Aligning South Kitsap Fire and Rescue's School Fire Safety Education Program with Community Risks

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Certification Statement

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that the appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

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Abstract

South Kitsap Fire and Rescue (SKFR) has worked annually with the South Kitsap School District (SKSD) in the delivery of school fire safety education. This relationship has been established for many years and reflects an open and collaborative approach in the delivery of the message. The problem is that a comparison between what is taught in the SKFR School Fire Safety Education Program and the South Kitsap community fire and burn problem has not been conducted. The purpose of the research is to compare the SKFR School Fire Safety Education Program to the fire and burn problem in the South Kitsap community. A descriptive research methodology was used to answer the following questions: What are the knowledge, skills, and abilities delivered in the SKFR School Fire Safety Education Program today? What are the fire and burn problems in the South Kitsap community? How do the SKFR School Fire Safety Education Program and the South Kitsap community fire and burn problem compare? What can be done to align the SKFR School Fire Safety Education Program with the South Kitsap community fire and burn problem?

A literature review, interviews, and data studies identified key issues involving what the current education program provides and what the actual risks are that the citizens of the South Kitsap community experience. The results of these processes found the SKFR School Fire Safety Education program had not historically developed the yearly education messages based on community risks. Recommendations were made to develop a reporting method to identify community risk annually that would allow these identified risks to be specifically addressed through the education program. Risk identification would also allow SKFR to better develop its membership in understanding community risk issues and expanding their ability to provide risk reduction information and solutions to the citizens they serve.

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Introduction

South Kitsap Fire and Rescue (SKFR) works annually with the South Kitsap School District (SKSD) in the delivery of school fire safety education. This relationship has been established for many years and reflects an open and collaborative approach in the delivery of the message. The SKSD is the largest school district in Kitsap County providing education for students from kindergarten through twelfth grade. SKSD has ten elementary schools, three middle schools and one high school. SKSD's total student population is approximately 10,185 and they employ a staff of 1,210 (South Kitsap School District website, n.d., Chapter District info). For the past six years the SKFR School Fire Safety Education Program has been delivered primarily through suppression personnel receiving oversight from an administrative battalion chief and two fire prevention technicians working in the SKFR Prevention Division. Both SKFR and SKSD openly embrace the importance of this subject area and have a shared desire to educate and provide a quality message to the target audience.

SKFR is currently in its eleventh year as an accredited agency through the Commission of Fire Accreditation International (CFAI) and actively works to improve and expand the delivery of services it provides to the citizens it serves. SKFR openly agrees with the ideal that one of the fire services most important roles is to educate its citizens to recognize hazards and modify behaviors that potentially places them at risk (International Fire Service Training Association [IFSTA], 1998, Chapter 19).

The problem is that a comparison between what is taught in the SKFR School Fire Safety Education Program and the South Kitsap community fire and burn problem has not been conducted. The purpose of the research is to compare the SKFR School Fire Safety Education Program to the fire and burn problem in the South Kitsap community. A descriptive research

methodology will be used to answer the following questions: (a) What are the knowledge, skills, and abilities delivered in the SKFR School Fire Safety Education Program today?, (b) What are the fire and burn problems in the South Kitsap community?, (c) How do the SKFR School Fire Safety Education Program and the South Kitsap community fire and burn problem compare?, and (d) What can be done to align the SKFR School Fire Safety Education Program with the South Kitsap community fire and burn problem?

Background and Significance

SKFR is located on the southern third of the Kitsap Peninsula in the center of the Puget Sound Basin in Washington State. Primarily a residential community with an estimated population of 72,390, the district covers 122.53 square miles. Due to the features of the peninsula, the district has 22 miles of tidal waterfront and adjacent salt-water areas. SKFR's current borders are the Pierce County line on the southern edge, the Mason County line on the western edge, and the City of Bremerton and Puget Sound to the north and on the east. SKFR is a combination fire district with a career line staffing of 84, office and administrative staff of 16 and volunteer membership of 69. From its start in 1946 as a volunteer organization, the district has made the transition to a substantially career department primarily over the past 35 years with the hiring of career staff starting in the 1970s. Operating from one station at that time, the career staffing has increased gradually over time and has been distributed across the district staffing formerly volunteer areas of the district. Today SKFR is an internationally accredited agency through CFAI with eight of its sixteen stations staffed on a full time basis. The district provides basic and advanced life support with transportation to medical facilities and fire suppression services (South Kitsap Fire and Rescue [SKFR], 2010).

SKFR has a history of providing public education to its citizens and school age children that goes back to the earliest days of the career staffing. As the district grew, a public educator was hired in 1992 to oversee this portion of the district's prevention program. The public educator established program curriculum and provided the majority of the delivery to the citizens. Programs that were implemented in this area over the past 40 years were intended to help the agency achieve its mission statement in preventing the loss of life and property resulting from fire, medical emergencies, and other disasters. The nature and level of this delivery has changed throughout the years and has included a number of common fire agency deliveries: (a) station tours, (b) fire and aid unit appearances, (c) home inspections, (d) general fire and burn safety, (e) fire extinguisher training, (f) cardiopulmonary resuscitation (CPR) training, (g) child car seat checks, (h) Risk Watch, (i) community safety fair, and (j) school fire safety training in conjunction with fire prevention week (M. Wernet, personal communication, April, 2011).

These fire prevention programs expanded until, as a result of limited financial resources, SKFR was required to eliminate the funding of the public educator position in 2005. A reorganization of district staffing required the funding for this and another staff position to be redirected to suppression personnel (South Kitsap Fire and Rescue [SKFR], 2007, p. 15). Following this reorganization, the public education responsibility was assigned to an administrative battalion chief to deliver through the use of suppression and fire prevention personnel. In 2011, with the current recession and financial challenges facing SKFR, there is no anticipation of the public educator position being reinstated in the near future.

In 2010, SKFR presented 138 public education events with approximately 7200 citizen contacts within the jurisdiction. A significant portion of these public contacts traditionally are station tours and engine or aid unit visits which represent a limited dedicated education focus as

opposed to simple public relations presentations. Twenty-one of these events involved organized public school presentations completed during the month of October in conjunction with the National Fire Protection Association (NFPA) Fire Prevention Week. Currently the SKFR School Fire Safety Education Program is based around the NFPA Annual Fire Prevention Week message and a somewhat random combination of fire safety topics traditionally presented to the community. These traditionally presented topics range from the "Stop, Drop, and Roll" to "Firefighters are your Friend", and "Test and Change your Smoke Detector Battery". These annual message are delivered in cooperation with the SKSD at the elementary school level throughout the district. A total of ten elementary schools are involved with kindergarten through sixth grade level receiving the program in large group settings (M. Wernet, personal communications, April 2011).

At this current time, SKFR's School Fire Safety Education Program is active and has involvement from members throughout the organization. The community support and number of citizen contacts are within acceptable limits for a community of SKFR's demographics. What is needed is a methodology to bring this fire prevention message beyond the routine or "canned" program and directly relate it to the issues that are impacting the South Kitsap community.

The National Fire Academy (NFA) course, Executive Analysis of Community Risk Reduction (EACRR) directs the Executive Fire Officer (EFO) to recognize their responsibility as community risk reduction strategists and leaders. The course calls for the EFO to, not only accept personal responsibility for risk reduction in their community, but teaches the EFO to develop a personal vision for risk reduction that is aligned with the risks in the community they serve (National Fire Academy [NFA], 2011, p. 1-6).

As an accredited agency through CFAI, SKFR has a number of performance indicators it is required to address through self assessment in the area of public education and fire prevention. During their 2005 site team review and again in 2010 when SKFR completed the re-accreditation process for the third time, the site team had recommendations for areas of improvement. CFAI performance indicator 5C.4 "The public education programs target specific audiences based on program analysis." (Commission on Fire Accreditation International [CFAI], 2006, p. 83) is one recommendation that relates to the topic of this Applied Research Paper (ARP). The site team members directed SKFR towards a more detailed analysis of data relating to historical community risk. They recommended improvements in SKFR's public education program with curriculum being tied more closely to what the risks in the community actually are.

Within SKFR there is a need to have the necessary components of the school fire safety education program based on actual community risk. Program delivery that relates to defined risks will be more effective in reduction of the true problems experienced in the community. The ability to align the SKFR School Fire Safety Education Program to community risk will support several of the United States Fire Administration (USFA) objectives. Most specifically, the objective to, "reduce risk at the local level through prevention and mitigation" (National Fire Academy [NFA], 2011, p. 1-4).

Literature Review

The main focus of this literature review was directed towards the four research questions relating to aligning the SKFR School Fire Safety Education Program with community risks. A number of the research questions were specific to the SKFR program and did not directly correlate to specific literature beyond a general knowledge level. The literature review was conducted with the use of books, journals, magazines, internal SKFR publications, and internet

sources. Materials were gathered through the local library, the Learning Resource Center (LRC) at the National Fire Academy (NFA), internet search engines, and individual collections at SKFR.

In answering the first research question: What are the knowledge, skills and abilities delivered in the SKFR school fire safety education program today? The researcher started at a broad level looking at what industry standards are in this area. The NFPA 1035 Standard for Professional Qualifications for Fire and Life Safety Educator has the position broken down into three levels named Fire and Life Safety Educator 1, 2, 3, as they relate to the instruction delivery. These relate to where individuals fall in program responsibility and personal growth with credentialing. Fire and Life Safety Educator 1 as the lowest level corresponds closest with the line or company level personnel delivering this message as a portion of their job responsibilities in SKFR. The primary role of this level is simply to deliver prepared lessons with skills relating to oral and written communications, education minimum at the entry level firefighter and any combination of experience relating to the lesson topic as approved by the Authority Having Jurisdiction (AHJ) (National Fire Protection Association [NFPA], 2009).

The 1035 standard in annex A emphasizes the importance of summarizing relevant and current data for planning and lesson development purposes. The more accurate and community specific this data and corresponding lesson plans are, the more likely they will achieve the intended goal. This area of the standard also addresses the importance of systematic reporting and data collection methods in order to achieve pertinent information for decision making (NFPA, 2009, figure A.6.3.1). Additionally, in the 1035 standard annex A the need for fire and life safety education to be adapted to specific audiences needs is addressed. Each audience has characteristics that are unique and for an educator to effectively reach them and achieve the

intended impact from the lesson, adjustments to curriculum and delivery need to be considered. Differences in audiences recommended for consideration include: (a) age, (b) cultural and ethnic backgrounds, (c) education level and learning styles, (d) physical ability and agility, (e) language, (f) emotional characteristics, and (g) values and beliefs (NFPA, 2009, figure A.6.4.4).

When looking into the specific knowledge, skills and abilities (KSA's) taught with a fire and life safety program, all instruction in this area addresses at some level one of the core or base pieces of Abraham Maslow's Hierarchy of Needs that modern psychology recognizes as motivating factors. The second level in this hierarchy relates to individuals well being and safety needs which must be satisfied before moving to higher levels in the hierarchy (Miller & Miller, 2002, p. 48).

More specific to the fire service today is the concept of educating people to help them prevent fires or to react in an appropriate manner if one was to occur. This message runs concurrent with the safety aspect of Maslow's work. Fire and life safety education is directed towards creating an awareness of common risks and hazards as well as providing information on reducing or eliminating the risks. Common messages taught in fire and life safety programs include: (a) Stop, Drop and Roll, (b) Exit Drills In The Home, (c) smoke alarm use and maintenance, (d) Learn Not to Burn, (e) fire safety for babysitters, seniors, and college students, and (f) wildland fire prevention programs (Jones and Bartlett Publishers, LLC , 2009, Chapter 35). Many jurisdictions teach curriculums and behaviors directed at this general listing of topics. The Learn Not to Burn behaviors specifically address the three areas of protection, prevention, and persuasion at age appropriate levels (International Fire Service Training Association [IFSTA], 1997, p. 348).

Identifying content and specifying behaviors in lesson development and delivery requires instructors who know and understand the objectives the students are expected to achieve. The KSA's they intend to impart to their students must be part of the curriculum they use in the instruction process. The fundamental purpose in designing and delivering instruction to a target audience is to have the learner acquire competencies in that subject matter. Lessons developed with clear objectives provide the instructional intent to help the learner develop the desired competencies (Miller & Miller, 2002, Chapter 4).

In SKFR for the past five years, the main fire prevention delivery at the public school level has been in conjunction with the NFPA Annual Fire Prevention Week in October. The focus of these programs has been at the elementary school level and was delivered in a group setting due to the numbers of students involved. The programs have consisted of a combination of messages. The main delivery being educational in nature and the remaining portion of student contact time spent on public relations type informational delivery. Each of the last five years the structured educational message has been based on the NFPA yearly topic for fire prevention week (South Kitsap Fire and Rescue [SKFR], 2010, Chapter Community events and public information). The NFPA yearly topics for the 2005 through 2009 fire prevention weeks have included: (a) use candles with care, (b) prevent cooking fires, watch what you heat, (c) practice your escape plan, (d) prevent home fires, and (e) stay fire smart, don't get burned (National Fire Protection Association, n.d.).

Beyond the fire prevention week deliveries at the public elementary schools, SKFR also provides annual programs related to fire and life safety education at the high school and middle school level. At the high school level, each spring before the senior class graduates, a mock drill is presented to the class involving students who had been involved in a motor vehicle collision

while impaired by drugs or alcohol. Also at the high school level, SKFR paramedics work with the Athletic Medicine Class each quarter providing training in specific areas related to sports injuries and emergency treatment. At the junior high level, SKFR members attend and present three times a year at career fairs (SKFR, 2010, Chapter Community events and public information).

To answer the second research question: What are the fire and burn problems in the South Kitsap community? The literature review addresses the fire and burn problem at both the regional and national level. The procedure portion of this ARP will research this issue at the local level for the South Kitsap community.

In 1973, when the National Commission of Fire Prevention and Control published the report America Burning, fire prevention received focus in three chapters. The main topics covered in these chapters were based on education, home safety, and target audiences in the young, old, and infirmed (National Commission on Fire Prevention and Control, 1973). The report found that a significant part in the nation's fire problem was related directly to human controlled factors. Human failures in recognizing hazards, preventing fires from starting, and acting appropriately when a fire occurs all had corrective solutions based on education. The major areas of loss in building fires that involved human factors were heating and cooking fires, smoking and matches, and electrical (National Commission on Fire Prevention and Control, 1973, p. 105).

Following the American Burning report and the nation's response to it, in 2002 the Federal Emergency Management Agency (FEMA) produced a follow up report titled America at Risk, America Burning Recommissioned. Although almost thirty years later America at Risk found many of the same issues as America Burning in the areas of fire education and prevention.

America at Risk found that education programs in the schools are not only a good venue to reach a broad portion of our citizens, it also reported that these school age children were able to convey the fire and life safety messages to parents and others in the home. The report recommends that the fire service and local school systems work together in providing all hazards learning curriculum. It also emphasized the importance of data analysis as a basis for prioritizing and determining initiatives in this area (Federal Emergency Management Agency [FEMA], 2002, p. 19).

In March of 2010, Michael J. Karter, Jr. drafted a report on the U.S. Fire Experience by Region for the NFPA. The report looked at fire data in relation to the four major regions in the country; Midwest, Northeast, South, and West. It found a number of reasons for differences between regions including: climate, community size and makeup, population age, and education level, construction type and percent of people living in poverty (Karter, Jr., 2010, p. 1). Karter identified that nationwide 26.1% of all fires occurred in residential type occupancies with 83% of civilian fire deaths occurring in this type of occupancy. 79.1% of civilian fire injuries also occur nationally in the residential environment (Karter, Jr., 2010, table 6). Nationwide, cooking fires account for 41% of all residential fires followed with 19% for heating equipment. Smoking materials are involved in 4% of residential fires yet account for over one quarter of residential fire fatalities. Fires involving cooking equipment contribute to over one third of civilian fire related injuries across the nation (Karter, Jr., 2010, tables 13, 14).

Fire and burn injuries each year impact approximately 116,600 children in the United States (US) and over 500 children under the age of fourteen die from unintentional fire and burn injuries. Scald and steam burns are the most common associated with hot foods or liquids along with hot tap water accounting for the majority of these types of injuries. Injuries to children

from fire and burns have a substantial financial impact and account for costs of over $44 million annually in the US (Safe Kids USA, n.d.).

In Washington State, the office of the State Fire Marshal produces an annual report on fire in Washington. This report is generated by data collected from fire agencies across the state and compiled into a document showing both general trends and specific regional details. This data driven report is intended to assist agencies in identifying and understanding issues relating to fire in the state and to allow targeted fire prevention, education and suppression programs to help reduce or eliminate potential hazards or risks. The data reporting for this report is required by state statute in the National Fire Incident Reporting System (NFIRS) format with the 2010 report reflecting 84% of agencies reporting statewide (Washington State Fire Marshal, 2010, p. 5).

The Washington State history during the 2006 to 2010 time period shows a declining trend in the number of fires reported through this NFIRS system and state report. During this five year period, structure fires were the main fire reported accounting for approximately 30% of fires reported and 85% of the dollar loss. Statewide, 73% of fire fatalities occurred in structural fires during this five year period. The second most common fire type reported over this period was natural vegetation fires accounting for 25% of the total and an estimated 27 million in loss. Historically, fire in mobile property or vehicles accounted for the third most common report at 16% and also represent a significant dollar loss of over 100 million dollars (Washington State Fire Marshal, 2010, p. 8).

The NFIRS data during this five year period also reported that fires by heat source ranked operating equipment as the leading cause reported at 27% followed by open flames or smoking materials and then hot or smoldering objects. Fires that started in functional areas resulted in the

highest dollar loss to property and contents during this period. Functional areas include bedrooms, eating areas, kitchens, bathrooms, utility rooms, and offices. Next in order of common areas of origin following functional areas were structural areas which include crawl spaces, attics, wall and roof areas, and enclosed porches (Washington State Fire Marshal, 2010, p. 10). Other general areas the Washington State Fire Marshal's Report touched on were that the leading causes of ignitions were found to be unintentional. The states higher population areas generated higher percentages of incidents and dollar loss, and that smoking related fires were the leading cause of fire fatalities.

The Fire in Washington Report divides the state into nine regions for reporting in specific detail. Region one includes Clallam, Jefferson, Kitsap, and Mason Counties which includes SKFR. Reporting trends in region one followed the state averages very closely. The only major exception to the statewide reporting was a lower occurrence of outside, natural vegetation fires which can be due to the regions location and climate impacts (Washington State Fire Marshal, 2010, p. 24).

The third research question asks how the SKFR School Fire Safety Education Program and the South Kitsap Community fire and burn problem compare? The importance of a fire prevention message aligning with the problems experienced in a specific community is apparent in the CFAI criterion section on public education. Criterion 5C covering public education programs in the CFAI Fire and Emergency Self Assessment Manual (FESAM) has three performance indicators that support this concept. Criterion 5C.4 requires public education programs to target specific audiences based on analysis of needs. Criterion 5C.5 specifies that an agency have an information system in place to document and analyze information related to public education. Performance indicator 5C.6 requires periodic appraisal of program

effectiveness. Two of these performance indicators, 5C. 4 and 5C.6 are considered "core competencies" in the CFAI self assessment process and are required to receive dedicated effort for compliance or improvement from the agency (CFAI, 2006, p. 83).

In order to determine if a fire prevention message is targeting the correct audience and if the chosen curriculum is targeting correct problem, a needs assessment or analysis should be completed. Every fire service organization should undertake this process and recognize that each agency is unique with the problems it faces and the solutions they may provide for them (PennWell Corporation, 2003, Chapter 26).

One form of a needs assessment simply looks specifically at a number of areas relating to the topic. Starting with a general awareness from the agency perspective of what the issues are in the community may not be recognized as scientific but is often representative of historical experience. In smaller organizations this is often somewhat accurate due to the limited number of responses and should always be considered as part of any new program being developed. Fire cause data and emergency medical data are also important sources of information available with most agencies today in various records management systems. Both of these data sources allow for year to year studies on specific issues and also allow for trending to be looked at within the community over time. Another somewhat general and non-specific area addressing community needs is simply when requests are made for programs from the community itself. Most fire agencies have numerous requests for programs throughout the year. Although often general in nature, these requests at times can identify specific, or the perception of, needs from the community (PennWell Corporation, 2003, p. 1068).

The purpose of conducting any form of needs assessment is to identify the "gap" between what the current situation is as opposed to the desired situation. The needs assessment process

itself is intended to pinpoint this performance gap which then allows instruction to correct. The end goal is to develop competencies in desired areas by teaching the needed knowledge and skills to the learner (Gupta, 1999, Chapter 1). Data gathering is the cornerstone of any needs assessment as this data is intended to identify specific training needs and curriculum. There are many ways to gather data for a needs assessment and the use of more than one method is optimal. Gupta (1999) recognized four methods including: interviews, focus groups, surveys and questionnaires, and observation. The use of one or more of these methods in conjunction with the historical data available in agency records would allow conclusions to be formulated. Once an assessment is completed, results can be compared to the desired outcomes and corrective actions in the form of instruction can be made (Gupta, 1999, Chapter 2).

When addressing the results of any needs assessment, it is important to identify not only the problem but more specifically, the people it affects. Analysis of target populations and specific groups or neighborhoods must be considered. At times, to reach the target audience the approach may involve working with those around the intended audience itself. Caregivers, family members and community leaders or groups may be the best or most effective way to convey the message. Developing partnerships and relationships in the community to achieve the intended goal not only expands potential resources, it broadens the perspectives used to solve the issue (Forster, 2011).

The final research question this literature review addresses is what can be done to align the SKFR School Fire Safety Education Program with the South Kitsap Community fire and burn problem? In looking at the strategic level of aligning programs to community risks, it is important to define both the risks that are relevant in that community and the resources available to address the targeted risks. The development of an overall community profile to align the risk

assessment results with the agencies ability to deliver programs to help mitigate the identified risks is a starting point (Buckman III, 2006, p. 435).

Once a community's risks have been identified, the purpose of education or training is to provide the student with a structured learning experience directed towards the identified topic. Curriculum is developed to provide subject content and skills related to the learner's performance in the area being addressed. In order to design instructional materials relevant to the topic and learner, a comprehensive and systematic process is required to provide successful learner performance in the end. Addressing learning theory as to how the student learns, instructional theory ensuring the desired learning occurs, and instructional design on how to create and apply an effective lesson on the topic all play a part in the instructional design model. Key elements in the instructional design process involve consideration for whom the program is being developed, what are the intended objectives for the learner, how are the subject or skills best learned, and how do you determine the outcome of the lesson? Most of these design concerns require a level of subject matter expertise and training or education to fully master (Morrison, Ross, & Kemp, 2004, Chapter 1).

Agencies today must find a balance between support for suppression and prevention programs. This balance will require looking for solutions in more than one location sometimes outside of the traditional agency delivery. Working with other fire agencies in the geographic area to cover messages that each has in common would be one method of regional delivery. In a volunteer or combination agency, developing a volunteer group to deliver or assist with delivery could be considered. When working with certain groups such as the aged, peer groups of volunteers can be especially effective. One of the most important areas to consider is the development of relationships with other non fire agencies that have a shared interest in the topic.

The development of community partners can yield many positive outcomes for program delivery and give opportunities for adoption and or modification of developed program materials to meet specific needs. When developing a public education program, the need to address the personnel requirements and how to best provide them is of key importance. Properly selected and trained personnel motivated to deliver the message will help ensure the program's effectiveness and success. If program delivery is to use line personnel, it is important to develop materials and lesson plans to provide some level of program continuity with the various personnel involved (Buckman III, 2006, p. 435).

The 6th edition of the Fire Chiefs Handbook chapter on Public Safety Education (PSE) recognizes the proactive nature of eliminating or reducing risk as an essential part of the fire services job. The chapter goes on to emphasize the difference between "education" as opposed to "show and tell" when taking an honest look at program delivery. Effective PSE programs involve planning and support in order to deliver consistent messages for a desired result. Objectives that should be considered with any PSE program include: education targeted at specific audiences to change an identified behavior, instructions for the target audience on how to perform specific tasks or skills, information presentations on public safety issues, and distribution of information on the desired topic to a targeted audience (PennWell Corporation, 2003, Chapter 26).

The NFPA maintains an Educational Messages Advisory Committee who meets annually to review and update the NFPA's fire safety messages. The intent of this committee is to provide public educators and fire safety advocates with a guide of standard fire and burn safety messages for public use. The 2010 document has messages broken down into 17 chapters covering different historical fire and burn problems. Written out in a NFPA numbering format, each

chapter covers a number of points relevant to that chapter's topic. Each chapter contains numerous simple paragraph type talking points for educators to use when developing or teaching lessons in that subject area. Once a determination of community risks has been established, selected chapters are intended to provide consistent messaging in that specific area (National Fire Protection Association [NFPA], 2010).

When planning fire and life safety education, the International Fire Service Training Association (IFSTA) recommends a five step systematic process. The five steps include: identification of the problems, selection of educational objectives, design and implementation of the program, followed by evaluation of the work (IFSTA, 1997, figure 6.2). Any program must be started with the identification of the fire or life safety problem. Questions to answer in a review should include: what are the fire and burn hazards, where are the high risk times and locations for events, and who are the high risk victims and what is the risky behavior? The selection of lesson objectives involves addressing who the audiences will be, what community resources are available to assist, and what materials and over all cost should be used or expected. In the program design phase developers must consider content, format, and time and place of delivery. The final area of program planning is the evaluation of results to determine if the intended impacts were achieved or if program modifications are needed to better achieve the intended goals (IFSTA, 1997, Chapter 6).

In summary, the literature review was valuable in developing the knowledge base necessary to better understand the need for public education programs to align with the problems or risks a community actually experiences. It strengthened the authors understanding of what fire prevention programs should contain and how they can be effectively delivered. The review

confirmed the ideal that fire prevention programs are necessary elements for every fire agency to be fully effective in delivering quality service to its citizens.

Procedures

The procedures utilized to prepare this ARP included the development of research questions, literature review, interviews, and data acquisition and analysis. The research included a review of literature on topics relating to fire and life safety educations and the fire and burn problems from the local to national level. The research began initially at the Learning Resource Center (LRC) at the NFA where searches were conducted with staff to acquire available information relating to the topic. Similar processes were undertaken through the Kitsap County Library System to broaden the resources utilized. In addition, research was conducted online utilizing the common internet search features available today. Additional documents relating to the subject were also gathered from fire department's in house and local sources. The overall literature review included books, journals, manuals, agency reports and other written materials as well as information available from internet sources.

Following the completion of the literature review, a series of questions (Appendix A) were developed to guide a structured interview process. The questions developed were intended to focus on and gain information relating to the first and fourth research questions for this ARP. These research questions involved information that would require input from internal SKFR members who have responsibilities related to the public education program. The district members chosen for the interviews were limited to Battalion Chief M. Wernet, Public Education Program Manager and G. Rogers, Fire Prevention Manager at SKFR. At the beginning of each interview the researcher stated the purpose of the ARP and reviewed the ARP questions the interview was directed towards. The interviews were scheduled in district facilities during

normal work hours at times that were mutually agreed on by each individual. The interviews required between one and two hours to conduct depending on the depth and scope of the answers given. Both members interviewed were allowed to freely discuss and expand on each question asked. All information gained in the interviews was analyzed and summarized for use in the results and discussion sections of this project.

To address the second research question, several approaches were used to help identify the fire and burn problems in the South Kitsap community. The initial phase of this research process involved contacting local agencies outside of SKFR who potentially had information relating to this question. The two agencies selected were the Kitsap County Coroners office and Safe Kids Kitsap.

To determine what the significant impacts of fire and burn injuries were in Kitsap County that resulted in deaths, the researcher accessed the Kitsap County Coroner's official website at www.kitsapgov.com/coroner/ to find contact information for the coroner's office. The researcher contacted the Kitsap County Coroner through the e-mail link provided on June 8, 2011 and requested information assistance with this project. A meeting was scheduled at the Kitsap County Coroner's office at 5010 Linden Street in Bremerton, WA for 15:00 on June 14, 2011. Kitsap County Coroner G. Sandstrom and Deputy Coroner A. Davis were explained the purpose of this research project and the specific question the researcher was attempting to address with their assistance. Deputy Coroner Davis offered to utilize the coroner's data base and produce a report covering the past three years of statistics for investigated deaths that occurred in the South Kitsap community. He committed to e-mail to the researcher the report at a later date once completed. This report was received on July 5, 2011 via e-mail and recorded for analysis. The Microsoft (MS) Excel report was initially filtered to remove death information relating to natural

and homicidal deaths which did not apply to this research project. A follow up e-mail was returned to Deputy Coroner Davis after initial analysis of the report to ask for additional details on gender and age for the individual cases in the study. An Excel spreadsheet of preventable deaths that occurred in the South Kitsap community was created (Appendix B).

To contact Safe Kids Kitsap this researcher requested contact information from the SKFR Medical Services Officer for Safe Kids Kitsap based out of Harrison Medical Center in Bremerton, WA. Contact information for a R. McNeill Coordinator of Community Development was given and an e-mail was sent on June 16, 2011 to establish communications. The e-mail explained the purpose of this research project and the specific question the researcher was attempting to address with Safe Kids Kitsap assistance. A phone meeting was scheduled for 13:30 on June 21, 2011. The 15 minute phone interview with R. McNeill consisted of an overview of the research project and a request of data relating to the second research question on fire and burn injuries in Kitsap County. Safe Kids Kitsap forwarded a data package of the top ranked causes of injuries and deaths for children ages less than one to eighteen in Kitsap County (Appendix C). The data sheets covered a five year time frame from 2005 thru 2009. The researcher asked if Safe Kids Kitsap was able to filter down farther in the specific details relating to fire and burn injuries and break down the data to the specific area of South Kitsap county. She committed to checking on these requests and responding back with her findings at a later date. On June 30, 2011 she returned an e-mail with the information that the Safe Kids Kitsap data base did not allow her to filter down to any greater details in the report.

Within SKFR an analysis of historical response data was completed to identify what the fire and burn problem had been over a given period of time. Due to the volume and reliability of the sample size a three year window of data was used. SKFR currently uses Emergency

Reporting Systems (ERS) as its records management software and the data from years 2008 thru 2010 was utilized. Data entry is completed by first responders following incidents and filtered and edited for completeness and quality by administrative staff as an on going process. Response data from ERS represents all activities and service types delivered by SKFR. The incident data was exported from ERS into a MS Access database. Once the new data tables were imported into MS Access 2002, multiple queries were built to gain the information. The Access queries were exported into Excel for formatting, sorting, and tallying as needed for this ARP.

The analysis and study began with a filtering down of data into calendar years, looking at the most recent complete three year historical period. Additional break down into classifications related to the fire problem with information gathered from fire response data, and burn data gathered from the Emergency Medical System (EMS) portion of ERS. The fire response data was filtered further into incident types and grouped into categories. The researcher worked closely with SKFR administrative office staff and the Information Technology (IT) technician during this process.

Early in the research process with the SKFR fire data, a significant data issue was identified. SKFR historically has utilized the Kitsap County Fire Marshal's Office (KCFMO) for significant or suspicious fire investigations. SKFR has crews typically, release fire scenes to the KCFMO and document situations as undetermined and under investigation in ERS. At a later date, once the KCFMO has completed their investigation, a written report is forwarded to SKFR with the completed fire investigation findings. These written reports in the past have been scanned and electronically attached to the fire incident in ERS before being filed in hard copy form. The identified data issue was the ERS incident reports had not been re-opened and updated with the findings from the KCFMO. This resulted in a significant amount of incidents showing

undetermined and under investigation with no meaningful data relating to the cause and origin, dollar loss, or other significant factors relating to the incident. A form identifying the needed data fields was created (Appendix D) and the 2008 thru 2010 KCFMO reports were opened and read in order to acquire the data available to complete the form. In total 95 KCFMO reports were opened and studied to gather data to complete the form. Once the available data was identified and documented, each corresponding ERS incident was opened and updated with the KCFMO information. Once this process was completed, reports could be run to identify the information needed for this ARP. All SKFR data was analyzed and studied to determine the nature and reason for the fire and burn problems experienced in SKFR for the years 2008 thru 2010.

The third research question intended to define if the SKFR School Fire Safety Education Program delivery compared to the actual risks historically experienced in the community. This research question required a comparative analysis of the information learned from the first and second research questions. Once the information from these two questions was gathered and available for study, a comparison of what had been taught in the SKFR School Fire Safety Education Program could be made against what the fire and burn problem actually was in the South Kitsap community.

The structured personal interview questions, phone conversations, and data gathering and analysis provided information needed to address the four ARP research questions. The literature review also helped identify and narrow down questions into specific areas. Once drafted, the interview questions for Appendix A were submitted to three individuals not involved in this project for review. These three individuals were also provided with a copy of the four ARP questions directing this research. Their review checked question structure, intent, and ability for the question to relate back to and answer the ARP research questions.

It is important to identify certain limitations of this descriptive research project and the procedures used. The personal interviews conducted with SKFR staff made the assumption that the interviewee was qualified by position to have accurate information relating to the topic and questions utilized during the interview. There also existed a potential for personal bias in each answer as the subject related directly to the members personal situation and future program activities. In the study of agency data from ERS and the outside agency contributors, a limitation exists with regards to the quality of the data entered by the reporting individual. Data from Safe Kids Kitsap and the Kitsap County Coroner was general in nature and covered topics much broader than specific burn injuries. The Safe Kids Kitsap reporting also only addressed issues on a county scale and not specifically for in the South Kitsap area. Sample size in all data studies were limited due to the number of incidents available to study. Looking at data samples in three and five year increments helped with sample size yet impacted the timeliness of the data.

Results

What are the knowledge skills and abilities delivered in the SKFR School Fire Safety Education Program?

The answers from the interviews conducted with SKFR personnel M. Wernet and G. Rogers provided the results for the first research question. Specifically questions 2, 3, 4, 6, 7, 8, 9, 10, and 11 of the interview questions (Appendix A) were directed towards this ARP question.

During the past five years, the SKFR School Fire Safety Education Program has primarily been delivered during the October NFPA Fire Prevention week. Although due to the scope of the delivery and scheduling with the local schools, much of the month of October has been directed to this effort. Each year all ten of the SKSD elementary schools and one private school receive the yearly SKFR School Fire Safety Education Program. The programs are

typically about one hour in length and are delivered at the schools through two large group assemblies. The schools are divided into groups at the kindergarten to third grade level and the fourth to sixth grade level for the presentations. All presentations have been based on the same yearly message and delivery regardless of the group's age or size.

The primary messages delivered during the SKFR School Fire Safety Education Program for the 2006 thru 2010 years have been based on the NFPA yearly fire prevention week topic. NFPA topics used by SKFR during the 2006 thru 2010 year time frame included (a) prevent cooking fires, (b) practice your escape plan, (c) stay fire smart, (d) prevent home fires, and (E) smoke alarms, a sound you can live with. The presentations have involved a modest focus on the NFPA message with no significant lesson plan development, structured learning goals or pre and post learning evaluations. A percentage of the assembly and student contact time has also involved fire safety messages beyond the NFPA message delivered in a somewhat random manor targeting an interesting and entertaining approach for the students. Topics covered not directly related to the NFPA yearly message have included, (a) calling 911, (b) tools vs. toys, (c) playing with lighters and matches around gas, (d) fireworks, (e) demonstration of wide area search and hiding from firefighters, (f) feeling doors and exiting out windows, (g) hazards of disabling smoke alarms, (h) helmet safety, and (i) water safety.

In conjunction with the group presentations, a one or two page handout with a fire prevention topic has been distributed through the school teaching staff for students to complete at home. Typical handout topics include fire escape planning for the student's home, home smoke detector testing, and fire hazard recognition and identification in the home. Each teacher was assigned to collect the completed handouts for return to SKFR at a later date. A well received reward system has been instituted for classes with 100% return of the fire prevention handouts.

Classes with complete involvement receive a "classroom ice cream party" scheduled at a time later in the year with SKFR personnel providing the materials for the party and continuing with the prevention message in a somewhat small group classroom social setting.

In addition to the October fire prevention scheduled assemblies, SKFR also has a number of small programs or presentations that are delivered through the SKSD system at different times throughout the year. SKFR personnel provide a class on emergency medical response for the sports medicine classes at the high school level. Students from this class are often involved with sports injuries while attending the events. Their early interventions and actions as well as the interface they provide with responders have had good results and support from the SKSD. Each school year personnel from SKFR present CPR and basic first aid classes for the school personnel who fill coaching or athletic leadership positions within the SKSD staff. Annually each spring, just before the senior class graduates, a group of community partners including SKFR present a staged motor vehicle collision requiring extrication equipment with students from the high school drama club acting as victims. The presentation involves all aspects of a collision involving an impaired driver and the resulting tragedy of his or her actions. This presentation is attended by all graduating seniors and has involved significant community collaboration with SKFR's oversight and involvement for over fifteen years.

What are the fire and burn problems in the South Kitsap community?

The information used to determine the results for the second ARP question came from the information received from the Kitsap County Coroner and Safe Kids Kitsap as well as the internal SKFR ERS database. The results from the Kitsap County Coroner's office based on their data from the years 2008 to 2010 was isolated specifically to the South Kitsap community level. There was a limited amount of data on the specific subject of fire or burn injuries that involved

the coroner's office; therefore, the data provided included a larger range of issues broader than the specific topic of this ARP on fire and burn problems. Preventable deaths from causes that could be addressed with a risk reduction program were identified through a filtering process of data available in Appendix B. The Kitsap County Coroner's information identified the five leading causes of preventable deaths in the South Kitsap community for all age groups to be, (a) suicide, (b) drugs and alcohol, (c) motor vehicle collisions, (d) falls, and (e) trauma.

Fire and burn fatalities identified by the Kitsap County Coroner's office in the South Kitsap community during the 2008 thru 2010 time frame were limited to one male in the 55 to 72 age range. This individual died in 2009 during a house fire from asphyxia and inhalation of combustible materials. He was 59 years of age. A complete listing of preventable deaths for all age ranges that occurred in the South Kitsap community during the 2008 through 2010 years is shown in *Table 1*.

Table 1

Coroner Death Investigation SKFR 2008-2010						
Category	Gender	Age Group				
		0-18	19-36	37-54	55-72	73-90
Suicide (Total 21)						
Male	10		4	2	2	2
Female	11	1	2	7		1
Drug/ETOH (Total 19)						
Male	10		5	4	1	
Female	9		2	4	3	
MVC (Total 8)						
Male	4		2	2		
Female	4			1	3	
Fall (Total 4)						
Male	1					1
Female	3					3
Trauma (Total 3)						
Male	2				1	1
Female	1				1	
CO (Total 1)						
Male	1			1		
Female	0					
Fire (Total 1)						
Male	1				1	
Female	0					
Hypothermia (Total 1)						
Male	1		1			
Female	0					
MV/Pedestrian (Total 1)						
Male	0					
Female	1					1
SIDS (Total 1)						
Male	1	1				
Female	0					
Total 60		2	16	21	12	9

The data provided by Safe Kids Kitsap divided their information into nonfatal injuries that required hospitalization and injury deaths that occurred in Kitsap County to children ages

newborn to eighteen years (Appendix C). The data had a date range of 2005 through 2009. It should be noted that the Safe Kids Kitsap's data included an all inclusive report of accidents that affected the population group and it exceeded the scope of the specific fire and burn problem topic of this ARP. The report also covered Kitsap County as a whole and could not be broken down to reflect the specific South Kitsap community. In both the nonfatal injuries that required hospitalization and the injuries that resulted in deaths, fire/burn related incidents ranked fourth. The data also divided the age range for children experiencing both the nonfatal injuries requiring hospitalization and the injuries that resulted in deaths into five age groups: less than one, one to four, five to nine, ten to fifteen, and fifteen to seventeen. The nonfatal fire and burn injuries that required hospitalization reported injuries in all five age groups with ages one to four receiving the overwhelming majority at 64% or 27 of the 42 fire/burn injuries reported. In the incidents that resulted in deaths from fire and burns only three were reported in the five year date range with 100% occurring in the five to nine age ranges. One limitation that should be mentioned is Safe Kids Kitsap was unable to separate or break down the data into reporting for specific types of fire/burn injuries for further study. *Table 2* provides the top risk areas identified by Safe Kids Kitsap for all risk types reported.

Table 2

Safe Kids Kitsap Top Risk Areas	
Fatalities	Hospitalization
Motor Vehicle	Falls
Suffocation	Motor Vehicle
Drowning	Stuck by/against
Fire & Burns	Fire & Burns
Stuck by/against	Poisonings

SKFR internal data study conducted from the ERS data base resulted in the most specific break down of the fire problem in the South Kitsap community (Appendix E). SKFR ERS fire data was sorted to define the five most common types of fires experienced over the 2008 through 2010 time frame. The three year date range was selected due to the limited amount of data available in any given one year time frame. This fire data reflects the investigations completed at the company or battalion level officer by SKFR personnel and the more specific and detailed information forwarded to SKFR following investigations conducted by the KCFMO. The five leading reported types of fire incidents in 2008 through 2010 were (a) building, (b) natural vegetation, (c) passenger vehicle, (d) chimney or flue, and (e) cooking, in the South Kitsap community. Overall the numbers of fire incidents reported, percentages of totals and the National Fire Incident Reporting System (NFIRS) code groupings are included in *Table 3.*

Table 3

Top Five Fire Incident Types 2008 - 2010		
Incident Type	Total	% of Total
111 - Building fire	120	29%
140 - Natural vegetation fire, other	113	27%
131 - Passenger vehicle fire	90	22%
114 - Chimney or flue fire, confined to chimney or flue	50	13%
113 - Cooking fire, confined to container	38	9%
Total	411	100%

Once identified, these five fire incident types were studied and broken down further into the top five unintentional heat sources and factors contributing to ignition. This process allowed for more thorough identification of what the South Kitsap community's issues were in these areas. This further breakdown required both the use of NIFRS codes and the reading of individual narratives in each incident report to fully understand the issue at a level that was

definable and potentially teachable for a community risk reduction program. With the building fire data presented in *Table 4,* the storage of combustibles too near heat sources is an identified issue as are abandoned or discarded hot embers or ash often associated with chimney and fireplace operations and cleaning. Also identified as a problem area, is the proper use and disposal of cigarettes or smoking material and electrical equipment being overloaded or used inappropriately.

Table 4

Building Fires		
Total	Code	Heat Source (Top 5)
36	12	Radiated or conducted heat from operating equipment
22	13	Electrical arcing
12	43	Hot ember or ash
9	61	Cigarette
8	65	Lighter: cigarette, cigar
Total	Code	Factors Contributing to Ignition (Top 5)
14	12	Heat source too close to combustibles.
12	30	Electrical failure, malfunction, other
10	11	Abandoned or discarded materials or products
7	10	Misuse of material or product, other
7	34	Unspecified short-circuit arc

Natural vegetation fire data presented in *Table 5* identifies abandoned or discarded cigarettes as a significant fire cause as well as unattended or outdoor burns that were not completely extinguished. Playing with heat sources and fireworks also provided for a seasonal issue in this area.

Table 5

Natural Vegetation Fires		
Total	Code	Heat Source (Top 5)
23	61	Cigarette
8	43	Hot ember or ash
9	54	Fireworks
4	72	Spontaneous combustion, chemical reaction
4	65	Lighter: cigarette, cigar
Total	Code	Factors Contributing to Ignition (Top 5)
23	11	Abandoned or discarded materials or products
11	60	Natural condition, other
9	19	Playing with heat source
6	73	Outside/open fire for debris or waste disposal
2	72	Rekindle

Vehicle fire data presented in *Table 6* identifies heat from the normal operation of the vehicle or electrical issues as the leading heat source and a common contributing factor being mechanical malfunction and leak or break.

Table 6

Vehicle Fires		
Total	Code	Heat Source (Top 5)
23	12	Radiated or conducted heat from operating equipment
8	13	Electrical arcing
6	11	Spark, ember, or flame from operating equipment
6	41	Heat, spark from friction
4	68	Backfire from internal combustion engine
Total	Code	Factors Contributing to Ignition (Top 5)
22	20	Mechanical failure, malfunction, other
7	23	Leak or break
6	26	Backfire
5	34	Unspecified short-circuit arc
4	30	Electrical failure, malfunction, other

Chimney fire data in *Table 7* identifies the majority of chimney fires reported heat from direct flame, hot embers or ash as the common heat source. This heat source often was associated with normal operations of the appliance during use. The contributing factors data found the failure to properly maintain and clean the appliance or chimney as the most common reason for chimney fires to occur. Another contributing factor at a lesser level involved operational deficiency or misuse of materials involved with appliance use.

Table 7

Chimney Fires		
Total	Code	Heat Source (Top 5)
14	81	Heat from direct flame, convection currents
11	43	Hot ember or ash
6	42	Molten, hot material
5	11	Spark, ember, or flame from operating equipment
4	60	Heat from other open flame or smoking materials, other
Total	Code	Factors Contributing to Ignition (Top 5)
26	55	Failure to clean
2	50	Operational deficiency, other
2	10	Misuse of material or product, other
2	70	Fire spread or control, other
1	12	Heat source too close to combustibles

Cooking fire data in *Table 8* identifies the most common heat source being radiated or conducted heat from properly operating equipment during normal use. The contributing factors identifies unattended cooking and abandoned materials as well as having combustibles too near the heat source.

Table 8

Cooking Fires		
Total	Code	Heat Source (Top 5)
20	12	Radiated or conducted heat from operating equipment
5	42	Molten, hot material
3	11	Spark, ember, or flame from operating equipment
2	81	Heat from direct flame, convection currents
1	43	Hot ember or ash
Total	Code	Factors Contributing to Ignition (Top 5)
8	53	Equipment unattended
6	12	Heat source too close to combustibles.
5	11	Abandoned or discarded materials or products
3	52	Accidentally turned on, not turned off
3	55	Failure to clean

The SKFR ERS data study also involved a study of the Patient Care Reports (PCR) and fire reports that had associated burns involved for the 2008 through 2010 time period. The intent of the PCR and fire reports study was to identify medical responses involving burn injuries in the SKFR community. The numbers of responses in this area were limited during the three year period and the nature and severity of injury was considered as the data was analyzed to determine the leading causes (Appendix F). The five leading causes of burn related injuries were (a) scalding, (b) grease fire, (c) explosions using gasoline, (d) contact with hot objects, and (e) fire works. Patient age and gender were also considered in the process of determining the burn information for the South Kitsap community.

Table 9

Top Five Patient Burns SKFR 2008-2010						
Category	Gender	Age Group				
		0-18	19-36	37-54	55-72	73-90
Scalding (Total 10)						
Male	6	3	1	1	1	
Female	4	2		1	1	
Grease Fire (Total 7)						
Male	5	2	3			
Female	2	1	1			
Explosion using Gas (Total 6)						
Male	6	2	2	2		
Female	0					
Contact with Hot Object (Total 4)						
Male	1	1				
Female	3	3				
Fireworks (Total 3)						
Male	2	1	1			
Female	1	1				
Totals 30		16	8	4	2	0

How does the SKFR School Fire Safety Education Program and the South Kitsap community fire and burn problem compare?

The answer for the third research question required a comparison of the results from questions one and two of this ARP. A direct comparison of what was taught in the SKFR School Fire Safety Education Program over the past three years to what the identified risk experienced in the South Kitsap community during that time frame was completed. During the 2008 through 2010 time frame, SKFR primarily followed the NFPA Fire Prevention Week message for the central topic of the SKFR School Fire Safety Education program presentations delivered to the SKSD. Topics included stay fire smart, prevent home fires, and smoke alarms; a sound you can live with. Outside of the specific NFPA message, SKFR also covered or touched on a random

number of fire or safety topics during the presentations. These included a) calling 911, (b) tools vs. toys, (c) playing with lighters and matches around gas, (d) fireworks, (e) feeling doors and exiting out windows, (f) hazards of disabling smoke alarms, (h) helmet safety, and (i) water safety.

The data used from the SKFR ERS study showed the leading causes of building fires in the South Kitsap community during the 2008 through 2010 time frame were storage of combustibles too near a heat source, improper discarding of hot embers or ashes, and improper use or discarding of smoking materials. During the same period, the leading causes of burn injuries in the South Kitsap community were scalds, grease fires, and explosions involving gasoline. During this same time frame several significant contributing factors for fires other than building fires included; unattended cooking, chimney maintenance, and natural vegetation fires caused by cigarettes or improper outdoor burning. These findings did not align with the messages taught in the SKFR School Fire Safety Education program for the same time period in a structured or purposeful way. The instruction provided in the SKSD presentations from the NFPA messages on stay fire smart and prevent home fires did touch on the issue of proper storage of combustibles and proper use and discard of smoking materials in a general manner which relates indirectly to several of the identified risks experienced in the South Kitsap community. The instruction given on the non NFPA topic of playing with lighters and matches around gas also touched on one of the identified burn risks from the SKFR ERS data.

What can be done to align the SKFR School Fire Safety Education Program and the South Kitsap community fire and burn problem?

The answers from the interviews conducted with SKFR personnel M. Wernet and G. Rogers, provided the results for the fourth research question. Specifically questions 5, 10, 11, 15, 16, 17, and 19, of the interview questions were directed towards this ARP question.

Both members interviewed confirmed that the topics covered and the programs delivered through the SKFR School Fire Safety Education Program have not received any direct or purposeful alignment with the fire and burn problems experienced in the South Kitsap community. It was generally believed that the NFPA generic message was close enough for a jurisdiction that reflected a "typical" suburban middle class community. During the past five years, support and positive feedback from the SKSD has also helped give the program a feeling of success.

In order for any program to be aligned with the problems experienced in the community, a method for identification of the problems must be developed. The information needed to determine the SKFR community fire and burn problem each year is available through agency records and documented in the ERS program. A data sorting method and reports that would allow the major issues experienced in the past year or group of years in regard to fire cause and burn injuries within the South Kitsap community would need to be developed. Much of this work was completed in the development of this ARP. An annual report of the top ranked issues would identify and clarify what the problems are that need to be addressed through the SKFR School Fire Safety Education Program. Both interviewees agreed that identification of the problems experienced in the South Kitsap community has to be accomplished in order for any education program to align with and target the problems affecting the citizens of the community.

Once the South Kitsap community risks are determined and identified as curriculum objectives, the SKFR School Fire Safety Education Program can target them with their yearly

message. In order for programs and curriculum to be developed that aligns with the risks experienced in the South Kitsap community, it would be beneficial for the risks to be identified early in the year to allow time for curriculum development. SKSD has been helpful in supporting the SKFR programs and could be included in program development directed towards identified risks. Each year the SKSD holds a senior staff meeting in September to address the upcoming school year events. For the past five years SKFR has been invited to and attended this planning meeting to schedule the yearly SKFR School Fire Safety Education Program. This group has offered to assist SKFR with the program in the past and could be approached earlier in the year with the identified risks from SKFR's data report. SKSD has personnel available who are subject matter experts in age appropriate curriculum development. One possible way to align the identified South Kitsap community risks with the fire prevention message would be to develop a partnership with the SKSD in this area (M. Wernet, personal communication, June 13, 2011).

Working with the SKSD on program delivery and curriculum that targets specific objectives would also allow SKFR and the SKSD curriculum developers to address age appropriate curriculum. Instruction at the elementary school level could be broken down to address the specific grades or class sizes currently being taught in the group settings.

Once the risks are identified SKFR also has the ability to research and develop new instructional areas that would align the risks with the prevention and education programs outside of the October Fire Safety Week presentations. There are numerous resources available through the NFPA and the NFA that would assist SKFR in this area. All or parts of these available resources could be utilized to meet the specific needs of the identified objectives for instruction.

Discussion

The results of this ARP correlated with the information gained in the literature review and provided information to assist SKFR with improvements to the SKFR School Fire Safety Education Program. The research conducted for this ARP determined that SKFR had not been conducting an adequate risk analysis to determine the actual problems experienced in the South Kitsap community based on data or historical information. Without a community oriented risk assessment and identification process, instruction presented in the SKFR School Fire Safety Education Program was not as specific as it could have been. A needs assessment has to be accomplished early in any program development to determine what the "gap" is between current realty and the desired knowledge, skills, or actions (Gupta, 1999, Chapter 1). At SKFR for any fire or safety instruction to be meaningful and effective, it has to be driven by learning objectives that mitigate the actual identified risks being experienced in the South Kitsap community.

The focus of this research project was to align the SKFR School Fire Safety Education Program with community risks. A number of organizations have requirements or goals established in this area. The CFAI maintains several performance indicators directing agencies towards this goal. The importance of identifying community risks and developing and providing education to help reduce or mitigate these risks is well documented in the accreditation requirements (CFAI, 2006, p. 83). The USFA, in the second step of their community risk reduction model also identifies the importance of analyzing the community to determine experienced risks and then establishes program priorities based on the rating of the risks (NFA, 2011, p. SM 1-6).

In determining what KSA are being taught in the SKFR School Fire Safety Education Program today, interviews with SKFR managers identified an active yearly program that was

well supported by the administrative staff and the line personnel involved with the majority of the program delivery. At the audience level comparable support for the program exists at the SKSD, from the administration down to the individual school and teacher level. Although it was noted that even with 100% involvement from the 10 SKSD elementary schools who receive the annual program, there are a number of schools who consistently receive a higher return on the post presentation home work and handouts (M. Wernet, 2011). This positive relationship between SKFR and the SKSD, and their willingness to work together is a strength that can be capitalized on as the SKFR School Fire Safety Education Program is improved and expanded in the future. Many of the key components of networking, forming coalitions, and working together towards a common goal are present and required for a program to have the greatest level of success (IFSTA, 1997, Chapter 12).

The SKFR School Fire Safety Education Program has generally followed the NFPA Yearly Fire Prevention message as its primary topic covered during the annual school presentations each October. These topics presented in the group assembly setting have had positive reviews from the SKSD and audiences, yet cover topics at a somewhat generic level not specifically related to any identified community risk. Each year, beyond the general NFPA topic, SKFR has added parts and pieces from other established curriculum or messages to fill out the presentation time. These topics have been picked randomly using the creative brainstorming of the SKFR membership as to how best present the topic in a fun and interesting manner. These non NFPA yearly topics had established messages and topics that related to fire and life safety, although they were not selected to address an identified community risk.

SKFR should consider the pros and cons of expanding the program delivery in order to better meet the specific needs of different student age groups and to more effectively deliver the

message. Age specific messages, smaller class presentation, and identified risk topics all should be considered. Changes in these areas will require time and effort on the part of the SKFR staff and commitment from the SKSD in regards to student contact times and scheduling. The NFPA recognizes that in order for a public education program to have the greatest chance of success, consideration should be given to a number of issues relating to audience needs and lesson content. Student age, educational and cultural backgrounds, physical ability, and emotional characteristics as well as lesson length and class size each have a part (NFPA, 2009, appendix.A.6.4.4). The research conducted for this ARP identified the SKFR School Fire Safety Education Program as somewhat basic in design and general in the topics presented in a large group setting. Taking this program to a more specific level to better meet the student's needs and provide instruction in risk reduction that relates to identified community risks will require changes and cooperation from both the SKFR and the SKSD.

To identify what the current problems or risks are for the citizens of the South Kitsap community required a comprehensive gathering, breakdown, and studying of historical data available from a number of different sources. With this completed and reported on previously in the finding portion of this ARP, SKFR has the ability with future program delivery to develop or adapt curriculum that is directed towards the identified community risks annually. The instructional design process involves several steps including; who the program is for, what they are to learn, how the content would be best learned, and how to determine if the instruction accomplished the goal (Morrison et al., 2004, p. 7). Any curriculum development has to start with instructional objectives and these should be determined in the case of the SKFR School Fire and Safety Education Program by the identified risks experienced in the community. Without

instructional objectives, appropriate instruction can not be developed or any results evaluated as to program output (Morrison et al., 2004, p. 108).

Addressing how the SKFR School Fire Safety Education Program delivery differed from or matched the community fire and burn problem during past presentations varied by year. It was identified by this researcher that although SKFR's best intent was to instruct on relevant and timely fire and safety related topics, no direct correlation has been used to align this instruction to community risks. The general NFPA topics covered in the past Fire Prevention Week presentations worked well in sharing information about topics that could be reasonably expected to occur in any average American community, much like South Kitsap could be considered one of. Likewise, many of the additional program messages delivered outside of the NFPA messages in the past reflected individual's thoughts or experienced risks the SKFR members may have seen or experienced during performance of duties as a suppression firefighter or officer.
In order for the SKFR School Fire Safety Education Program to be as efficient as possible and communicate a desired message during the limited student and public contact time, the presentations must be structured with known learning objectives and tailored to target specific community risks.

In order for SKFR to better align its fire safety message with the actual community fire and burn problems, several changes could be made in regards to how the SKFR membership present, understand, and share information about the risks experienced in the South Kitsap community. SKFR has not fully capitalized on opportunities to reach its citizens with a defined fire prevention message. There exists a need to educate and engage all SKFR members with not only the identified risk experienced in the community annually, but also the needed information and tools to share this information with the public at every available opportunity. Station tours

and apparatus visits have often provided more of a public relations message than a structured education message. SKFR should develop an informed and educated workforce on the risks experienced in the community. This would allow for prevention messages to be shared throughout the year in many different scenarios often with individuals or select portions of groups such as the adults attending a station tour with a school group. Providing a tailored prevention message for specific identified risks and engaging different groups with both messages and material to help create awareness of the identified risk should be a goal with each and every community member who SKFR personnel have an opportunity to contact (Jones and Bartlett Publishers, LLC , 2009, Chapter 35).

SKFR has not been teaching fire or burn injury prevention based on the identified leading risk factors experienced in the South Kitsap community. Although SKFR has presented a well received prevention program to the community through the SKFR School Fire Safety Education Program, station tours, and apparatus visits; these have only delivered a modest amount of specific fire safety education and the program has not established a proactive fire and safety education message driven by identified community risks. The information gained during the development of this ARP along with the risk assessment data processes developed will allow SKFR to implement positive changes and adjustments to its current program that will align the fire prevention and safety messages with defined community risks.

Recommendations

The research conducted for this ARP has identified a number of program changes or improvements that can be made to the SKFR School Fire Safety Education Program. These changes would help to align the fire prevention messages provided by SKFR with community risks. In addition to the specific topic of this ARP on aligning fire prevention messages with

risks, this research also identified several potential areas to expand and improve the overall SKFR fire prevention education delivery throughout the agency and community. Based on the information gathered for this ARP, the author recommends the following points of consideration for improvements to the SKFR School Fire Safety Education Programs:

1. Develop and institutionalize a data reporting method into the yearly work routine that defines the specific risks that have impacted the SKFR community in the past year. This report and its identified topics should become incorporated into the SKFR fire prevention messages for the coming year. In order to accomplish this report on an annual basis, refinement of the processes utilized in this ARP research will need to be reviewed and placed into SKFR's policy and procedure. This will require continued focus on quality data entry in the ERS, data filtering, and queries being utilized on an annual basis to create a consistent historical review of losses, accidents, and injuries experienced in the SKFR community. The top identified risks should become the foundation for curriculum and community education throughout SKFR. Creation of this report should be accomplished early in the calendar year, preferably in the first quarter, in order for this information to be effectively incorporated into the summer and fall prevention and education activities and allow maximum time for planning and lesson development.

2. Production of an annual list of the identified risks experienced in the SKFR community would allow development of curriculum for delivery in the SKFR School Fire Safety Education Program that targets these risks. With the positive relationship between SKFR and the SKSD, assistance should be sought from the SKSD annually to produce curriculum that would provide age appropriate instruction targeting risk reduction efforts for the identified risks experienced in the South Kitsap community. Depending on the risks being targeted in any given year, development of new specific curriculum may be required or a combination of curriculum already

available on the subject could be adopted. In either case, assistance from the subject matter experts in the curriculum development and education field available through the SKSD should be used if available. Production of the SKFR annual risk list early in the year would allow this issue to be brought to the SKSD in the springtime before the summer break that leads to a compressed schedule in September each year as the new school year begins. Having the topics identified and curriculum developed earlier in the year would allow additional time to refine instructional objectives and plan for the October delivery. SKFR's current practice of using the NFPA annual message during the October Fire Prevention Week presentations may still be practical and have value at a general level. A combination of messages may be utilized for delivery depending on the specific risks being targeted with the instruction.

3. SKFR has an opportunity to expand its School Fire Safety Education Program beyond its current scope. One area where need and opportunity currently exists is with the many preschools located in the South Kitsap community. Historically, these small private organizations interact with SKFR primarily through self scheduled fire station tours on a yearly or twice yearly basis. Each year numerous preschool groups come to SKFR stations for tours and equipment displays. Contacts with these groups could be expanded on with a more structured program targeting identified risks. There are preschool level programs currently available that could be used to enhance these tours and deliver education relating to risk for this age group. SKFR prevention personnel could work with the South Kitsap preschools before the tours with basic information and materials for the teachers to instruct. Once this class curriculum is delivered by the preschool staff, station tours could be scheduled and SKFR staff could build on the curriculum previously taught in the classroom setting. Research and data from this ARP indicates that there is a need for preventative education in this younger age group. Development

of a program utilizing already established relationships, preschool teaching staff, available low cost instructional materials, and fire station tours would increase the scope of the SKFR Fire Safety Education Program delivered to the community.

4. SKFR has many opportunities to make citizen contact through normal daily business activities. The development of an agency-wide awareness of the SKFR community fire and burn problem would allow for a more consistent and appropriate message delivery. Once SKFR has identified the yearly risks experienced in the South Kitsap community, processes should be implemented to develop the workforce with a general understanding of the problems. This would allow for a targeted and consistent message to be delivered through semi-formal delivery throughout the year by the SKFR membership. Creation of a fire safety and identified risks area on the SKFR intranet under the prevention tab would place the information in a readily available location for all SKFR members to access. In this area, the top risks could be listed along with basic curriculum about how to talk or teach about the topic. SKFR should strive to create a workforce at all levels that have a general awareness of the risks experienced in the community and how to help mitigate the issues. A drop down menu could contain the following types of information: (a) top risks identified, (b) instructional materials related to the identified risks, (c) age appropriate teaching points and techniques, and (d) printable handouts for distribution. This information would allow every SKFR member to maintain a professional awareness of the South Kitsap community risks and what can be done to reduce them. Each time a firefighter is instructing a group or giving a station or equipment tour, the company officer or other crew members may have opportunity to touch on risk reduction issues with the parents or leaders of the group. Developing an informed workforce with risk reduction information at all levels in the agency should be a goal for SKFR.

5. The research and data for this ARP identified the need to expand SKFR's current School Fire Safety Education Program to include all risk topics. The SKFR community fire and burn problems relate back to causative factors, many of which can be reduced or eliminated through education programs. Beyond the fire and burn problems researched for this ARP were a number of risks identified that caused losses to the citizens of the South Kitsap community. Addressing all the risk types identified in the annual data risk assessment with the prevention programs offered at SKFR should become standard practice for the agency. Currently this is done with a loosely structured approach. Areas identified in the annual risk assessment where messages and education could be developed include: (a) bike safety and helmet use, (b) life jackets and water safety, (c) suicide prevention, (d) seat belt use, (e) child car seat use, (f) firearms safety, (g) child care safety, and (h) fall prevention. Building relationships and developing shared approaches on these non fire and burn risks within the community should be considered. Groups such as Safe Kids Kitsap and many local hospitals have programs SKFR could partner and participate with in shared programs.

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Appendix A

Structured interview questions internal interviews.

The intention of this interview process is to gain information and insight from the Public Education Program Manager and personnel from the Fire Prevention Division at SKFR. Specific information relating to research questions one and four for this ARP listed below is the focus of this interview.

1. What are the knowledge, skills and abilities delivered in the SKFR School Fire Safety Education Program today?

4. What can be done to align the SKFR School Fire Safety Education Program with the South Kitsap community fire and burn problem?

Person interviewed: _____

1. What has been your personal involvement with the SKFR School Fire Safety Education Program?

2. Give a general overview of what the SKFR School Fire Safety Education Program has been during your involvement.

3. What has been the process for selecting specific program topics for each year's delivery?

4. Has any use of fire and burn data been included in program development? If so, what method was used to gather and incorporate it into the lesson development?

5. Has there been any method used to determine if any of the education presented related to the actual risks experienced in the South Kitsap community?

6. What is the sequencing of activities used to put the yearly school fire safety plan together?

7. Are yearly program objectives developed and presented to the fire prevention staff and instructors?

8. During the past five years, what have been the subjects taught in the SKFR School Fire Safety Education Program?

9. Have any specific knowledge skills and abilities been targeted or delivered in the past programs? If so, how were they determined?

10. How have the student audiences been selected who receive the program delivery?

11. What factors have gone into the program delivery in relation to group size and lesson length?

12. How have the SKFR personnel who deliver the School Fire Safety Education Program been selected?

13. Have there been any team requirements or prerequisites?

14. Has any training or education been provided or required for the personnel involved with program delivery?

15. Describe your experiences with the SKSD and the relationship they have with SKFR relating to the School Fire Safety Education Program.

16. Is the SKSD involved in the yearly planning process as it relates to lesson content, delivery and appropriateness for the selected audience?

17. Do you think SKSD would be interested in helping SKFR develop specific lessons relating to community needs in the area of fire safety education?

18. Has there been any evaluation completed on the impacts of the programs delivered?

19. What obstacles to future program improvements or success do you currently feel exist?

20. Do you have anything else to add on this issue that was not already covered?

Appendix B

Kitsap County Coroner Death Investigations							
Case #	Date Reported	Manner of Death	Age	M / F	Category	Cause of Death	Investigation Cause
330	02/28/09	Accident	51	M	CO	Carbon Monoxide Intoxication	Carbon monoxide
110	01/19/08	Undetermined	26	F	Drug/ ETOH	Acute Morphine Intoxication	Drugs
1838	12/07/09	Accident	32	F	Drug/ ETOH	Multiple Acute Drug Intoxication	Drugs
1324	09/01/08	Accident	41	F	Drug/ ETOH	Acute Drug Intoxication (Methadone and Paroxetine)	Drugs
1753	11/22/09	Accident	46	F	Drug/ ETOH	Multiple Acute Drug Intoxicate (Codine, Quetiapine)	Drugs
1656	11/02/08	Undetermined	51	F	Drug/ ETOH	Acute Opiate Intoxication	Drugs
1124	07/19/08	Accident	54	F	Drug/ ETOH	Acute Opiate Intoxication and Multiple Addictive Drug Effects	Drugs
1364	09/09/08	Accident	61	F	Drug/ ETOH	Subacute Bacterial Endocarditis With Congestive Heart Failure	Drugs
1946	12/31/10	Accident	62	F	Drug/ ETOH	Multiple Acute Drug Intoxication	Drugs
1676	11/06/08	Accident	68	F	Drug/ ETOH	Acute Fentanyl Intoxication	
216	02/07/08	Accident	21	M	Drug/ ETOH	Probable OD	Drugs
1060	07/07/08	Accident	29	M	Drug/ ETOH	Acute Methadone Intoxication	Drugs
1740	11/20/09	Accident	32	M	Drug/ ETOH	Multiple Acute Drug Intoxication	Drugs
56	01/10/10	Undetermined	32	M	Drug/ ETOH	Acute Drug (Heroin) Intoxication	Drugs
196	02/04/08	Undetermined	34	M	Drug/ ETOH	Acute Methadone Intoxication	
1060	07/17/10	Accident	37	M	Drug/ ETOH	OD	OD
1674	11/09/09	Undetermined	40	M	Drug/ ETOH	Multiple Acute Drug Intoxication (Dephenhydramine, Tramadol, Doxepin, Sertraline)	Other, Multiple Acute Drug Intoxication
1859	12/13/08	Accident	44	M	Drug/ ETOH	Probable Positional Asphyxia / Acute Ethanol Intoxication	Drugs
1935	12/28/10	Accident	45	M	Drug/ ETOH	Positional Asphyxia second to ETOH consumption	Drugs
734	05/14/10	Undetermined	62	M	Drug/ ETOH	Multiple Acute Drug Intoxication (Cocaine Meth, Fentanyl, Oxycodone)	Drugs
677	05/03/10	Accident	84	F	Fall	Myocardial Infarction	
235	02/11/08	Accident	89	F	Fall	Pneumonia, Right Hip Fracture	Fall, ground level

1582	10/26/10	Accident	94	F	Fall	Delerium Secondary to Hospitalization; Osteoporosis With Compressed Fractures;	Hypertension
597	04/14/08	Accident	90	M	Fall	Subderal Hematoma	
548	04/08/09	Accident	59	M	Fire	Asphyxia, Inhalation of Toxic Combustible Materials	Fire/burns - died as result of fire
1883	12/17/08	Accident	36	M	Hypotherm	Probable Hypothermia (mental condition)	Found outside in snow in shorts
1162	07/28/08	Traffic	83	F	MV/ Pedestrian	Failure to Thrive, Second to Head Injuries	Pedestrian
1256	08/22/09	Traffic	51	F	MVC	Multiple Blunt Force Trauma to Head, Neck & Torso	
1651	11/01/08	Traffic	55	F	MVC	Blunt Force Trauma	Automobile Driver, restrained
1366	09/10/08	Accident	57	F	MVC	Blunt Force Injuries to Head and Neck	
318	02/28/10	Accident	57	F	MVC	Multiple Blunt Force Injuries to the Head, Neck, and Chest	
1622	11/01/09	Traffic	23	M	MVC	Multiple Blunt Force Injuries to Head, Neck & Torso	Automobile, Driver, restrained
747	05/13/09	Undetermined	24	M	MVC	Multiple Blunt Force Injuries	
399	03/14/10	Traffic	39	M	MVC	Blunt force trauma to head, neck and chest	
482	03/29/09	Traffic	43	M	MVC	Multiple Blunt Force Injuries to Head & Neck	Automobile Driver, restrained
1286	08/28/09	Undetermined	2 mo.	M	SIDS	Sudden Unexplained Death In Infancy, Cause Unknown	
610	04/19/09	Undetermined	15	F	Suicide	Acute Ethanol Intoxication	
1	01/01/08	Suicide	26	F	Suicide	Gunshot Wound to the Head	Gunshot wound(s)
1279	08/28/09	Undetermined	29	F	Suicide	Penetrating Loose Gunshot Wound to the Head Neck	Drugs
132	01/25/10	Suicide	40	F	Suicide	GSW Head	GSW Head
1690	11/09/08	Suicide	45	F	Suicide	Penetrating Contact Gunshot Wound to the Head	
770	05/16/09	Suicide	46	F	Suicide	Multiple Acute Drug Intoxication (Tramadol and Citzlopram)	Drugs
1122	07/26/09	Suicide	50	F	Suicide	Multiple Acute Drug Overdose	Acute Drug Intoxication
1243	08/14/08	Suicide	52	F	Suicide	Multiple Acute Drug Intoxication (Fluuxetine and Opiate)	Drugs
1583	10/19/08	Suicide	52	F	Suicide	Perforating Contact Gunshot Wound to the Head	Gunshot wound(s)
1632	11/03/09	Suicide	54	F	Suicide	GSWH	Drugs
990	07/03/10	Suicide	83	F	Suicide	Gunshot wound to chest	
654	04/27/09	Suicide	19	M	Suicide	Cerebral Anoxia - Asphyxiation	Hanging
753	05/18/10	Suicide	22	M	Suicide	Cerebral Anoxia	Hanging
504	04/01/09	Suicide	23	M	Suicide	Penetrating Intra-Oral Contact Gunshot Wound to the Head	Gunshot wound(s)

996	06/23/08	Suicide	26	M	Suicide	Self-Inflicted Gunshot Wound to Head	Self-Inflicted Gunshot Wound to Head
3	01/01/09	Suicide	44	M	Suicide	Cerebral Anoxia by Hanging	Cerebral Annoxia by Hanging
1190	08/11/10	Suicide	47	M	Suicide	Cerebral Anoxia Secondary to Hanging	Hanging
1153	08/04/10	Suicide	56	M	Suicide	Penetrating Contact Gunshot Wound to the Head	Gunshot wound(s)
1301	09/04/10	Suicide	70	M	Suicide	Contact gunshot wound to the head	Gunshot wound(s)
1195	08/09/09	Accident	84	M	Suicide	Failure to Thrive	Penetrating Loose Contact Gunshot Wound
481	03/31/10	Suicide	91	M	Suicide	Severe Thermal Burns	
124	01/24/10	Accident	79	M	Trauma	Hypothermia	Found underneath vehicle after week
1839	12/14/10	Accident	55	F	Trauma	Blunt Force Trauma to the Head, Neck, Chest Traumatic Asphyxia	Tree fell on home (wind storm)
1455	10/03/10	Accident	68	M	Trauma	Probable Positional Asphyxia	Found in car under dashboard

Appendix C

Safe Kids - Top Injuries for Kitsap County Resident Children 0-17: 2005-2009

Nonfatal Injury Hospitalizations						
Count* by Age (Unintended)	< 1	1-4	5-9	10-14	15-17	Total
Falls	11	40	37	51	36	175
Motor vehicle traffic**	-	3	8	10	35	56
Struck by/against	-	11	7	19	15	52
Fire/burn	4	27	3	6	2	42
Poisoning	4	9	3	2	12	30
Pedal-cyclist ^	-	1	6	9	10	26
Bites/Stings	-	5	3	1	2	11
Suffocation & obstructing	1	3	-	1	1	6
Drowning	-	2	2	-	-	4
Firearm	-	-	-	2	1	3

- means there were no hospitalizations, i.e. no rate calculated as rate = 0
*means there were fewer than 5 hospitalizations, i.e. no rate calculated as n<5
**motor vehicle traffic inc. the following categories: occupant, motorcyclist, pedal cyclist, pedestrian
^non motor vehicle related

Count* by Age :	< 1	1-4	5-9	10-14	15-17	Total
Motor vehicle traffic**	-	-	-	3	5	8
Suffocation	8	-	-	-	-	8
Drowning	-	3	1	1	-	5
Fire/burn	-	-	3	-	-	3
Struck by/against	-	-	1	1	-	2
Poisoning	-	1	-	-	-	1
Pedestrian^	-	1	-	-	-	1
Other transportation^	-	1	-	-	-	1

- means there were no deaths
*counts are used for deaths as n is often <5 and therefore no rates can be calculated
**motor vehicle traffic inc. the following categories: occupant, motorcyclist, pedal cyclist, pedestrian; ^non motor vehicle related
note: does not include hospitalizations or deaths of undetermined intent
Source: WA State Department of Health Community Health Assessment Tool (CHAT)

Kitsap County Top Risk Areas

Fatalities	Hospitalizations
Motor Vehicle	Falls
Suffocation	Motor Vehicle
Drowning	Fire
Fire & Burns	Poisonings
	Sports Safety

Appendix D

SKFR Incident #	KC Fire Investigation Report Attached to Incident ☐ Yes ☐ No	
Date of Incident	Time of Incident	
Incident Address		
Property Loss	Contents Loss	Total Square Feet
Pre-Incident Value of Property	Pre-Incident Value of Contents	☐ Spread confined to object of origin
Area of Origin	Heat Source	
Item First Ignited	Type of Material First Ignited	Factors Contributing to Ignition

Human Factors	☐ Asleep	☐ Possibly impaired by alcohol or drugs	☐ Unattended person
	☐ Physically disable	☐ Possibly mentally disabled	☐ Multiple persons involved
	☐ Age was a factor	☐ M ☐ F Age: _____	

Presence of Detectors: ☐ None Present ☐ Present

Type of Detectors: ☐ Smoke ☐ Heat ☐ Combo ☐ Sprinkler ☐ More than one type

Detectors Power Supply: ☐ Battery only ☐ Plug In ☐ Plug in with battery ☐ Mechanical
☐ Hardwire only ☐ Hardwire with battery ☐ Multiple detectors/power supplies

Detectors Operation: ☐ Fire too small to activate ☐ Detector operated ☐ Detector failed to operate

Failure Reason: ☐ Power failure ☐ Improper install/placement ☐ Defective ☐ Lack of maintenance
☐ Battery missing or disconnected ☐ Battery dead

Automatic Extinguishment System (AES) Presence: ☐ None Present ☐ Present ☐ Partial system present

Type of AES: ☐ Wet pipe ☐ Dry pipe ☐ Dry Chem. ☐ Foam ☐ Other _____

AES Operation: ☐ System operated & was effective ☐ System operated & not effective
☐ Fire too small to activate system ☐ System did not operate

List Failure Reason:

Civilian Casualties ☐ Yes ☐ No If yes list Name, Gender and DOB of each Casualty

Fire Service Casualties ☐ Yes ☐ No If yes list Name, Gender and DOB of each Casualty.
Note: Dept accident report must be completed as well.

Notes or Comments:

☐ This form is scanned and attached to SKFR Incident

Person Involved Information can be added to the back of form.

Person 1 - Involvement ☐ Property Owner ☐ Renter ☐ Witness ☐ Suspect ☐ Other _____	
First, Last Name	DOB
☐ Incident Address or list other	
Phone Number ( )	Notes or Comments:
Person 2 - Involvement ☐ Property Owner ☐ Renter ☐ Witness ☐ Suspect ☐ Other _____	
First, Last Name	DOB
☐ Incident Address or list other	
Phone Number ( )	Notes or Comments:
Person 3 - Involvement ☐ Property Owner ☐ Renter ☐ Witness ☐ Suspect ☐ Other _____	
First, Last Name	DOB
☐ Incident Address or list other	
Phone Number ( )	Notes or Comments:
Person 4 - Involvement ☐ Property Owner ☐ Renter ☐ Witness ☐ Suspect ☐ Other _____	
First, Last Name	DOB
☐ Incident Address or list other	
Phone Number ( )	Notes or Comments:
Person 5 - Involvement ☐ Property Owner ☐ Renter ☐ Witness ☐ Suspect ☐ Other _____	
First, Last Name	DOB
☐ Incident Address or list other	
Phone Number ( )	Notes or Comments:
Person 6 - Involvement ☐ Property Owner ☐ Renter ☐ Witness ☐ Suspect ☐ Other _____	
First, Last Name	DOB
☐ Incident Address or list other	
Phone Number ( )	Notes or Comments:

Appendix E

Building Fires							
Incident Number	Year	Heat Source	Area of Fire Origin	Item First Ignited	Cause of Ignition	Factor Cont to Ignition	Narrative
27658	2008	00	72	12	2	12	E14 determined that the fire was out and cancelled all units. TIC to check for any extension, nothing
27323	2008	00	00	UU	3	30	E08 met me at the street indicating they had a small fire in the crawl space, probably from a sump pump.
27756	2010	00	9	13	1	58	Homeowner had a generator running where the exhaust burned a hole in the home's garage door
10432	2008	10	21	81	2	36	Arrived to find E08 and A10 on scene of a fully involved structure with defensive lines being
26133	2009	10	14	20	5	12	A10 arrived first to a fully involved, large residential structure and advised this will be a
27942	2010	10	20	20	2	12	Found a foul smell coming from the interior. He states he went inside and directly to the kitchen area
17197	2009	10	24	20	2	12	Arrived on scene of a single wide mobile home with light smoke showing. There was no life safety and
7905	2010	10	24	UU	2	12	Arrived to find light smoke coming from front door. Occupants stated there were paint cans sitting on the
2821	2009	10	55	64	2	18	BFD responded on a drop borders SFR off Heather Lane - our Rocky Point: Drop Borders now area. E2
25451	2008	10	26	34	3	20	Arrived to find E10, A17 & M14 had established a defensive IAP on a medium size, fully involved
24679	2008	10	47	17	U	30	Arrived on the scene of a single story manufactured home with very light smoke showing. Made contact
3044	2008	10	71	20	5	30	Arrived with E08 & M08 to the C side of a small residential with smoke showing from the roof.
22258	2009	10	74	16	3	30	arrived on scene to find double wide mobile approx. 50% involved. Flames coming from front door and
20879	2009	10	72	32	2	30	DC8 Wright, Toned for RSF, E16 first on with command and offensive fire attack. On DC arrival,
10120	2009	10	26	25	2	50	E2 arrived first to a small, 2 story homes with flames showing, I/I, 360, occupant evacuated, and
8344	2009	10	21	20	2	53	Upon arrival Bremerton 109 in command with E2, E45, E41, E31, M16, M2 on scene. 109 had
30880	2010	10	70	UU	3	53	On arrival found hedge row on fire between property line, on walk around found what was left of
577	2009	10	40	17	2	57	On scene behind A31 to find small out building 75% involved. E31 established command and cancelled
7690	2008	10	21	33	2	58	Arrived third and informed to Park and report by E17 as command. Reported and was advised to pull
9049	2009	10	24	76	2	66	DC8 arrived on scene of a small residence with moderate smoke showing from the front door and
27873	2010	10	43	17	2	UU	E11 arrived first to a residence with fire from the A/B corner and an IAP of I/T, performing a quick
19454	2009	10	UU	99	5	UU	DC8 arrived to find E31 defensive on C side, E17 defensive on A side and E8 laying in a water supply.

29473	2008	10	UU	32	3	UU	Arrived to find single-story SFR with fire showing from the rear of the structure. 803 are on scene and
10092	2009	11	14	17	3	20	DC8 responded to a report of a SFR. Upon arrival E17 in command of a chimney fire. Structure was a
28893	2010	11	47	17	2	23	Arrived: 8010 arrived first and advised fire mostly out, est command, requested by 8010 on arrival pull
2897	2008	11	75	17	3	23	E10 arrived and found masonry chimney boxed in with wood framing smoldering. Owner said
22048	2010	11	24	10	3	33	DC8 arrived right behind E9 who had gone I/P on a small residential structure and was pulling a line to
3679	2009	12	25	18	3	20	E16, and other SKFR and BFD units, called to a possible SFR on "L" street, near National Ave. E16
31296	2010	12	24	76	2	53	Arrived on the scene of a defensive fire declared by first arriving unit. E16 parked and reported to the
23536	2009	12	24	15	2	11	Arrived first and met occupant in front yard who said a heat lamp for her baby ducks fell from it's
3782	2008	12	20	UU	2	12	Arrived with E16 & M08 to find single-story, wood-frame structure that is 90% involved. Garage is not
10780	2009	12	21	70	2	12	Arrived to find fire extinguished and crews checking for extension. E17 in command. Fire appears to
27003	2009	12	24	70	5	12	SFR residential reported as 30x15 foot structure with vehicle inside on fire. On scene to find initial
29994	2008	12	75	17	2	12	Arrived to find a small 1 story house with smoke showing. Plan, I established Cmd and meet occupant
6026	2009	12	80	65	2	12	Arrived behind DC8 and parked until called forward. Assigned to interior to check extension and
14970	2008	12	14	15	3	20	Residential SFR reported as smoke in the structure. On scene of 2-story, medium sized residential with
12852	2010	12	24	26	2	50	E11 was requested via phone call through DC8, to check on a stove fire that was out. RP wanted FD to
26657	2009	12	75	10	2	50	Arrived with E31 to find single-story SFD with light smoke showing through the windows. E31
11490	2010	12	24	76	2	53	L31 Responded to a report of a residential structure fire started in the kitchen. While en route M14
13826	2008	12	24	26	2	53	E16 arrived to find a double wide mobile home with heavy smoke coming from the front windows and
7409	2009	12	20	UU	5	UU	E10 Arrived and found light smoke from attic ridge vent most length of roof line. Mom outside holding
7278	2008	12	75	17	2	UU	Arrived to find fire extinguished, crew's offensive and E31 as IC. Performed 360, house and attic
22274	2010	12	77	10	3	UU	Arrived on scene and E16 had established cmd.E31 was inside extinguishing the fire and checking for
29413	2010	13	71	81	2	33	Arrived to find 2 story wood frame residential structure with heavy fire showing from attached
10315	2009	13	25	10	3	20	Arrived on scene of a large 2-story home with a sub-floor. Heavy fire was showing from floors 1 and 2
5041	2009	13	47	81	2	20	Arrived on scene to a medium split level residential with moderate black smoke showing from the front
7684	2010	13	14	10	2	30	advising house fully involved and evacuated. While enroute, DC8 requested that A17 also respond T17

2424	2010	13	20	25	2	30	E14 arrived first on scene to find a fully involved large barn. Upon approach to the scene the power
22297	2010	13	26	26	2	30	E11 arrived on scene to a two story, two car detached garage with fire from alpha on 1. Heavy
5464	2010	13	43	71	2	30	E16 arrived at park and awaited direction. BFD E2 advised that E16 could go available.E16 available.
25321	2008	13	47	81	3	30	Initially, there was some difficulty finding the address since it was not posted on the street or
30193	2008	13	71	81	2	30	DC8 responded to a report of a SFR in Navy yard city, all occupants out of the structure, structure
24159	2008	13	25	17	3	30	SFR response while returning from a previous SFR, initial RP reports of fully involved and unknown if
27638	2010	13	14	25	2	34	Rp states that he came home and found bedroom full of smoke. He believes it is in the light fixture,
29696	2010	13	21	17	3	34	DC8 responded to a report of a SFR. Upon arrival E11 had established command and assigned E31 to
23943	2010	13	21	81	2	34	Arrived and met by the RP. Who states that she is unaware if anyone is home. 1 car noted in the
12864	2008	13	26	30	3	34	E02 arrived to fully involved SFR. Established command and commenced defensive attack arrived
29349	2010	13	47	16	2	34	Arrived to find medium sized one story house with light smoke coming from foundation vents,E11
10697	2008	13	71	18	2	34	Toned for a SFR with reports of house possibly fully involved, close to a neighbor's house and everyone
27556	2010	13	14	14	2	36	Arrived to find E14, E11 & E17 on scene with fire now out. Lt. Schmidt is Willow Command,
30514	2009	13	72	12	2	54	DC8 arrived to a single story sfr with smoke showing from the eaves and windows. After initial
6525	2009	13	74	81	2	56	E17 was toned for a SFR at 6513 Bethel Rd.E17 arrived and found an abandoned structure with white
27974	2008	13	24	17	5	66	Toned for upgraded call possible residential structure fire. While enroute, Cencom advised fire
17871	2009	13	90	86	3	UU	Arrive to a small residential, fire involved, initiating, and preparing. Meet owners son outside,
12993	2010	13	24	20	5	UU	Arrived first to find occupants out of the residence, light smoke coming from the front door. Initiating
16801	2008	40	24	76	2	10	E10 on the scene 2 story med resident with smoke showing from side C E10 I/I preconnect to side C
27196	2008	40	93	99	2	57	Arrived and assigned to charge hydrant and to report to Command Post. Plan was to report and assigned
4720	2008	42	73	11	2	55	E31 arrived to single family residence structure, lady in front yard saying fire is out. E31 assisted
10430	2008	43	0	21	2	10	E31 is first on the scene of this small single story residential structure with heavy gray smoke showing
24799	2010	43	72	51	2	11	Arrived on scene behind E8 (E31 and E11 on scene) to find a medium sized two story structure with
12256	2009	43	72	96	2	11	E16 arrived to find a 2 story wood structure with brown smoke coming from the 2nd story slider
29471	2008	43	14	14	2	12	Arrived at a medium residential structure, initiating investigating. Light smoke showing from basement

33000	2008	43	47	51	2	20	Arrived to find large 2 story home heavy smoke and fire B/C/D of second story. All occupants stated
26223	2010	43	90	17	3	25	Arrived to find E16 as Viking Command, large SFD with exterior fire in D-side chimney box. Crews
8495	2009	43	75	17	2	42	Arrived on the scene to find small residence with normal smoke coming from chimney. Made contact
1128	2008	43	20	UU	U	55	C8 responded to a report of a SFR in Tri Lakes area. While enroute MC E21 arrived and reported
2270	2009	43	00	UU	2	55	On scene of a double wide mobile home with fire extinguished by crews on scene (E1, E2, M2, A11).
10104	2009	43	20	92	2	57	Arrived on scene of a 2 car detached garage with a carport. The carport was heavily involved and the
7466	2009	43	14	10	0	72	RP stated house fully involved. Secondary info from POPD trees on catching on fire as well.
17717	2008	54	90	47	5	10	Arrived on scene 2-story, split level, light smoke w/ E9 transitional Delta-1.Established Cleveland Cmd.
10795	2008	56	20	UU	5	UU	SKFR responded to McCormick Woods late Sunday night (2200) for a commercial SFR. The
30121	2010	60	24	92	2	14	Arrived to find public restroom facility at Givens Community Center with fire damage at the entry to
7464	2009	60	65	12	1	16	Arriving at the scene found a single story module home with smoke showing through the building.
30730	2008	60	93	96	5	19	Arrived on scene to be met by POPD who has secured and denied scene entry. I was notified by
2501	2008	60	24	76	2	53	E31 arrived on scene and was ordered by DC8 to take a line to the Bravo side floor 2 and make entry
27047	2010	60	75	17	2	55	DC8 responded to a report of a SFC at a quad-plex. Upon arrival occupants had evacuated and
8313	2009	61	20	21	2	10	Arrived on scene with flames through roof on front of residence. Crews making an exterior attack. E11
21945	2009	61	75	17	2	11	SKFR was toned out at approx 1800 to a report of a SFR. While units went enroute CENCOM advised
13039	2010	61	76	22	2	11	Arrived to find smoke in the area; initiating and investigating. Occupants of unit 204 stated they saw
23834	2008	61	76	12	2	11	Arrived to find two-story, residential structure with fire showing exterior and roof of Side C. Occupants
24246	2008	65	21	20	1	19	DC8 assumed Preble St command and had E16 crew come forward with a PPV Fan.E16 arrived at the CP
2322	2009	65	21	34	1	10	Arrived after E31 to find a small one story duplex nothing showing. Plan, made contact w/E31 who
30018	2010	65	72	51	2	11	Dispatched to SFR, arrived on scene, told to P&R per IC. Bremerton FD in control and did not need
14889	2009	65	72	96	2	11	Arrived. Observed a two story medium sized structure with heavy smoke coming from a partially
6109	2009	65	23	63	2	12	Arrived on scene and parked. Was advised per DC 8 to bring manpower forward. Stood by. arriving first
12392	2008	65	25	96	1	19	Arrived on scene with smoke still showing and some flame through the roof. Command was
5941	2009	65	42	34	1	19	Arrived to nothing showing, initiating & investigating. Entry way appears clear with several

6839	2008	66	20	23	2	10	Arrived after M16 who advised fire is out just need PPV to front door. E08 set up fan on side Alpha and
15591	2009	66	20	23	5	11	Update stated fire was out and all units continued until confirmed.E2 and M2 arrived stating fire is out
27742	2010	66	00	92	2	12	To find small outside storage shed fully involved and impinging upon main residence.
27641	2010	66	21	92	2	12	RP/PO reports he smelled smoke within the structure and found a smoldering pile of rags he had
17526	2009	69	94	31	2	10	Arrived behind E08 and found heavy smoke showing side 1st floor center of very wide residence.
18887	2009	70	40	97	U	11	Arrived on scene of a medium split level with light smoke seen from the roof near the wood stove
20824	2009	72	47	97	2	18	Units responded to a 20 by 40 detached garage with smoke showing from eaves and bravo side window.
18657	2008	72	76	65	2	18	Arrived and found flames from Side A 1st & 2nd floors. Initiated cmd Preparing then Transitional
10033	2009	81	75	12	3	25	DC8 arrived first to find as described above and went I/I. 360 showed utility drop but no other
23668	2009	83	47	44	2	57	Advised that A11 was dispatched to a possible suicide attempt that appeared to be escalating in the
1827	2009	UU	21	31	5	16	Arrived to find E31 in command, E16 and E11 attempting to access fire in a metal storage building.
17255	2010	UU	74	17	2	34	E17 arrived first to a small residence with a daylight basement and found most of the fire involvement to
28593	2008	UU	20	14	1	NN	to park and requested to come forward by DC8, now Morgan command. Assigned to expose hot spotsE11
25594	2010	UU	40	UU	5	NN	Upon arrival saw small wooden structure with flames venting on C side. Arrived, initiated and
22288	2009	UU	20	12	5	UU	Arrived first to find a 2 story medium residential home with smoke emitting from the eaves and attic
24630	2008	UU	26	UU	5	UU	Toned for a SFR. M8 arrived first to a medium size two story with an exterior fire on the Charlie side
15821	2008	UU	40	UU	5	UU	Arrived on scene w/3 and was directed by POPD, of a small, 1-story house with a little fire showing from
22129	2009	UU	42	34	5	UU	E10 arrived and reported building fully involved. I dispatched for additional tender (t17) while en route.
17817	2010	UU	76	12	5	UU	Toned to a Structure fire residential in Rocky Point Mobile home park. Initial reports were a fully
5639	2008	UU	76	UU	5	UU	Arrived on the scene, parked and reported forward with manpower. Fire was in a defensive mode at this
8812	2008	UU	UU	UU	2	UU	E10 arrived and reported building fully involved. I dispatched for additional tender (t17) while en route.
18485	2009	UU	14	UU	5	UU	Toned to a Structure fire residential in Rocky Point Mobile home park. Initial reports were a fully
5824	2008	UU	UU	UU	5	UU	Arrived on the scene, parked and reported forward with manpower. Fire was in a defensive mode at this

Total 120

Natural Vegetation Fires							
Incident Number	Year	Heat Source	Area of Fire Origin	Item First Ignited	Cause of Ignition	Factor Cont to Ignition	Narrative
19488	2010	12	UU	UU	2	20	Dispatched to a 20' x 20' brush fire. Upon arrival we found a 20 x 30 brush fire with 3 men attempting to
20556	2010	13	94	72	2	33	toned for a brush fire approx 2 acres involved. E17 while enroute had E31 to respond and pickup T17. E17
20317	2009	13	00	73	4	60	Requested by PSE to return to previous scene for tree on fire in wires On scene with PSE to find tree in to
21567	2009	40	94	72	2	70	on the scene of a 100 x 50 grass fire /brush fire mostly smoldering with the P/O applying water from a garden
13828	2009	42	90	99	2	13	Arrived to find a 20 x 20 slow moving rubbish/wildland fire. Pulled a 1 inch forestry hose and extinguished with
17914	2010	43	94	70	2	11	smoldering beauty bark in the parking lot of Penn. Subaru. E16 arrived on scene to find a 2x2 smoldering
18651	2008	43	95	72	2	11	Arrived to find a 20' x 20' slow moving brush fire apx 30' from a single family home.1-3/4 preconnect pulled
24820	2009	43	94	72	2	11	E16 was toned for a brush fire in the area of the above address. arrived to find a composite pile that was
20010	2009	43	94	72	2	11	Arrived to find a 50' by 50' grass fire spreading slowly. Owner stated he was trying to burn out an ant hill by
16086	2009	43	94	72	2	73	Arrived to find an approx. 20' by 40' burn in light vegetation on a steep hillside moving slow. People on
17434	2008	43	90	92	1	73	Arrived on the scene to find small column of grey smoke coming from the address of this incident. E10
19423	2008	43	90	70	U	UU	Arrived to find 2'X2' smoldering fire poss camp site. E08 extinguished.
8229	2008	50	93	88	1	19	Investigation reveals JV's playing with fireworks (airborne type). A witness Gray Thatcher states he saw
15862	2009	50	90	72	2	19	While enroute advised of a grass fire near the structure. Arrived and found a 5X5 grass fire. All responding
15603	2009	54	90	72	2	00	approx. 20 ft x 40 ft slow moving grass fire in light grassy green fuels with light breeze out of the NE.
15646	2010	54	00	72	2	10	SFR, downgraded to grass fire near a structure, downgraded again to grass fire now out. Arrived on
15805	2009	54	94	72	2	19	grass fire approx. 2 ft. from a residence at the above address. We arrived to find a deputy attempting to
15890	2009	54	90	73	2	60	Arrived to scene, no fire. RP states fire is out, no problem. Possibly caused by fireworks.
15844	2009	54	90	72	2	60	Toned for a grass fire in neighborhood. RP advises that they think the fire is out but are not completely sure.
15865	2009	54	00	72	2	NN	They advised fire started by fireworks and has been extinguished. They advised they will continue to run
16875	2010	54	90	72	1	NN	Arrived to find a small one by one fire in the grass with a 10' strip of fire caused by gasoline. Approx 5 minutes
8220	2009	60	UU	UU	0	19	Upon arrival found approx 25'x25' brushfire on the side of a small hill behind theater. Slow moving in mixed

16675	2008	60	92	72	1	19	Arrived to find small fire 1 foot by 1foot in grass on north side of burly Olalla east of Arab.E17 extinguished
23958	2009	60	95	70	2	70	Arrived to find burn pile from last week that spread to near by cedar tree and stumps. The smoldering fire was
12544	2009	60	94	72	2	73	arrived on scene to find a 20'x20' burnt out area with resident actively extinguishing. resident states he has it
13823	2008	60	94	72	2	73	found a large area (50' x 50') that had recently been burned which include stumps, brush, and grass. Now
19279	2009	61	00	72	U	11	Arrived at a small, 3'X3' grass/brush fire at the base of a tree. The fire was located on school property near a
20117	2008	61	92	UU	U	11	Used 100 feet of forest hose to wet down the area. Overhauled entire area and applied water to the area
18113	2008	61	94	UU	U	11	E31 arrived on the scene and the fire had been extinguished with a garden hose.E31 was unable to
4952	2008	61	93	72	2	73	The trash container was next to the house B/C corner and was completed melted and burned up. There was a
15294	2009	61	90	72	2	00	Arrived to find RP out with the gazebo. RP had a sprinkler and a hose on the gazebo with no visible
27345	2008	61	90	UU	2	11	Upon arrival we found a small 1ft x 1ft smoldering fire on the hillside behind cabin #4. This appeared to have
19722	2010	61	90	22	2	11	arrived to find 2inch by 2inch smolderingly spot on arm of park bench extinguished with p-can E31 secured
17270	2009	61	90	72	0	11	Dispatched to beauty bark smoldering at apt. complex. Arrived on scene to find approx 3x3 area of beauty bark
14184	2009	61	90	72	2	11	to a smoldering bark fire at Puerto Vallarta. E11 arrived to find 2 12" in diameter hot spots. E11 dug out the hot
21508	2010	61	92	94	2	11	small 1 by 2 foot smoldering bark fire adjacent to drive-thru for coffee shop. Discarded cigarette near-by.
19490	2008	61	92	70	0	11	Arrived to 6 inch dia. smoldering bark. Extinguished fire
18693	2008	61	92	70	2	11	Arrived to find 1 by 1' area smoldering, cigarette butt in burned area. Extinguished fire.
19038	2010	61	95	70	0	11	Arrived to find a 2x2 smoldering fire in the duff. Plan was to overhaul to clear dirt. 15 gallons of water poured
15699	2009	61	92	72	2	11	arrived on scene with WSP to find a 30x50 slow moving grass fire. Fire appeared to be started by a
16956	2010	61	92	72	2	11	Arrived to find a 1' by 1' patch of grass burning on the side of the road.E08 extinguished with water
19077	2010	61	95	70	2	72	Return trip for an earlier 2x2 fire that has popped up 10 feet away from earlier smoldering pile. This is a 1x1
15808	2010	61	94	72	2	UU	Arrived to find a 5x5 smoldering fire in light ground cover. Appears to have been ignited by a cigarette.
19369	2009	61	90	70	U	UU	Arrived to a 2X4 grass fire, already extinguished by passerby’s. Verified extinguished and placed E31
16869	2009	63	94	72	U	11	Fire was out upon his arrival, he stated a bystander put the fire out. It appears that the fire started on the outside
17773	2010	65	90	72	1	19	arrived to find a small brush fire approx several hundred yards off of the south side of Anderson Hill Road SW
6107	2010	65	94	72	1	19	RP stating that there are children playing with fire trying to burn grass. Arrived on scene to nothing

12432	2008	69	90	72	2	70	home owner had already extinguished a small brush fire. The home owner wanted to clear some small
14823	2009	69	95	91	1	NN	arrival small 2x2 foot pile of dry wood and school books found smoldering. Fire Extinguished with APW
18026	2008	71	92	72	2	60	bark fire in the median of Hwy 303 in Navy Yard City. M08 saw some bark smoldering in the area as we were
16629	2010	71	90	72	4	NN	Beauty bark fire. Arrived on the scene for a 2x2 smoldering fire. Extinguished with PFE. E31 is
17590	2009	72	90	70	4	60	Beauty bark smoldering. E8 on the scene of a small 1x1 area smoldering. crew extinguish/with portable water
16755	2009	72	90	72	4	60	arrived to find a 10 x 10 natural vegetation pile smoldering. The owner states coming home to find the
18037	2008	72	92	44	4	60	Smoldering fire in the beauty bark. on the scene to find a small 1 x 1 area smoldering M8 crew was on the
18402	2009	72	94	72	4	NN	Arrived on the scene of this house to find a dry pile of grass clippings that combustion had caused the pile to
17803	2008	80	UU	UU	U	11	to find a 50 X 100 smoldering fire in a clearing that appeared to be used for camping. The fire was
13510	2009	80	94	72	2	73	Arrived to find a small 5 by 5 pile of tree limbs smoldering with property owner spraying with a garden
13890	2009	83	90	UU	2	12	Arrived to find 4'X20' smoldering grass fire being extinguished by owner. RP stated had a small fire on the
14854	2009	84	95	72	4	61	Arrived on the scene to find live wires in the brush with 20' x 20' brush fire
22998	2008	UU	90	72	2	11	RP standing by the road stating after smelling smoke she found a small fire in the trees behind her house. RP
18141	2008	UU	92	70	U	11	small 1ft x 1ft smoldering fire
16302	2010	UU	95	73	2	11	Toned for smoke in the area, no flames seen. RP sts that multiple neighbors discard yard debris in the area
14962	2008	UU	UU	70	0	11	Toned for possible brush fire on Sherman Heights Rd near the Quarry. While leaving the station, the
16813	2009	UU	95	73	2	19	Arrived to find one stump smoldering with embers visible. E08 used an axe and a pee can to extinguish the
30224	2008	UU	92	UU	1	19	Arrived to find POPD on scene and indicating where the fire was and that it is extinguished by RP.
15174	2009	UU	90	72	U	60	Arrived to find a small smoldering fire. Extinguished with water from engine carried with a five gallon
24154	2008	UU	94	UU	U	60	Toned to this location to meet with the park ranger at Manchester State Park. Ranger has found a large stump
17306	2009	UU	UU	UU	1	60	E14 arrived on scene to find a 20x20 smoldering fire. Caller was able to extinguish majority of the fire with
15849	2009	UU	90	72	2	60	Toned to grass fire in the field across from Albertsons. Arrived on scene to find 20X20 slow moving grass fire.
19306	2008	UU	95	73	2	72	Toned for smoldering of a fire yesterday. Arrived to find a small wisp of smoke from the ground. The dirt
18495	2010	UU	90	UU	1	74	A10 toned to an un attended camp fire on beach smoldering. Arrived to find large log smoldering with
16422	2008	UU	90	70	U	NN	Toned to beauty bark smoldering, unknown cause. Arrive to find fire out, rp stating he put it out with a

20872	2009	UU	90	UU	U	NN	Toned to this location for a possible brush fire. Arrived, fire is put out by bystanders.
20680	2008	UU	95	UU	2	NN	responded for brush fire in wooded area behind building@ The Orchard on the Green Apartments.
18727	2010	UU	92	72	4	NN	arrived to find two small, 6 inch diameter circles, smoldering in the grass/dirt median of the parking lot.
15908	2009	UU	92	UU	2	NN	Toned to grass fire at intersection of Alaska and Center. KCSO on scene advising there was a small fire off the
15370	2010	UU	94	72	U	NN	Upon arrival found a slow moving grass fire 3'x15' in a ditch. Fire was extinguished and hydraulically
17123	2008	UU	94	72	U	NN	Dispatched for a brush fire. Arrived to find a small (5x3) foot, slow moving grass fire
23498	2009	UU	90	UU	U	UU	E08 to unattended campfire Arrived to find unattended campfire.
19219	2009	UU	90	72	U	UU	to find slow moving smoldering duff burn approx. 10' x 2' in woods behind school appearing to have been
17854	2009	UU	90	UU	U	UU	Dispatched to a Brush Fire reported as 2'x 2', at Manchester Elementary School. Arrived to find a 15' x
17262	2008	UU	90	70	2	UU	Upon arrival found 6 x 12 slash pile that had partially ignited that owner extinguished with garden hose.
16484	2008	UU	90	70	2	UU	Toned for reported brush fire at Annapolis Foot Ferry. Responded with A17 crew. Arrived to find smoldering
23470	2008	UU	93	73	5	UU	E08 called to a smoke investigation at Olney Dr. E08 arrived to find a tree in the front of the movie theater
18128	2010	UU	95	73	U	UU	stump fire smoldering. Arrived with KCSO and lead by caller to a stump smoldering with light flames. Fire
17459	2009	UU	95	73	1	UU	E31 arrived and found light smoke in the area with no flames seen. Upon further investigation E31 found a
15592	2009	UU	95	73	2	UU	E10 toned for a brush fire in the area of the Harper Park at Southworth and Olympiad. Update of a smoldering
17973	2008	UU	95	72	U	UU	E08 toned for a small fire in the duff by Orchard Heights Elementary. Arrived to find a 2' x 2' fire on the
19301	2008	UU	UU	UU	U	UU	A11 was toned for a brush next to the building at the above address.A11 arrived to find a smoldering bark
19225	2008	UU	95	70	U	UU	Toned as brush fire 10 x 12, update per CenCom stating from residence resizing to 50x50. Upon arrival found
18844	2009	UU	UU	UU	U	UU	Mutual Aid: DNR US Forest Service Toned for a large fast moving brush fire with possible explosions per RP.
15705	2009	UU	UU	UU	U	UU	Arrived to find a 20'x20' fire in duff. East of the Manchester Elementary parking lot. Neighbors spraying
14050	2009	UU	UU	UU	U	UU	arrived to find an approximate 2+ acre brush fire, under the high tension power lines, moderately moving in a
13351	2009	UU	90	72	U	UU	Toned for a brush fire in the woods about 100' from a residence. Upon arrival RP advised that he had used a
19461	2008	UU	90	UU	U	UU	20x30 brush fire
17858	2010	UU	94	UU	U	UU	Arrived to find a 2'x2' fast moving fire in dried knee high grass on the north side of Sedgwick Rd.
20595	2010	UU	95	UU	1	UU	Arrived to find a small tree on fire. RP stated that she noticed the fire in the woods near a trail. the fire was
22455	2008	UU	95	UU	U	UU	Upon arrival found small 15' diameter smoldering brush fire. Extinguished with tank water. Hydraulic overhaul

18530	2009	UU	UU	UU	U	UU	Arrived on scene to find small fire approx. 6'x100' in light fuel moving slow. Pulled wildland hose and
15389	2009	UU	UU	UU	U	UU	E14 dispatched to a 6 x 6 brush fire along roadway
6219	2008	UU	50	66	5	UU	M14 arrived on scene to find a small fire in a culvert. There is also a small amount of surface fire. M14
15376	2009	UU	90	UU	2	UU	Arrived to RP's. She stated the neighbors had a fire, no longer visible. Neighbor admitted to fire. 10'x10' burned
20979	2008	UU	90	UU	2	UU	Toned for a small fire along the roadway
15968	2009	UU	92	UU	U	UU	Arrived to find a 25' by 10' grass fire that had been mostly extinguished by neighbors. Extinguished fire
15796	2009	UU	92	72	2	UU	arrived to find a 15x2 ft grass fire that had been extinguished by a passer-by. M08 crew overhauled the
20532	2010	UU	94	72	U	UU	Arrived on the scene of a approx 10 X 30 slow moving grass fire. Made contact with RP and he stated that there
18329	2009	UU	94	UU	U	UU	Upon arrival found a slow smoldering grass fire in the front lawn of the residence. The fire was approximately
20967	2009	UU	95	72	U	UU	to find approx. 10' x 20' slow moving brush fire in light fuels. No structure or threat of conflagoration.
16493	2010	UU	UU	UU	U	UU	arrived and was told by DC08 to soak small area were grass fire was. Fire had been extinguished before our
22358	2009	UU	UU	72	2	UU	E08 toned with LE for a smoldering 1x1 section of grass. arrived on scene to find some people from the
4607	2010	UU	90	91	1	UU	small fire at the South Kitsap Community Park in the shelter near the horseshoe pit. RP stated he saw two
27429	2009	UU	93	UU	1	UU	Commercial SFR reported as Shed on fire at elementary school, intentionally set with kids running from scene.
16174	2009	UU	92	UU	2	UU	fire in the medium on highway 304 in front of Westbay Auto building. Arrived and found the small area of

Total 113

Vehicle Fires							
Incident Number	Year	Heat Source	Area of Fire Origin	Item First Ignited	Cause of Ignition	Factor Cont to Ignition	Narrative
11617	2008	0	83	UU	2	20	Arrived to find a 1953 Cadillac fully involved, located at the end of the center alley, just 4 feet
11538	2010	0	83	UU	3	30	upon arrival found pick up with engine and passenger compartment fully involved with
5512	2009	10	85	UU	3	12	Initially toned as a vehicle fire and then informed vehicle within 5 feet of the building. Informed
16334	2010	10	83	62	2	20	A17 arrived with E31 to find a pickup truck fully involved. A17 officer established JM Dickenson
10251	2010	10	83	67	3	20	M14 arrived on scene to find one 4 door sedan with heavy smoke and flames from the engine
22593	2008	10	83	81	2	20	Arrived to find minivan off the side of Hwy fully involved. All occupants out and non-injured. E31

13494	2008	10	83	99	3	20	Arrived to find on full size pickup in the parking lot with an engine compartment fire spreading to
4819	2008	10	83	81	2	20	Arrived to find a small passenger car with an engine compartment fire. E31 stretches a
24167	2009	10	83	62	3	23	E16 arrived in the area but was unable to locate initially. Further information from a passerby
20766	2008	10	84	62	3	23	arrived to find flames from engine and passenger compartment and tiresE14 extinguished with pre
17840	2010	10	83	81	2	30	M08 arrived on scene to find a older style ford mustang with a engine compartment fire.
8352	2008	10	81	81	3	34	E08 arrived to find a service van on the side of the road with nothing showing. E08 made
6298	2009	10	83	81	2	UU	Arrived to find well involved engine compartment fire. Plan 100' attack line
7314	2008	11	82	UU	2	14	Upon arrival found a 1987 Chev. Cavalier with the rear trunk /bumper exterior on fire in the lock
12040	2009	11	83	UU	2	20	E08 arrived to occupant of residence standing by antique car. He states when he started it there
33419	2008	11	83	62	2	20	Arrived to find Geo with fire from interior, engine compartment, and tires ,and gas leaking
3267	2008	11	83	65	2	20	E16 arrived on scene to find a older sedan with fire in the engine compartment.E16 pulled officer
24122	2008	11	83	UU	2	51	E8 arrived to find minivan over curb and smoking heavily from engine compartment--
30226	2008	11	83	81	3	NN	A10 responded with Station 8 to this vehicle fire. All units arrived on the scene to find a fully
24069	2008	12	80	50	2	12	Arrived in the area to find a small controlled burn in the backyard and a scrap vehicle smoking
8840	2008	12	83	99	U	12	E31 arrived on the scene 1982 cameo fully involved engine compartment and passenger area
13098	2010	12	86	31	2	12	E11 and other SKFR units called to 2135 SE Hillwood Ln for a possible SFR, a vehicle on fire
16665	2010	12	83	95	3	20	Arrived on scene to find fire out. Investigation found boat trailer brakes had locked up causing
10901	2010	12	83	65	2	20	E11 arrived on scene to find a passenger vehicle with engine compartment on fire. pulled the
17981	2009	12	83	UU	2	20	On scene to find fully involved Ford Bronco 2 on side of roadway with all occupants safely out of
10991	2009	12	83	67	2	20	arrived on scene to find on vehicle off the road way with the hood open no smoke or fire
9414	2009	12	83	62	2	23	arrived to find A17 on scene with fire already out. Owner extinguished fire with dry chem.
11871	2008	12	84	62	3	23	Arrived and found fully involved engine compartment fire. Occupant out of vehicle with
4159	2010	12	83	62	3	23	Arrived and found an unoccupied 4 door passenger car with working engine compartment
18537	2009	12	83	62	3	23	M16 arrived prior to E17 and advised that the fire was out. A17 toned to vehicle fire, M16 went
11417	2010	12	83	UU	3	UU	Arrived on the scene of a fully involved small truck. Exited engine and made contact with a

19960	2008	13	81	81	3	20	Arrived on scene to find car on a trailer with passenger compartment fully involved. 1 3/4 to
10132	2010	13	83	99	2	30	E09 arrived on scene to find a full size pickup in the driveway and away from the residence fully
10761	2010	13	83	66	2	33	Advised vehicle was on the street and the fire was in the engine compartment. Driver advised
239	2008	13	80	81	3	34	to find newer looking white Camero with passenger side rear quarter panel burned to
19816	2008	13	81	81	2	34	E16 arrived to find a vehicle smoking a bystander was at the scene and dumped a dry
7194	2008	13	81	UU	3	34	Arrived to find a fully involved vehicle fire next to a detached 2 car garage. Extended a 1 3/4
15606	2008	13	83	81	3	34	Arrived to find a vehicle fire now out under car port to Park Vista Retirement. Investigation
16034	2010	13	83	81	2	36	Arrived to find a vehicle on the shoulder of the road, fully involved in flames. Extinguished the
26581	2008	40	83	62	3	20	Enroute had reports of an engine fire that was now out, extinguished by owner with a
23837	2010	41	83	62	2	10	Advised while enroute of several calls. Arrived to a fully involved vehicle. Vehicle extinguished
32164	2008	41	83	81	3	20	Toned for a vehicle fire, arrived on the scene, and there is no fire. RP stated that she put the fire out
30585	2008	41	83	83	3	20	Arrived to find vehicle in airport parking lot--hood open--no fire. Cancelled A17.Fire self
8934	2008	41	83	60	2	20	E16 arrived to find a vehicle in tow on a tow truck with steam coming from the engine
6667	2010	41	83	62	2	23	arrived to a vehicle mostly involved in the middle of the road. extinguish. LT Hall
4309	2008	41	86	UU	2	UU	Arrived to find passenger car, fire out. Appears to have started in the rear driver's side brake/tire
17218	2010	50	81	21	1	10	Arrived to find the vehicle fire extinguished with a garden hose by a local resident .Investigation
31614	2008	61	81	92	5	11	Vehicle located in front of the 1800 Bldg. Vehicle passenger compartment fully involved.
11302	2009	65	83	92	5	0	E10 Ahrens Toned to car fire on Mennizes rd arrived to fully involved van fire in east bound
21130	2010	68	83	UU	2	26	Arrived and fire was out. Owner stated that his vehicle backfired and caught his air filter on fire.
5524	2010	68	83	62	2	26	Vehicle fire that was extinguished prior to our arrival. Driver stated that the vehicle started to
9074	2008	68	83	62	2	26	While driving down Hwy 166 a large panel truck was having trouble maintaining its speed. It
4690	2008	68	83	62	2	26	A10 arrived to find car approximate. 20 feet from house with owner extinguishing with garden hose
24803	2010	84	83	UU	2	UU	Arrived to find the vehicle is involved in the engine compartment. E31 pulls line (Hoskins)
7598	2010	UU	81	UU	5	0	DC8 Yergeau- Cancelled while enroute, units on scene handled. Filled out dispatch inquiry for
31644	2009	UU	81	65	5	16	Flames seen in passenger compartment. While enroute LE advised fire appears out, car is

22630	2009	UU	82	UU	U	20	Once enroute CenCom advised that fire was growing and that efforts by by-stander were not
17617	2010	UU	83	81	2	20	While enroute A09 was advised by CENCOM that this was being upgraded to a vehicle fire.
6612	2009	UU	83	UU	2	20	Residential SFR response for a reported car fire next to building. On scene to find vehicle approx
19350	2008	UU	83	UU	2	20	E11 was toned for a vehicle fire on State HWY 16 North of the interchange.E11 arrived on scene
16275	2008	UU	83	UU	3	25	upon arrival found a 1992 Nissan pickup with engine compartment fully involved. E08 pulled a
13613	2008	UU	83	UU	2	25	Upon arrival found a 1982 ford F15 had a engine compartment fire, extinguished by the home
25646	2008	UU	80	UU	2	26	While en route this call was upgraded to a SRF due to the car being 5 feet from the home. 808
24029	2008	UU	83	62	3	26	toned for a vehicle fire in front of South Kitsap High School. Prior to arriving, POPD arrived
23521	2010	UU	83	UU	2	30	E14 arrived to find a 4 door sedan off the roadway partially blocking one lane with the
30507	2010	UU	83	UU	5	51	Arrived to find two vehicle MVA with one vehicle on fire (E14 attacking) and one in the
27095	2010	UU	83	UU	0	51	Arrived to find a car into the trees that had caught fire but is now out. The vehicle was being
24599	2008	UU	83	UU	U	NN	On arrival found vehicle with heavy smoke small amount of flame under front of vehicle. WSPx2
20759	2010	UU	83	UU	U	NN	Upon arrival found a vehicle on the shoulder of the roadway with a fully involved engine
6902	2009	UU	83	UU	U	UU	Arrived on the scene to find vehicle slightly smoking. Investigated. Found engine
23531	2010	UU	80	UU	5	UU	fully involved veh. fire with M31 on scene standing byM31 pulled line from E08 and
20922	2010	UU	80	UU	1	UU	Toned for illegal burn pile, possible bon fire. Arrived in the area with Port Orchard Police.
1655	2010	UU	81	99	5	UU	Arrived on the scene to find one vehicle fully involved. A31 extinguishes the fire and confines
30596	2009	UU	81	92	1	UU	to find 3 subjects (neighbors/RP) standing on street, light smoke/dry chem dust coming from
4655	2009	UU	81	UU	5	UU	Arrived on scene and assisted E08 with extinguishing fire and determining cause and
32099	2008	UU	81	21	U	UU	arrival found a mid-sized SUV with smoke showing from the passenger compartment.E17
29409	2008	UU	81	21	U	UU	E14 arrived to find a single vehicle 50' from any structure with flames showing in the rear
26786	2008	UU	81	UU	U	UU	Arrived on the scene of a fully involved vehicle fire. Pulled 1 3/4 pre-connect and extinguished
13098	2009	UU	82	UU	2	UU	arrived to find car in front yard at above address ,small fire in truck back seat area.E10
26572	2010	UU	83	UU	U	UU	found a car fire 30% involved on Lloyd Parkway and Old Clifton. Vehicle was abandoned and fire
15201	2010	UU	83	UU	U	UU	arrived on scene initiating and investigating. E08 found passenger vehicle in parking lot fire out.

14020	2010	UU	83	UU	2	UU	Arrived to find 1993 Toyota T100 engine compartment fire on the West bound Hwy 16 off
23227	2009	UU	83	99	0	UU	Arrived on the scene to find 1 vehicle which has rolled and on it's wheels blocking the roadway
6732	2009	UU	83	UU	U	UU	Upon arrival we found 1 Ford F150 in the rear of the residence and the fire that started in the
32799	2008	UU	83	UU	U	UU	arrived on scene to find fully involved Chevy Suburban in field Vehicle looked like it was
31502	2008	UU	83	UU	2	UU	Arrived to a vehicle fully involved, driver standing by. Driver states that he was driving
11093	2008	UU	83	99	U	UU	Mason County toned for a Vehicle fire on HWY 3 near SunnyslopeM16 Responded form out of
4129	2008	UU	83	UU	3	UU	E31 responded for vehicle fire EB Hwy 16 at Tremont St. exit. Upon arrival found an older
30855	2010	UU	UU	UU	5	UU	Arrived and found vehicle fully involved. Extinguished fire with 1 3/4 apt bundle approx
21270	2010	UU	UU	UU	5	UU	confirmed with CenCom unknown injury MVC Had CenCom dispatch E11upon M14 arrival

Total 90

Chimney Fires							
Incident Number	Year	Heat Source	Area of Fire Origin	Item First Ignited	Cause of Ignition	Factor Cont to Ignition	Narrative
27247	2008	0	0	UU	2	NN	Arrived to find resin inside chimney flue burning. E08 steamed out flue and ensured no
14909	2008	0	14	70	0	NN	find normal white smoke coming from chimney. owner informed us that flame was
3663	2009	0	20	UU	2	NN	Arrived on the scene single story residential with normal smoke coming from chimney.
3902	2010	0	55	UU	2	NN	Arrived to find chimney flu fire not spread to the structure. E14 crew then started to put out
30472	2010	11	20	66	2	12	Arrived on scene with nothing showing and investigating. RP who showed us into the house
26407	2010	11	14	95	2	55	Arrived and found normal smoke from chimney, home owner outside waiting. Owner
31168	2009	11	14	95	2	55	Arrived and found chimney with normal smoke. Met with owner who said he heard what
3984	2008	11	52	70	2	55	arrived to find fire out occupants stated embers coming from chimney fire was confined to
8721	2009	11	23	UU	2	UU	Arrived to find normal smoke showing from chimney Met with owner and he stated that
2244	2009	12	20	UU	2	55	Arrived to find a double wide mobile home with smoke coming from the chimney. crew
5923	2009	40	52	70	2	54	Arrived to find occupant outside, no apparent fire or smoke. Upon investigation the double
32591	2008	40	0	UU	2	55	Toned for Chimney fire- arrived to find double wide mobile- fumes coming from chimney-

29050	2008	42	70	95	2	10	Arrived to a medium size residence with normal smoke from the chimney. Met outside by
4368	2008	42	0	UU	2	55	Arrived to find heavy smoke from the chimney and a person on the roof with a garden hose.
1828	2008	42	52	95	2	55	Toned for a chimney fire at incident address. Cencom then upgraded to SFR advising that the
8253	2008	42	0	UU	2	NN	Nothing was found fire was contained to chimney. Owner stated there were flames and
31141	2009	43	20	UU	2	50	E10 on the scene of a Med size SFR with smoke and ambers from the chimney. Ladder to
1006	2009	43	0	44	2	55	E11 dispatched with M08 and T11 to possible chimney fire. Cencom advised that RP party
29980	2008	43	0	UU	2	55	Arrived on scene to find light smoke coming from chimney. Occupants had already put water
398	2009	43	14	95	2	55	M14 arrived on scene to find a medium size residential structure nothing showing.M14 met
1322	2008	43	20	70	2	55	Arrived to find RP in the front yard with light smoke and embers coming from the chimney.
2430	2010	43	52	44	2	55	Large residential nothing showing initiating and investigating.M08 was met by Homeowner who
4890	2010	43	52	95	2	55	While enroute a neighbor put water on the fire in the box to help dampen the fire. Arrived on
5007	2008	43	55	UU	2	55	Arrived on the scene and found a subject waiting for us at the road. Small chimney with
8151	2008	43	74	18	3	55	Dispatched to a possible SFR which was downgraded to a chimney following dispatch.
31053	2010	43	0	70	2	70	large amounts of smoke emitting from chimney. Homeowner on roof spraying hose onto
6958	2009	43	20	UU	2	UU	Arrived on the scene to find two story residential with normal smoke from chimney.
14759	2008	60	70	10	2	10	Arrived to find a black smoke from the chimney. The RP states that she put in a presto
4579	2010	60	0	UU	2	53	we found nothing visible and were met by the owner. The owner explained that he just added
28190	2010	60	14	70	2	55	Arrived on scene- observed normal smoke coming from chimney and found owner outside
31742	2008	60	0	UU	2	NN	while enroute we were advised the occupant had a fire in the chimney and that it was now
24772	2010	81	55	70	2	50	Upon arrival owner met us in the street. He had already controlled the fire and there was no
5278	2008	81	0	66	0	55	Arrived to find a neighbor spraying water into the chimney pipe from the ground. Steam and
2196	2009	81	0	UU	2	55	smoke coming from the chimney. E14 crew investigated at met with homeowner.
28516	2008	81	0	UU	2	55	Arrived to a medium residence, smoke showing from chimney, initiating, investigating.
1000	2008	81	0	UU	2	55	arrived to a medium residential, nothing showing, initiating and investigating. Met
7554	2010	81	14	73	1	55	Arrived to find a larger residential structure with nothing showing. PO reports having a fire

27100	2009	81	20	UU	2	55	Arrived to find embers emitting from chimney. Entered home and emptied out fire box of hot
31411	2009	81	52	95	2	55	Arrived to find resident in front yard describing a chimney fire. Normal heat and smoke from
28643	2010	81	55	UU	2	55	Chimney adv they have put the fire out in the fire box, but can still hear the fire in no smoke
24156	2009	81	60	66	2	55	arrived and found occupants standing outside and just a little smoke coming from the
5983	2008	81	52	18	2	70	arrived to find sparks and embers showing from the chimney. E08 made contact with the
6522	2008	81	0	95	2	NN	arrived on scene with medium residential with nothing showing, initiated command and
27100	2010	81	71	70	2	NN	Arrived to minor smoke coming from chimney. Assessed situation, cancelled incoming units.
10448	2008	81	0	UU	2	UU	upon arrival found normal smoke no flames from chimney. Extinguished fire in fireplace
31395	2009	82	0	88	2	55	arrived to find a medium 2 story home w/ occupants meeting us at the end of the
27251	2008	UU	90	UU	2	NN	Responded earlier to find resin inside chimney flue burning. E08 steamed out flue and ensured
30036	2009	UU	UU	UU	2	UU	We did notice a few sparks coming from the chimney so we put a roof ladder up and
27507	2009	UU	UU	UU	3	UU	arrived on scene and found light smoke coming from chimney and went initiating and
29761	2008	UU	UU	UU	2	UU	E2 arrived on the scene. The size up was light smoke showing. E2 advised that the fire was

Total 50

Cooking Fires							
Incident Number	Year	Heat Source	Area of Fire Origin	Item First Ignited	Cause of Ignition	Factor Cont to Ignition	Narrative
12382	2010	0	24	76	3	50	burnt toast but they did not have the correct person to cancel the call. We downgraded to a
22429	2010	0	24	76	2	53	investigate which determined to be food on the stove some smoke in home. Food was already
9255	2008	0	24	76	2	55	arrived to audible alarm sounding, owner/ occupants inside the home attempting to silence
14678	2009	0	24	76	2	NN	homeowner was cooking brownies and forgot about them and fell asleep. Apartment filled
20393	2008	0	24	76	2	NN	burnt food on the stove BFD units will handle. It appears that the smoke came from burnt food
24452	2008	0	24	76	2	UU	Arrived to find smoke in the residence, neighbors report food burning on the stove.
23997	2010	10	24	76	2	11	crews forced the front door and removed a boiling pot of beans from the stove. Primary
29288	2010	10	24	76	2	12	E31 called out to Myhre's for a cooking fire. Arrived to find light smoke in the kitchen.

8336	2010	10	24	76	2	12	E08 arrived on scene nothing showing initiating and investigating. E08 found no fire with
16189	2008	10	24	76	2	12	Toned for a fire inside a stove. Arrived to a small residential nothing showing, initiating and
9101	2009	10	24	UU	2	12	The fire had started on top of the stove with a fry pan with grease in it to cook chicken
30029	2009	10	24	76	2	52	Found neighbor on scene who reported no one home, stove top fire no out. Made entrance and
8321	2008	10	24	76	2	53	Toned for cooking fire confined to oven. Prior to arrival Cencom notified occupant stating fire
28508	2008	10	24	56	2	55	fire inside a stove. found the occupants outside and they stated that they were cooking bacon in
25763	2010	10	24	UU	2	UU	Arrived after E08 to find no fire. Occupants were cleaning oven and caused minor grease
19650	2010	11	24	25	2	20	SFR with BFD to a DBN area for a possible stove fire. E2 arrived first to find fire out and
10982	2009	11	24	76	2	55	arrived on scene to find a small commercial building with alarm sounding an the building
3426	2010	11	24	76	0	NN	arrived on scene to a 2 story home nothing showing. M11 investigated and found that
4042	2008	12	24	76	2	10	owner states fire is out. Investigated to make sure fire was out and it was.
24250	2009	12	24	76	2	11	arrived first to find a smoke filled apartment and neighbors had just removed burning food
26811	2008	12	24	76	2	11	arrived on scene to find double wide mobile with light smoke coming from doors, and
20367	2008	12	24	76	2	11	A10 accessed unit and found no fire, burnt food on stove. Arrived on the scene to nothing
2534	2010	12	24	26	2	12	made contact with the property owner. The owner had been cooking turned on the wrong
17833	2009	12	24	76	2	50	nothing showing. E14 initiating and investigating. E14 smelled smoke from the
25033	2008	12	24	20	2	52	Indicates food on the stove. Reporting fire is out; extinguished by occupant with dry chem
27644	2008	12	24	76	2	52	Burned Eggs on Stove
24324	2010	12	24	76	2	53	Toned for a fire now out. the occupant had all the doors and windows open to evac out the
31046	2009	12	24	76	2	53	We were assigned to ventilate and assist w/ deodorizing. Upon investigation there was a
20208	2009	12	24	76	0	53	arrived on scene with no visible smoke or flame from the exterior of the building, occupants
5542	2010	40	24	76	2	53	Arrived and advised by occupant of fire that occurred over three hours ago. Caller was
24827	2009	40	24	76	2	NN	Called to residential fire alarm, arrived to a cooking fire out. Light smoke in residence
20718	2009	42	24	65	2	14	Dispatched to a cooking fire confined in the oven. Upon arrival found a burned/broken
3019	2008	42	24	76	2	53	Arrived to find nothing showing- occupants in the front yard with smoldering frying pan.

30144	2009	42	24	76	2	NN	report of stove on fire, now out. find nothing showing at multi-family apartments;
5372	2010	43	24	76	2	10	light smoke showing with occupants evacuated. Initiating; preparing. Entered structure to find
18827	2008	81	24	76	2	11	Arrived to find a multi-family structure with audible alarms and building evacuated.
28527	2010	81	24	60	2	53	Arrived to find a fire out on the stove. Homeowner had left grease in a pan with the
31155	2009	84	20	42	2	12	Arrived to a small residential, nothing showing, initiating and investigating. RP advises fire on

Total 38

NFIRS – Fire Codes

Heat Source	
00	Heat source: other
10	Heat from powered equipment, other
11	Spark, ember, or flame from operating equipment
12	Radiated or conducted heat from operating equipment
13	Electrical arcing
40	Hot or smoldering object, other
41	Heat, spark from friction
42	Molten, hot material
43	Hot ember or ash
50	Explosive, fireworks, other
51	Munitions
53	Blasting agent, primer cord, black powder fuse
54	Fireworks
55	Model and amateur rockets
56	Incendiary device
60	Heat from other open flame or smoking materials, other
61	Cigarette
62	Pipe or cigar
63	Heat from undetermined smoking material
64	Match
65	Lighter: cigarette, cigar
66	Candle
67	Warning or road flare; fuse
68	Backfire from internal combustion engine
69	Flame/torch used for lighting
70	Chemical, natural heat source, other
71	Sunlight
72	Spontaneous combustion, chemical reaction
73	Lightning discharge
74	Other static discharge
80	Heat spread from another fire, other
81	Heat from direct flame, convection currents
82	Radiated heat from another fire
83	Flying brand, ember, spark
84	Conducted heat from another fire
97	Multiple heat sources including multiple ignitions
UU	Undetermined

Area of Fire Origin	
00	Other area of fire origin
01	Hallway corridor, mall
02	Exterior stairway, ramp, or fire escape
03	Interior stairway or ramp
04	Escalator: exterior, interior
05	Entranceway, lobby
09	Egress/exit, other
10	Assembly or sales area, other
11	Arena, assembly area w/ fixed seats - 100+ persons
12	Assembly area without fixed seats - 100+ persons
13	Assembly area - less than 100 persons
14	Common room, den, family room, living room, lounge
15	Sales area, showroom (excludes display window)
16	Art gallery, exhibit hall, library
17	Swimming pool
20	Function areas, other
21	Bedroom - < 5 persons; included are jail or prison
22	Bedroom - 5+ persons; including barrack/dormitory
23	Dining room, cafeteria, bar area, beverage service
24	Cooking area, kitchen
25	Bathroom, checkroom, lavatory, locker room
26	Laundry area, wash house (laundry)
27	Office
28	Personal service area, barber/beauty salon area
30	Technical processing areas, other
31	Laboratory
32	Dark room, photography area, or printing area
33	Treatment - first aid area, surgery area
34	Surgery area - major operations, operating room
35	Computer room, control room or center
36	Stage area - performance, basketball court, boxing
37	Projection room, spotlight area
38	Processing/manufacturing area, workroom
40	Storage area, other
41	Storage room, area, tank, or bin
42	Closet
43	Storage: supplies or tools; dead storage
44	Records storage room, storage vault
45	Shipping/receiving area; loading area, dock or bay
46	Chute/container - trash, rubbish, waste
47	Vehicle storage area; garage, carport
50	Service facilities, other
51	Dumbwaiter or elevator shaft

52	Conduit, pipe, utility, or ventilation shaft
53	Light shaft
54	Chute; laundry or mail, excluding trash chutes
55	Duct: HVAC, cable, exhaust, heating, or AC
56	Display window
57	Chimney (conversion only)
58	Conveyor
60	Equipment or service area, other
61	Machinery room or area; elevator machinery room
62	Heating room or area, water heater area
63	Switchgear area, transformer vault
64	Incinerator area
65	Maintenance shop or area, paint shop or area
66	Cell, test
67	Enclosure, pressurized air
68	Enclosure with enriched oxygen atmosphere
70	Structural area, other
71	Substructure area or space, crawl space
72	Exterior balcony, unenclosed porch
73	Ceiling and floor assembly, crawl space between stories
74	Attic: vacant, crawl space above top story
75	Wall assembly, concealed wall space
76	Wall surface: exterior
77	Roof surface: exterior
78	Awning
80	Vehicle area, other
81	Operator/passenger area of transportation equipment
82	Cargo/trunk area—all vehicles
83	Engine area, running gear, wheel area
84	Fuel tank, fuel line
85	Separate operator/control area of transportation equipment
86	Exterior, exposed surface
90	Outside area, other
91	Railroad right-of-way: on or near
92	Highway, parking lot, street: on or near
93	Courtyard, patio, terrace
94	Open area, outside; included are farmland, field
95	Wildland, woods
96	Construction/renovation area
97	Multiple areas
98	Vacant structural area
UU	Undetermined

Item First Ignited	
10	Structural component or finish, other
11	Exterior roof covering, surface, finish
12	Exterior sidewall covering, surface, finish
13	Exterior trim, including doors
14	Floor covering or rug/carpet/mat, surface
15	Interior wall covering excluding drapes, etc.
16	Interior ceiling covering or finish
17	Structural member or framing
18	Thermal, acoustical insulation wall, partition or floor/ceiling space
20	Furniture, utensils, other
21	Upholstered sofa, chair, vehicle seats
22	Non-upholstered chair, bench
23	Cabinetry (including built-in)
24	Ironing board
25	Appliance housing or casing
26	Household utensils
30	Soft goods, wearing apparel, other
31	Mattress, pillow
32	Bedding; blanket, sheet, comforter
33	Linen; other than bedding
34	Wearing apparel not on a person
35	Wearing apparel on a person
36	Curtain, blind, drapery, tapestry
37	Goods not made up, including fabrics and yard goods
38	Luggage
40	Adornment, recreational material, signs, other
41	Christmas tree
42	Decoration
43	Sign, including outdoor signs such as billboards
44	Chips, including wood chips
45	Toy, game
46	Awning, canopy
47	Tarpaulin, tent
50	Storage supplies, other
51	Box, carton, bag, basket, barrel
52	Material being used to make a product
53	Pallet, skid (empty)
54	Cord, rope, twine, yarn
55	Packing, wrapping material
56	Baled goods or material
57	Bulk storage
58	Palletized material, material stored on pallets.
59	Rolled, wound material (paper and fabrics)

60	Liquids, piping, filters, other
61	Atomized liquid, vaporized liquid, aerosol.
62	Flammable liquid/gas - in/from engine or burner
63	Flammable liquid/gas - in/from final container
64	Flammable liquid/gas in container or pipe
65	Flammable liquid/gas - uncontained
66	Pipe, duct, conduit, hose
67	Pipe, duct, conduit, hose covering
68	Filter, including evaporative cooler pads
70	Organic materials, other
71	Agricultural crop, including fruits and vegetables
72	Light vegetation - not crop, including grass
73	Heavy vegetation - not crop, including trees
74	Animal, living or dead
75	Human, living or dead
76	Cooking materials, including edible materials
77	Feathers or fur, not on bird or animal
80	General materials, other (conversion only)
81	Electrical wire, cable insulation
82	Transformer, including transformer fluids
83	Conveyor belt, drive belt, V-belt
84	Tire
85	Railroad ties
86	Fence, pole
87	Fertilizer
88	Pyrotechnics, explosives
90	General materials continued (conversion only)
91	Book
92	Magazine, newspaper, writing paper
93	Adhesive
94	Dust, fiber, lint, including sawdust and excelsior
95	Film, residue, including paint and resin
96	Rubbish, trash, waste
97	Oily rags
99	Multiple items first ignited
UU	Undetermined

Cause of Ignition	
0	Cause, Other
1	Intentional
2	Unintentional
3	Failure of equipment or heat source
4	Act of nature
5	Cause under investigation
U	Cause undetermined after investigation

Factors Contributing to Ignition	
10	Misuse of material or product, other
11	Abandoned or discarded materials or products
12	Heat source too close to combustibles.
13	Cutting, welding too close to combustible
14	Flammable liquid or gas spilled
15	Improper fueling technique
16	Flammable liquid used to kindle fire
17	Washing part, painting with flammable liquid
18	Improper container or storage procedure
19	Playing with heat source
20	Mechanical failure, malfunction, other
21	Automatic control failure
22	Manual control failure
23	Leak or break
25	Worn out
26	Backfire
27	Improper fuel used
30	Electrical failure, malfunction, other
31	Water-caused short-circuit arc
32	Short-circuit arc from mechanical damage
33	Short-circuit arc from defective, worn insulation
34	Unspecified short-circuit arc
35	Arc from faulty contact, broken conductor
36	Arc, spark from operating equipment
37	Fluorescent light ballast
40	Design, manufacture, installation deficiency, other
41	Design deficiency
42	Construction deficiency
43	Installation deficiency
44	Manufacturing deficiency
50	Operational deficiency, other
51	Collision, knock down, run over, turn over
52	Accidentally turned on, not turned off
53	Equipment unattended
54	Equipment overloaded
55	Failure to clean
56	Improper startup/shutdown procedure
57	Equipment not used for purpose intended
58	Equipment not operated properly
60	Natural condition, other
61	High wind
62	Storm
63	High water including floods

64	Earthquake
65	Volcanic action
66	Animal
70	Fire spread or control, other
71	Exposure fire
72	Rekindle
73	Outside/open fire for debris or waste disposal
74	Outside/open fire for warming or cooking
75	Agriculture or land management burns
NN	None
UU	Undetermined

Appendix F

EMS Burn Patients							
Incident Number	Year	Incident Type	Age	Gender	Chief Complaint	Category	Narrative
27681	2008	321	1	F	burn to tip of left index finger	Contact Hot Object - Curling Iron	20 month old female without complaint. Mother states pt grabbed a curling iron and indicated that she had burned herself. Exam to right hand/fingers showed no signs
2965	2010	321	8	M	Burn on backside	Contact Hot Object - Heater	8 Y/O Pt with a burn. Arrived to find Pt leaning over couch with a 1% 1st degree burn and a 1/2% 2nd degree burn to buttocks. Pt grandmother stated that he had just got out of
18261	2010	321	15	F	R leg injury Burn 1 degree	Contact Hot Object - Muffler	she had been knocked to the ground and her lower leg had come in contact with the muffler. She sustained a first degree burn to the distal side of the R calf, without
6850	2009	321	2	F	Burn	Contact Hot Object - Wood stove	2 y/o female care of small partial thickness burn to lateral right humorous after bumping into hot woodstove accidentally. Pt tolerating px very well and burn is approx 2"
8313	2009	111	59	M	DOA	ETOH - DOA house fire	Toned for a possible DOA at stated address. Arrived on scene to be met by POPD who has secured and denied scene entry. I was notified by POPD that an elderly man is
4938	2008	321	30	F	burns to the hands	ETOH - Fell open fire	30 y/o Female c/o Hand burn. Drinking, tripped and fell into a open fire, sustain burns to both hands, Upon my arrival pt alert, rates pain a 10/10, friends @ the scene put copious
17246	2008	112	43	M	Burns on Arms	Explosion	43 y/o was working on vehicle with a sawzall had an explosion with burns involving his left and rights hands/arms. 2nd/ 3rd degree burns, skin sloughing noted, 1st/2nd degree
10582	2009	321	10	M	Burns to face from gasoline explosion	Explosion with Gas	Patient states he dropped a match near some gasoline and it exploded in his face. Temperature hot enough to cause melting of wind breaker and cause 2nd and 3rd degree
16347	2010	321	22	M	Burns secondary to Explosion	Explosion with Gas	22 yo male c/c of pain to hands and face. Pt he had a five gallon can of gasoline that he was dumping onto a pile of cardboard that exploded. Pt stated he had 6 coors lite prior
16347	2010	321	28	M	Burns secondary to explosion	Explosion with Gas	pt. 1 of 2, who is a 28 y/o male who states he was attempting to light a fire with a 5 gallon gas can when an explosion occurred (Note: after tx. POPD states explosion was not from
10357	2010	321	37	M	flash burns	Explosion with Gas	37 y/o Male c/o Flash burns. Says he gas to start a moderate size burn pile resulting in a large fire ball , pt sustained flash burns to face, lips, singed the hair off the sides of his

5845	2010	163	49	M	Facial pain	Explosion with Gas	49yomPt. stated he was trying to start an outdoor fire with gasoline when it exploded. Pt. stated his head and arms were on fire, pt. stated he rolled on the ground for a few
10582	2009	321	7	M	burns from gas and explosion	Explosion with Gas	7 y/o male with burns about face and hands from gas can explosion. exam: 1st and 2nd degree burns over entire face and neck, and on back of both hands. both lips very
11746	2010	321	24	M	burns	Fell into grease	male outside with water being pored over his left hand. Pt states that he was standing on a milk carton and slipped resulting in his hand going into a deep frying pan up to his elbow.
20927	2009	321	38	M	Splash Burns to hand and lower legs	Fell open fire	38 yo male A&Ox3/3 with 1st and 2nd degree burns to the palm of his right hand TBSA 1% no circumferential burns. Some blistering noted. Pt also has some 1st and 2nd
15616	2008	134	24	F	Minor burn to R hand from Boat Fire	Fire (Boat) - escaping	24 yo female c/o minor burn to R hand from a fully involved boat fire. Pt and 4 others were on a boat in the Sinclair inlet approx 100yards from the PO yacht club. Pt stated
27556	2010	111	31	M	Burns to left fingers 2nd degree	Fire (House) - attempt extinguish	31 yo male at home watching television fell off stand onto floor starting a fire pt. attempted to extinguish unsuccessfully, burning his hand admitted breathing some
22288	2009	111	62	M	1st/ 2nd degree burns >25% of body	Fire (House) - reentered	62y/o male complaining of thermal burns which occurred from house fire. We responded to structure fire with report of injuries to occupant. Pt found ambulatory in
12153	2009	321	6	F	firework injury to legs	Fireworks	Responded to 6 y/o female with 1st and 2nd degree burns to (R/L) medial ankles. Pt at home sitting upright in chair conscious and breathing normal in no distress. Pt mother
16989	2008	321	16	M	1* and 2* burns to face	Fireworks	16 y/o victim of a fireworks injury. Arrived on the scene to find patient with 70% burns to his face (1st and 2nd degree). Pt had small container of gun powder explode 10"
15725	2009	900	26	M	Blew his eye out with fireworks	Fireworks	Little alcohol involved tonight with firework - mortar 26 yo male there is blood blew his eye out by a firework (mortar)
23919	2008	321	10	F	2* burns head, face, arm, leg, ears	Grease fire	PT number 1 is a 10month old F with 2* burns to face,ears,head,R-arm and R-leg. PT received burns from a pan of oil that caught on fire on the stove spraying the PT.
24324	2010	113	26	F	Burns	Grease fire	Pt states she was frying onion rings and the oil caught fire, flashed in her face, causing cinged eyebrows and a burning feeling on inhalation and exhalation and SOB. Pt also
23919	2008	321	10	M	Burns to wrists and hands	Grease fire	Pt was number 2 of 2 in my care from a family of 4 burned by cooking oil. Pt had burns on his wrists and hands from hot cooking oil. Burns appeared to be 1st and 2nd
1171	2010	321	19	M	2nd degree burns, arms ,chest, hands	Grease fire	19 yo male pt, received 2nd degree burns from vegetable oil while trying to put out stove fire with fire ext. oil splattered, pt received 2nd degree burns, quarter sized to

27312	2008	100	25	M	burns	Grease fire	25 y/o male who was caught in kitchen grease fire. Pt with first degree burns and developing minor blisters to forehead, forearms, and popped blister to R thigh. Pt
23919	2008	321	31	M	1st and second degree burns to	Grease fire	Pt received 1st and second degree burns to his R forearm and hand. Pt was picked up at Urgent Care Port Orchard. Pt was 1 of 2 Pts Cared for and Tx by A17.Burns where
23919	2008	321	6	M	Burns	Grease fire	PT#2 in a 6 y/o M with 2* burns to bilateral arms and hands with 2* burns to both feet. PT in obvious pain standing outside of facility. PT has 1* burns to face.
17428	2008	321	2	F	Soup Burns	Scalding	two-year-old female patient who is pulling a bowl of hot top Ramen out of the microwave which she spilled the bowl over her lower chest and upper abdomen. Patient complains
12344	2010	321	2	F	Coffee 'Pain	Scalding	2yof with burns. Arrived to find a 2 yo female in her mothers arms, pt. is crying and appears to be in pain. Pt's mother stated her daughter was in her car and got out of her car
14042	2010	321	44	F	Wtr burns to thighs and deep cut on left	Scalding	44 y/o female who states: she was making some iced tea and boiled some water and put the boiling water in a glass container and it shattered the hot water landed on her inner
31333	2009	321	60	F	Coffee burns	Scalding	60 yo female who called 911 for an assist after controlled fall in the shower. PMHX of HTN lupus, CVAx2 had gotten in the shower after pouring entire pot of coffee into her lap.
19445	2010	321	1	M	Coffee 2nd degree burns.	Scalding	one year old male who reportedly pulled a cup of coffee onto himself. 1% BSA 1st deg/superficial burn to L neck area CHEST-VSstable, LS clear bilat equal symmetrical
1729	2008	321	2	M	Food 1st degree burns	Scalding	Medic 16 to see this two-year-old male patient who was sitting at the sofa when he pulled a hot plate of food over on top of himself. Patient complaints of pain to the left
13096	2008	321	20	M	Wtr 'Burn inj	Scalding	20yo male c/o 1st and 2nd degree burns to his lower legs and tops of his feet secondary to spilling boiling water. Pt states he fell onto the water on the floor after he burned his legs
17205	2010	321	47	M	Wtr burns from water	Scalding	46 yr male who was boiling water for cooking crab and dropped the pot and had the water splash onto his right side of the face/neck along with right shoulder area. Pt
3870	2009	321	59	M	Wtr 'burns	Scalding	59 y/o male cc: 1st and 2nd degree burns (L) anterior foot & lower leg. Pt at home cooking when he spilled boiling water on himself unintentionally. Pt sitting in chair conscious
1849	2010	321	9	M	Coffee spill with 1st degree burn	Scalding	9 mo male spilled a cup of coffee onto clothes mother removed clothes initially crying on ems arrival pt. awake no distress or crying 2'x3' 1st degree burn to left anterior

7310	2010	321	91	M	Burned himself - Suicide, DOA	Suicide - himself on fire	found elderly male with obvious 2nd/3rd degree burns to 100% of his body. E08 extinguished shoe that was still on fire. M08 confirmed DOA, 91 YOM saying he is
19058	2010	321	56	M	Burns on feet	Walked on hot coals	56 y/o male with ALOC. Rp states Pt was seen yesterday for third degree burns on his feet, but noticed the Pt had a ALOC and was possibly dehydrated. Pt states he got the

Patients 40