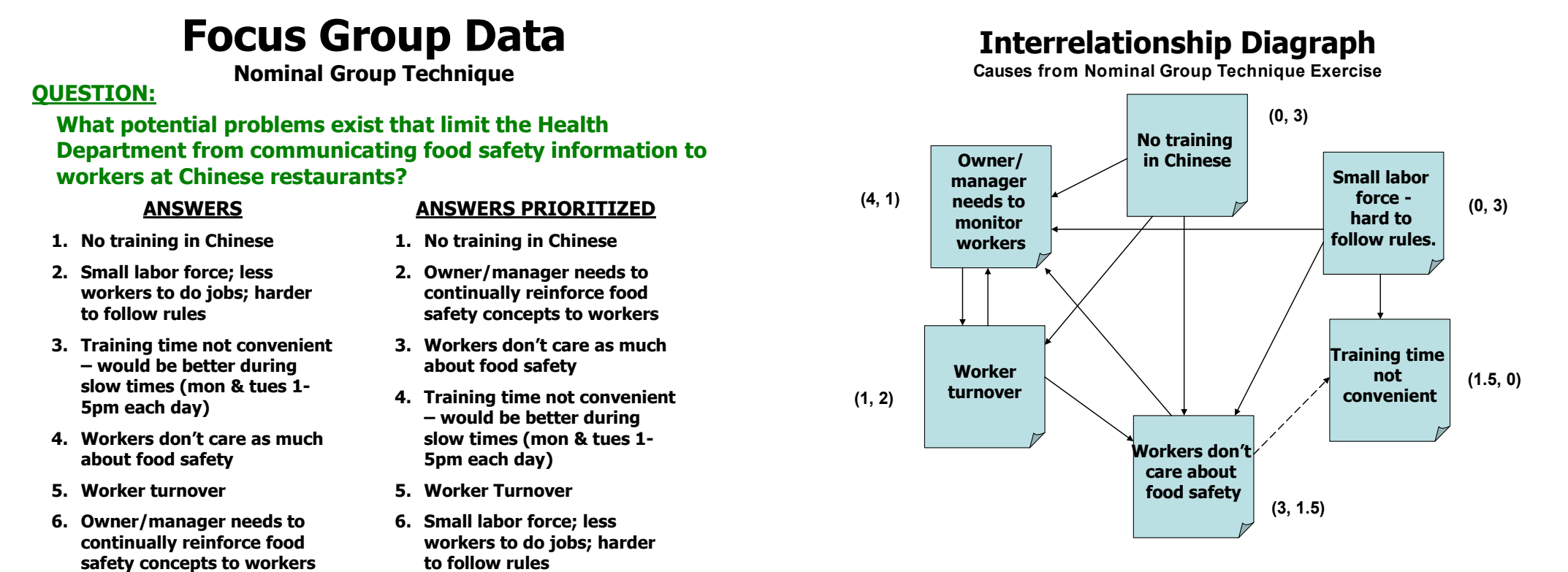
Tom Buss - Environmental Health Manager

Lisa Peacock - Personal Health Administrator

The GTCHD Quality Improvement Team held a focus group meeting for owners/operators of Chinese restaurants on June 22, 2010. The meeting began with a welcome and introduction period. Once the group was comfortable, the QI Team presented the current status of food safety training for Chinese restaurants including the low ServSafe passing rate among Chinese students. One of the restaurant owners speaks English fluently and was able to act as interpreter between the QI Team and the other owners/managers. There was much discussion regarding the demographics of Chinese food service workers and ways to communicate.



The QI Team presented the focus group with an exercise known as the Nominal Group Technique (NGT) which is used to prioritize and generate a course of action. The NGT exercise started with posing a question pertaining to problems that exist regarding food safety training for Chinese food service workers. Each focus group member was polled to answer the question and then the answers were listed on a large dry erase board. Each group member was asked to prioritize each of the answers using a ranking system. The figure below illustrates the results of the NGT exercise.



In order to further identify the root cause an Interrelationship Diagram was employed to study the cause and effect relationship between prioritized answers from the NGT exercise. The answers from the NGT exercise were arranged in a circle and then a line was drawn between answers if a relationship exists. Next, an arrow was drawn on the line pointed to the item that is most affected by the other. The number of arrows going in and the number of arrows stemming from each cause were counted. The factor or cause with the most outgoing arrows is ranked the highest. In this case, the factor of "No Training in Chinese" was ranked highest with 10 outgoing arrows. The factor of "No Training in English" was ranked the low score with 1 passing rate. "Small Labor Force," was also identified as a cause that has significant influence on the other factors. However, the problem of a small labor force is not a factor that can be controlled by GTCHD and therefore the QJ Team focused on the issue of "No Training in Chinese."

ROOT CAUSES

HD STAFF

- Lack of staff follow-up
- Staff only speaks English
- Inadequate inspections by former sanitarian
- Inspections of Chinese restaurants are difficult
- Workers don't care as much about food safety
- High staff turnover
- Need training in Chinese
- No time to read book
- Book & text too complicated
- Chinese translation hard to understand

RESOURCES

- Lack of statistical analysis of data
- Lack of understanding of different cultures
- No process to identify needs
- Staff not trained to identify needs
- No resources for training
- No funding for translators
- Problems with data accuracy
- Non-English hand out materials are outdated
- Can't identify which questions missed on exam
- Don't collect specific data regarding tests
- Low ServSafe passing rate among food service workers from Chinese restaurants

CLIENTS

- Small labor force
- Owners must work every day
- Harder to follow rules
- Owner/manager must monitor workers at all times
- Training time not convenient

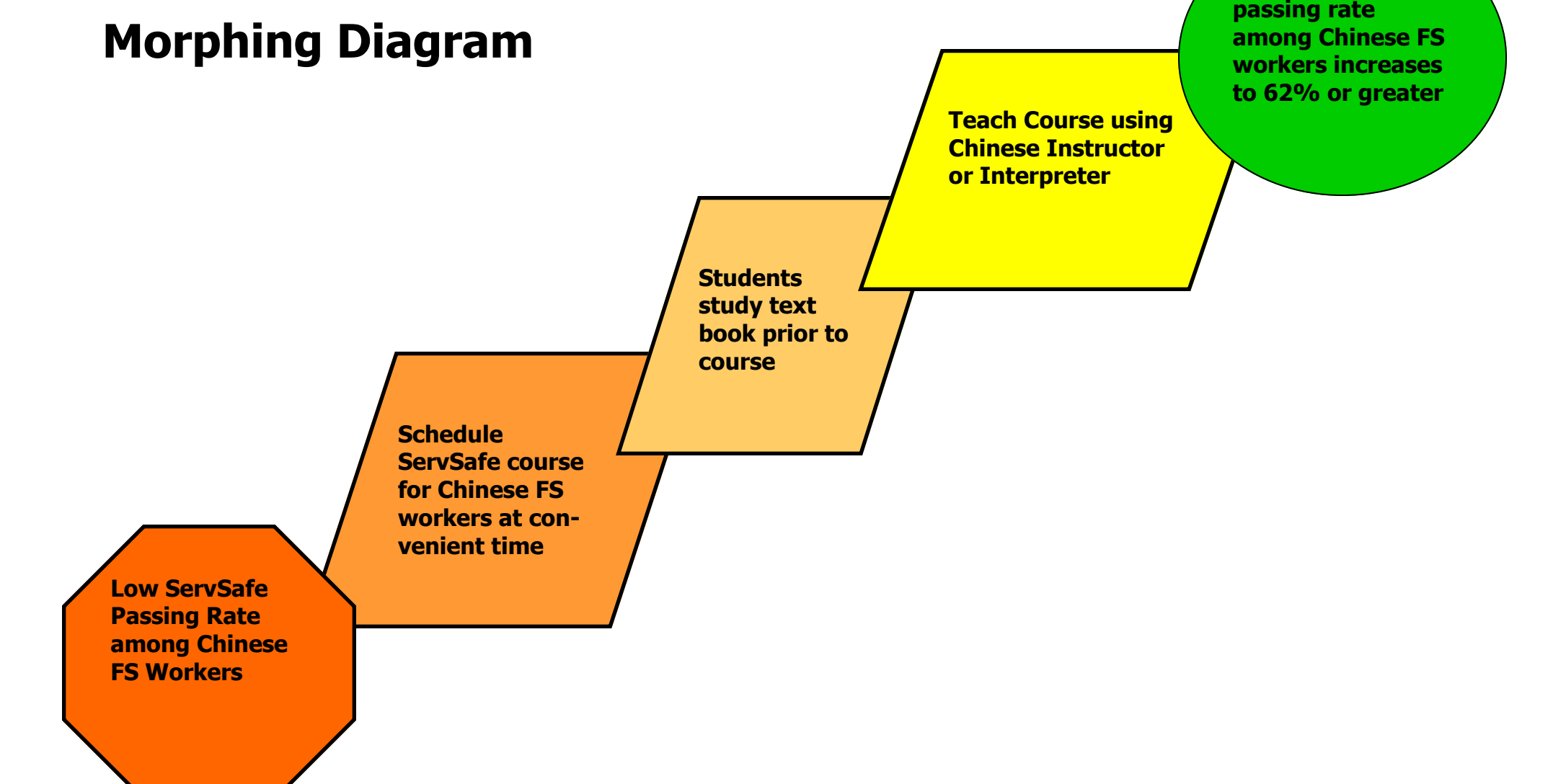
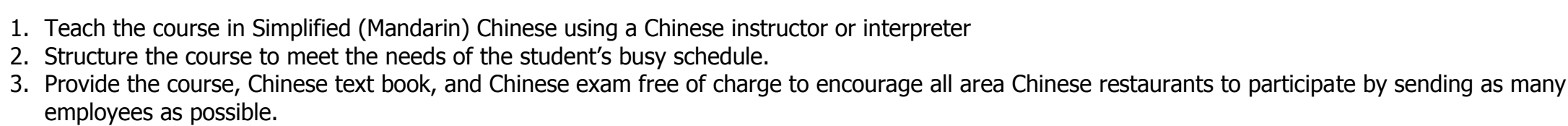
METHODS

- No process to follow up on students who failed exam
- Communication limited to inspections
- Communication limited to English
- No method to analyze data
- No process to identify needs
- Staff not trained to identify needs
- No resources for training
- Class only taught in English
- No translators
- No resources for translators

The original fishbone diagram was redone after the focus group exercise to reflect potential causes as determined by our clients, the owners/operators of Chinese restaurants in Grand Traverse County.

By January 15, 2011, food service workers from Chinese restaurants will demonstrate a 20% increase in the ServSafe exam passing rate.

GTCHD QI Team identified potential solutions based on root cause analyses and focus group data. The QI tools and focus group clearly identified the language barrier as the root cause for the low ServSafe passing rate among Chinese food service workers. One potential solution was evident in order to meet the requirements of the AIM statement: Structure a ServSafe course specifically for Chinese food service workers. The following criteria would be key components of the improvement:



GTCHD QI Team developed an improvement theory to increase food safety knowledge among Chinese FS workers. The outcome of the improvement theory is described as follows:

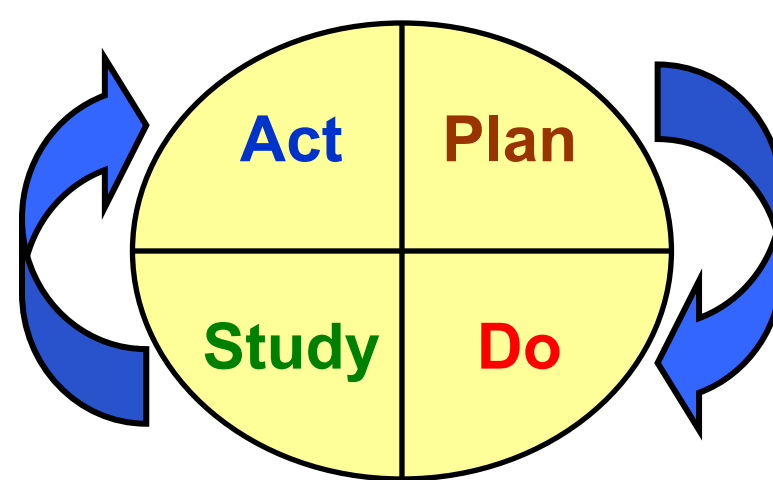
- If GTCHD provides a ServSafe course which is taught using the Simplified Chinese language by means of a Chinese instructor/interpreter, Chinese text books, and Chinese exam forms, then Chinese FS workers will demonstrate a 20% increase in the ServSafe exam passing rate.
- If GTCHD schedules the Chinese ServSafe course on a Monday and Tuesday which are slow days for Chinese restaurants, then the number of potential students will be maximized.
- If GTCHD offers the Chinese ServSafe course free of charge, then Chinese restaurant owners will be more likely to send kitchen staff to the training.

Test the Theory for Improvement

GTCHD planned a Chinese ServSafe course and exam.

- GTCHD QJ Team searched for a Chinese SenSafe instructor. Availability of a certified SenSafe instructor who teaches the course in Chinese was minimal. Also, the instructor that was available charged a significant amount of money for their services. As recommended by the QJ Team's mentor, GTCHD contacted Jean Chang, Epidemiologist at the Public Health Muskegon County to inquire about interpretation services. Jean Chang speaks Chinese and English fluently and recently helped teach a Chinese SenSafe class for Muskegon County Chinese restaurants. Jean agreed to assist GTCHD with a Chinese SenSafe course.
- GTCHD collaborated with Dorothy Wicks, Genesee County Health Department Environmental Health Supervisor, who provided GTCHD with a professionally produced DVD of the Chinese SenSafe course hosted by Genesee County Health Department and taught by Sheree Lin, PhD, a certified SenSafe instructor.

Improving Food Safety Knowledge for All



- GTCHD Q1 Team scheduled a special two-day Chinese SafeServe Course for Monday, August 30th and Tuesday, August 31st, 2010. The two-day course structure was based on successful Chinese SafeServe courses offered by Genesee County Health Department and Public Health – Muskegon County, Also, Monday and Tuesday were selected based on the recommendation of the Chinese Restaurant Focus Group that those days were the best days to select training due to low foot traffic volume at the time.
- GTCHD developed a flyer advertising the Chinese SafeServe Course and had it translated into Simplified Chinese (Mandarin). The flyer was hand delivered to all the Chinese restaurants in Grand Traverse County six weeks prior to the course. Also, the flyer was sent to all neighboring Health Departments and a message regarding the class was sent to the Environmental Health Directors email listserve.
- Despite the advertisement and follow-up visits and phone calls to area Chinese restaurants, only eight students signed up for the class. The SafeServe text book was distributed to the students 3 weeks prior to the course.
- The Chinese SafeServe presentation and the Chinese SafeServe video presentation and using a cousin and the novel with Jean Chang. Also, GTCHD SafeServe Instructor, Tom Buss, interacted with the students using Jean Chang as the interpreter. Most of the students were engaged in the class discussions and asked questions tailored toward individual experiences and situations.

Course Results:

- Three students out of eight passed the Chinese ServSafe exam which yielded a 37.5% passing rate.
- The course results did not meet the GTCHD QI Team AIM Statement requirement of a 62% passing rate or higher

Use Data to Study Results of the Test

Exam Scores from Chinese ServSafe Course

Chinese ServSafe Student	ServSafe Exam Score
1	71
2	76
3	76
4	69
5	67
6	73
7	77
8	62

Passing Score = 75

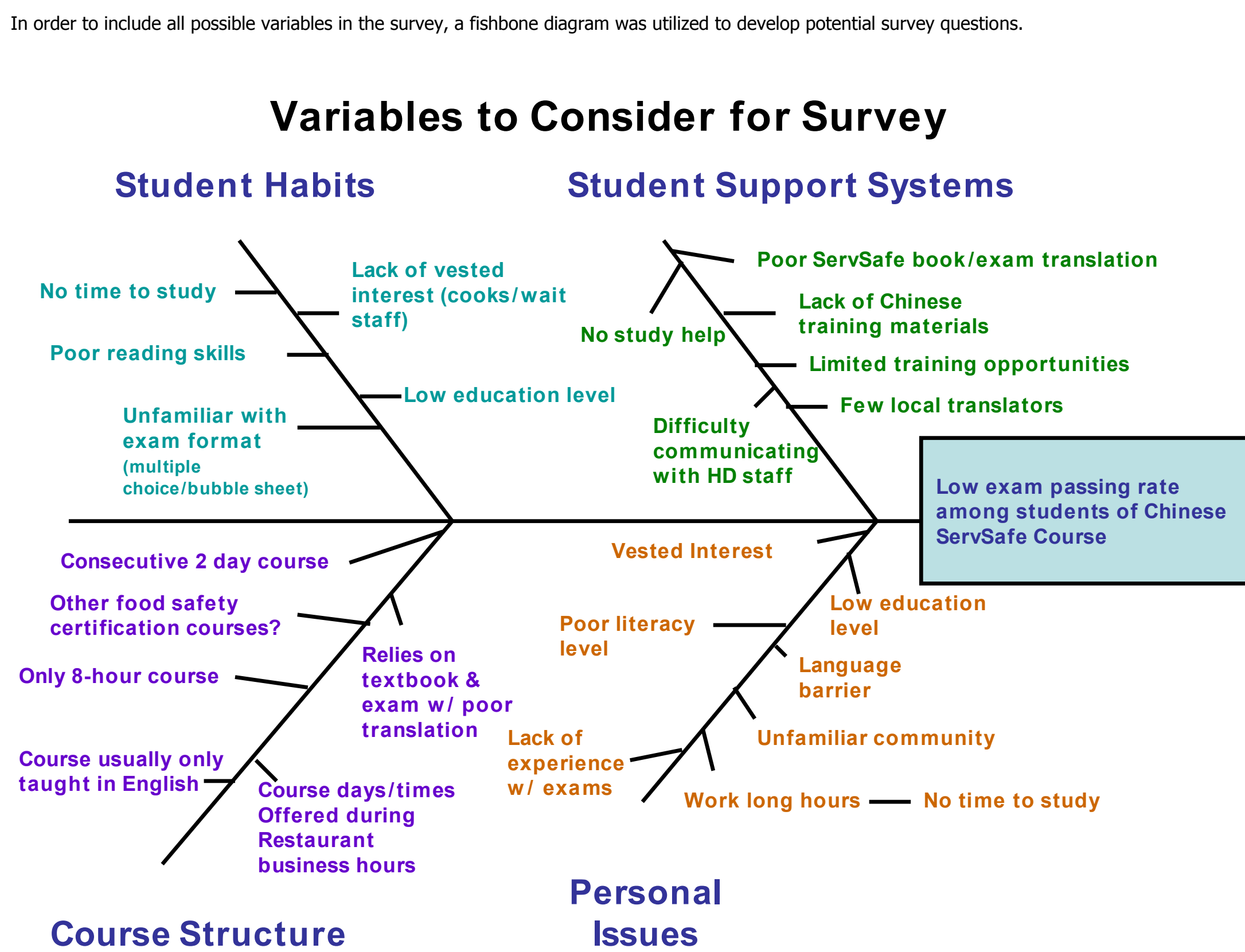
ServSafe Scores

Problems Observed During ServSafe Course:

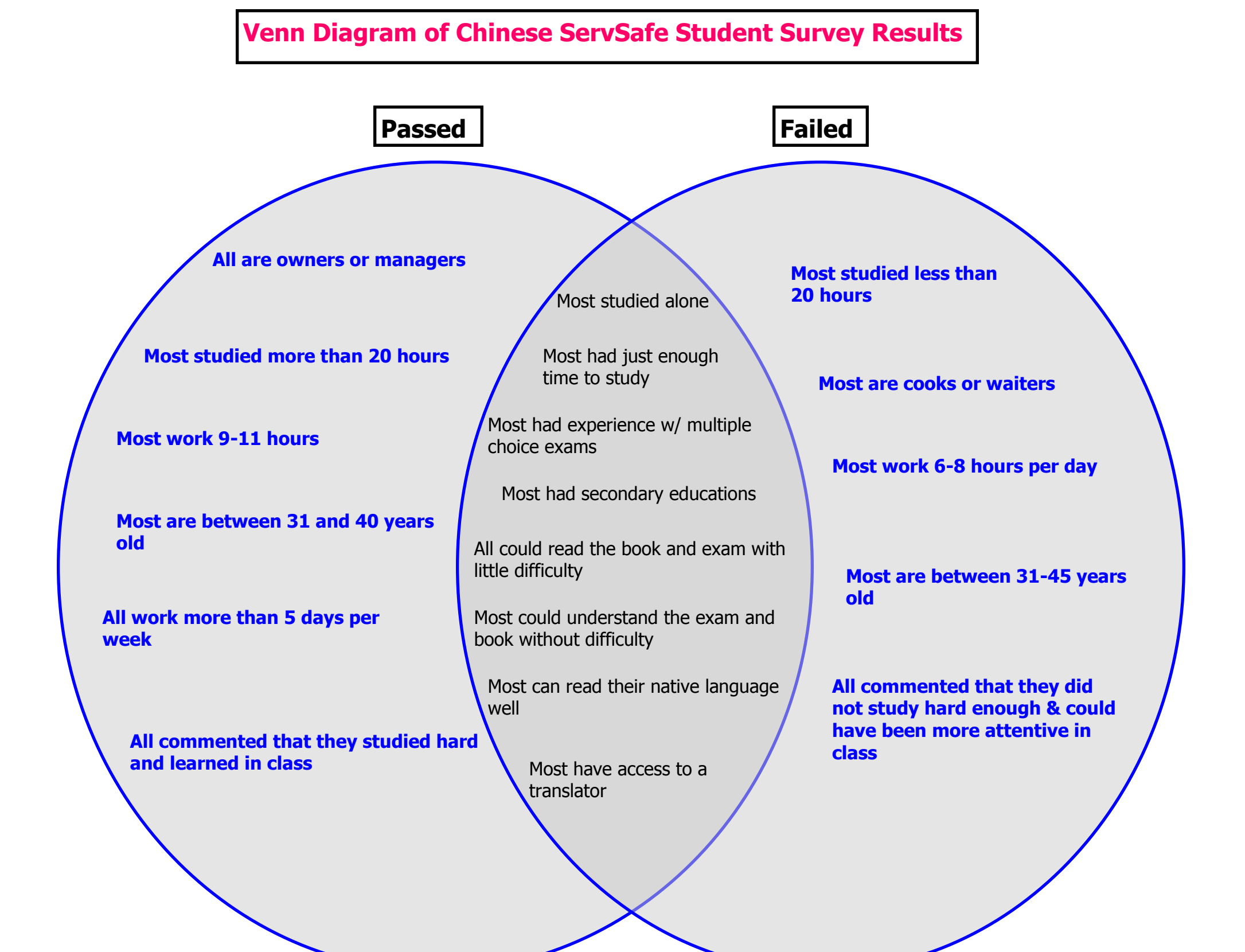
- Two of the students only attended the 2nd day of the course. They missed 6 hours of the 8-hour ServSafe course format.
- One of the students was a last minute substitution for a student who had a family emergency in another state. The substitute student did not have an opportunity to study the text book in advance.
- Most of the students had a difficult time understanding and completing the initial personal information required on the exam "bubble sheet." This fostered a concern that the students may have problems transferring answers to the exam form correctly.
- The exam results indicated that one of students received zero points. This only confirmed that at least this particular student had trouble with the "bubble Sheet" exam form. GTCHD had the student come back and take the exam again, but the student received 73% and failed.
- The small class size magnified any variation and therefore the statistical significance of the theory test is questionable. However, the mitigating factors must be explored.

Develop a New Theory and Establish Future Plans

After the results were studied and proved the original AIM Statement had not been met, there was a realization that the root cause of the problem was still lingering. The QI Team did recognize that there were some great achievements that could be attributed to the QI project. A positive report was developed between GTCHD and owners/managers/FS workers from Chinese restaurants. A survey of the students just before the ServSafe exam confirmed that the students were extremely grateful for the effort to provide training in their native language. However, as highlighted by the poor exam results, there were still many other variables that are contributing to the low ServSafe passing rate among these students. The GTCHD team decided to develop a survey to distribute to all of the ServSafe students from Chinese restaurants whether they took the Chinese course or they took the course taught in English.



After the survey was developed, it was then translated into Chinese by Jean Chang, Public Health-Muskegon County. The surveys were hand delivered to each student and then collected two days later with a 94% return rate. The answers to each survey question were compiled into six separate categories: those who passed the English version of the course; those who passed the Chinese version of the course; those who failed each version of the course; and those who passed overall and failed overall. In an effort to find common factors, a Venn Diagram was constructed to compare those who passed the exam and those who failed.



An examination of the Venn Diagram confirmed similarities and differences between the two groups. The QJ Team focused on the unique differences highlighted by the diagram. The fact that all those who passed were owners or managers indicates that "vested interest" may be a significant factor which can be linked to other factors identified such as study habits and work hours per day. Cultural differences or social class issues may be an issue which is not apparent on the surface. Anecdotal information obtained from informal discussions with restaurant owners and discussions during the QJ Team's visit to the restaurant confirmed that the QJ Team's findings were not unique to the restaurant. The QJ Team interpreter, Jean Chang, revealed that handwriting and grammar skills of those students who failed the ServSafe exam were generally more basic and elementary than those who passed the exam. These observations are difficult to confirm, but the combination of low education level, low literacy skills, and low English proficiency may be contributing factors to the students' failure to pass the exam. The QJ Team's findings on education level. Some States require that all food service workers have a current "food handler's card," which is obtained after passing an approved training program. Workers then have a vested interest in passing the training course because their jobs is in jeopardy. Vested interest then overcomes the low education disparity. The food service worker will take extra measures to pass the course, i.e. seek a tutor, study harder, form study groups, etc. The QJ Team's findings on the person in charge to be certified. In order to effectively increase vested interest among Chinese food service workers, an incentive must be present.

Initially, the effort to increase the SenSafe exam passing rate among Chinese food service workers seemed like it was going to be black and white. Proving training in the students native language and they will be more likely to pass the exam. In reality, this QJ project is not black and white but several shades of gray. The complexity of the potential root causes and there interrelationships have been both enlightening and perplexing. At this point in time, it is apparent that before any future plans are established, more work must be done. Also, the ultimate goal of increasing overall food safety knowledge and lowering the incidence of food borne disease must be paramount. Therefore, the following initial steps will be forthcoming:

- Meet with the Chinese restaurant owners and managers to present the findings of the QJ project and discuss potential options for training
- Determine possible incentives for Chinese food service workers to participate in food safety training (i.e. increase vested interest)
- Establish AIM statement for new PDCA cycle