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# Analysis of Minority Student Recruiting Within the Denver Health Paramedic School

Mike Nugent  
*Regis University*

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Running head: ANALYSIS OF MINORITY STUDENT RECRUITING

Analysis of Minority Student Recruiting within the Denver Health Paramedic School

Mike Nugent

Regis University

### Abstract

Since its inception in 1999, the Denver Health Paramedic School has had central to its mission the successful recruitment of minority paramedic students. Thus far, the education program has failed to produce a student body representative of minority ratios found within the state of Colorado. An action research model was employed to study the myriad of issues affecting successful minority recruitment. Through data collection including training program surveys and minority paramedic graduate interviews, the causative factors for this recruitment failure were identified and data-driven intervention strategies to improve this situation were recommended. Following consultation and discussion between the research collaborative group and action researcher, a decision was made to implement a minority recruitment program.

## Analysis of Minority Student Recruiting within the Denver Health Paramedic School

Since 1999, the Denver Health Paramedic School, a division of Denver Health Medical Center, has had central to its mission the recruitment of minority student applicants. Now in its fifth year of operation, the program has failed to produce the number of minority paramedic graduates originally anticipated. The lack of minority paramedic students could potentially negatively impact Denver Health's medically underserved patient populations. Research has shown that minority patients perceive better communication and care from race concordant health care provider and patient relationships (IOM, 2003). Prior to this action research project, the school had yet to employ a systemic approach to research the causative factors of this recruitment failure. The Paramedic School stakeholders agreed to participate in an action research project that identified the primary barriers to student diversity within the program, successful recruitment strategies being used by other national paramedic education programs, and interventions that could be put into practice to recruit more minority students.

### *Emergency Medical Services Education*

Emergency medical services (EMS) is defined as a national network of services coordinated to provide aid and medical assistance from primary response to definitive care; it involves personnel trained in rescue, stabilization, transportation, and advanced treatment of traumatic or medical emergencies (Sanders, 2000). Since its creation, emergency medical services (EMS) education has evolved and matured. During the last thirty years, effective components of quality EMS education have emerged, including national standard EMS curricula, accreditation standards, and a national registration system (National Highway Traffic Safety Administration [NHTSA], 1996). Beginning in the 1960s, EMS joined the ranks of physicians and nurses to provide medical and trauma care to patients in this country. In 1966, Congress

passed the Allied Health Professions Training Act (NHTSA, 1996). This legislation gave the American Medical Association (AMA) the authority to grant authorization to institutions that provide training to allied health professionals. In 1973, Congress passed the Emergency Medical Services Systems Act, which granted funds for the establishment of regional EMS systems that embraced fifteen key components, including training and manpower (Pons, 1997). From this key piece of legislation, EMS education was ensured a prominent place in EMS system development.

During the 1970s and 1980s, there was an increase in quantity and quality of non-federal EMS education support materials (Pons, 1997). This prevalence of instructor resource materials soon led to an increase in the number of trained and certified EMS providers. In 1990, recognizing the need to look more comprehensively at the future of EMS education, the National Highway and Safety Administration (NHTSA) convened a working group entitled the Consensus Workshop on Emergency Medical Services Training Programs (National Highway Traffic Safety Administration, 1996). For the first time, EMS representatives discussed the national training needs of EMS providers and identified the priority needs for EMS training. The priorities established at this consensus meeting determined the national priorities for EMS education that are still being addressed today.

#### *Paramedic Certification Process*

EMS personnel are licensed or certified in all states. The state EMS office or state health department is usually responsible for this process, although in some states, advanced life support personnel such as paramedics are licensed or certified through the state's medical board. To become a paramedic, an EMS provider must first become an Emergency Medical Technician-Basic (EMT-B). The EMT-B course is normally 200 hours in length, with the graduate demonstrating competency in patient assessment, bleeding control, immobilization of injured

bones including the spine, and cardiopulmonary resuscitation. The Emergency Medical Technician-Paramedic (Paramedic) represents the highest level of pre-hospital certification. The average paramedic course is in excess of 1,200 hours of coursework broken up into the following three phases (National Highway Traffic Safety Administration, 1998):

1. The didactic instruction phase represents the delivery of primarily cognitive material. Also included in this phase of paramedic education is the skills laboratory. The skills laboratory provides the student an opportunity to apply and integrate didactic knowledge into patient management.
2. The clinical education phase reinforces the didactic and skills laboratory components of the program. Students care for actual patients in hospital departments such as the emergency department, obstetrics, pediatrics, and anesthesiology.
3. The field internship phase enables the student to integrate all of the didactic, psychomotor skills, and clinical instruction into the ability to serve as an entry-level paramedic. The field internship occurs at the end of the program and while under the close supervision of a paramedic preceptor.

### *Background of the Organization*

The Denver Health Medical Center is located in Denver County and serves as the Rocky Mountain region's safety net hospital and premier Level 1 trauma center. Denver Health operates a unique, integrated health system that includes: The Rocky Mountain Regional Trauma Center for Children and Adults, Denver Department of Public Health, Rocky Mountain Poison and Drug Center, and the Denver Paramedics who are the sole provider of 911 emergency medical services for the City and County of Denver. The Denver Health Paramedic School (Paramedic School), a branch of the Denver Health Paramedic Division, is a state of Colorado

approved training center that currently provides initial and continuing education to EMS professionals (Denver Health Paramedic Division, para 1).

The demand for quality paramedic education within Colorado has steadily increased over the last several years (Denver Health Paramedic Division, para 3). Much of this demand seems to be the result of an aging public safety workforce and the growth of suburban communities. The Paramedic School has enjoyed a steady increase in applicants over the last four years, with no concerted marketing effort or recruitment strategies. Despite being the most expensive paramedic education program in the region at \$6,500 per student, the program admission process remains extremely competitive with nearly seventy-five applicants for every class of twenty-four students.

From 1999 to 2003, I served as Program Director for the Paramedic School. As one of the program's co-founders, I was intimately involved with all aspects of the school's development and program implementation. Since leaving the program, I have remained active in the program's quality improvement and student recruitment efforts. I currently sit on the Paramedic School Advisory Committee and am familiar with the future challenges it faces.

### *Problem*

*History of the problem.* Since its inception in 1999, the Paramedic School has focused its development and implementation on three primary objectives. First, the paramedic education program would recruit students from rural communities throughout Colorado who, after completing their training, would then return to their respective regions to practice as paramedics. It is hoped that the training they received at Denver Health would create a sense of loyalty to the institution and that this loyalty would produce increased revenue for Denver Health in the form of trauma referrals. Second, the Denver Health Paramedic Division would have the luxury of

recruiting and hiring the most talented students from the education program. Lastly, the Paramedic School would serve as a platform to recruit minority paramedic students. Ideally, the paramedic education's course composition would reflect the racial demographics found within the State of Colorado.

There is an increasing awareness of the positive impact a well-managed, diverse workforce can have on organization productivity and creativity. In the public sector, diversity can mean more than just a political mandate; it can also be seen as an issue of basic fairness – the government that serves the community ideally should reflect the community it serves (Maxfield, 2003). Furthermore, because of the need to be accountable to taxpayers, public employers tend to be subject to greater scrutiny than private sector employers. A discrimination charge by an employee can have a widespread negative impact on how the citizens view their government and agencies supported by public funds. Denver Health Medical Center receives nearly seven percent of its annual operations budget from the city of Denver and thus can be considered a governmental organization by structure as well as function.

*Problem statement.* The Denver Health Medical Center administration had hoped that the composition of each Paramedic School class would reflect the racial diversity found within the state of Colorado. The Denver Health Paramedic School has conducted five courses thus far and failed to produce the racial distribution of students initially envisioned. Through this action research project, the causative factors for this recruitment failure were identified and data-driven intervention strategies to improve this situation were recommended.

#### *Literature Review*

Increasing diversity in the health care workforce has emerged as a critical issue for the U.S. health care system. Research has shown that medical care for minority patients is simply

not of the quality as that received by whites (IOM, 2003). The Institute of Medicine (IOM) has concluded that both conscious and unconscious bias and stereotyping about minority patients influences clinical decisions and care delivery (IOM, 2003). Research on physician patterns of information-giving during medical encounters has found that physicians provide more information to white patients than they do to black and Hispanic patients regardless of physician ethnicity (Sleath et al., 2001). Similarly, research on physician question-asking patterns has shown that physicians demonstrate better question-asking skills with Non-Hispanic white patients compared to Hispanic patients (Hooper et al., 1982 as cited by Sleath et al., 2001). It is logical to assume that minority patients are more trusting of minority health care providers and may be less trustful of white clinicians. At least two major U.S. studies (Collins et al., 2002 & Malat, 2001) have reported that minority patients perceive more respect and better communications in race-concordant patient-provider relationships.

Unfortunately, health care in general is failing to produce minority providers at an appreciable rate. In the U.S. health care system, there are approximately 2.2 million employed nurses; 600,000 physicians; and 153,000 dentists. While African Americans, Hispanic Americans, and American Indians represent more than 25 percent of the U.S. population, less than nine percent of nurses, six percent of physicians, and five percent of dentists are from these populations (IOM, 2003).

Advocates for workforce diversity assert that diversity offers organizations a number of benefits (Benibo, 1997). Diversity promises multiple perspectives and expansion of meanings when the existing approach to problems needs alteration (Cox & Blake, 1991). In addition, diversity can promote greater receptivity to needed new ideas and the experimentation with alternative techniques, both of which facilitate creativity (Cox and Blake, 1991). Diversity also

ensures flexibility in responses to rapidly changing environments (Cox and Blake, 1991).

Another potential benefit is that recruiting employees from a wider range of age and ethnicity gives the organization a larger talent pool from which to choose, increasing the probability of acquiring higher-skilled employees (Gudmundson & Hartenian, 2000). Given current trends in racial, ethnic, and sex composition of the American labor force and consumers, the economic benefits of workplace diversity are difficult to ignore (Friedman, 1991). All organizations will ultimately benefit from diversity, especially in a rapidly changing and increasingly interdependent world (Cox & Blake, 1991).

There is a lack of research regarding minority presence and recruitment in EMS education. This action research project has explored the minority presence in paramedic education programs nationally and identified what strategies are needed to increase minority student enrollment at the Denver Health Paramedic School.

## Method

### *Action Research Methodology*

To study the issue of minority recruitment at the Denver Health Paramedic School action research was used. Action research has been used successfully to facilitate change and improve service provision in industry, education and more recently in health care (Hampshire, 2000). Zuber-Skerritt, an experienced organization development practitioner, has concluded that action research is organizational change “best practice” and highlights the importance of participants being able to critically reflect on their own practice (Zuber-Skerritt, 1996 as cited by Hampshire, 2000). These inherent benefits of action research were helpful in considering the complex issue of race and student recruitment. Participants were encouraged to reflect on personal beliefs and convictions that may affect the Paramedic School’s ability to achieve a racially diverse student

body. Action research has been successfully used to improved processes at Denver Health in the past; however, no research projects have ever been initiated within the Paramedic School.

Action research usually arises from a problem or ambiguity in the environment in which practitioners find themselves. It is a practical research process that usually requires three conditions to be met (Swann, 2002). First, the problem normally is located in an organizational setting that must be changed; second, it is a collaborative process in which participants must work together in an equitable fashion; and third, the project proceeds through cycles of planning, acting, observing, and reflecting in a systematic manner. The iterative process of plan-act-observe-reflect enables research participants to consider current concepts being studied and provides a forum for retrospective analysis that can be beneficial. Given the complexities inherent to minority student recruitment and a large organization such as Denver Health, a collaborative approach was critical to bring together diverse participants with new ideas and approaches.

Action research can be empowering to employees in the workplace, allowing them to be part of the research process and encouraging these individuals to learn and change. Lewin developed action research through his analysis of group decision making (Lewin, 1947 as cited by Hampshire, 2000). He believed that individuals require an outside intervention to change and that participants' desire to conform to group norms provides a key force for such change. Action research provides this conceptual structure to encourage individuals to consider new approaches and ideas. Action research methods provide the necessary motivation for such discussions to move from theory to practice.

Practitioners have not universally embraced action research as an effective study methodology. Critics point out the tremendous amount of time required maintaining

collaboration with participants and the negative effect staff turnover has on research projects (Meyer, 2000). Action research is a qualitative methodology. As such, many studies are challenged to produce statistically significant differences related to interventions. Although the strength of action research is its ability to influence practice positively while simultaneously gathering data to share with a wider audience, new knowledge generated through action research studies may not enter the public domain (Meyer, 2000). This does not mean that action research is not visible within an organizational context; inherent to the methodology is a demand for public accountability and critical self-evaluation.

#### *Action Research Model*

In considering the many research models that can be used in studying organizational problems, the Frohman, Sashkin, and Kavanagh's Seven-Phase Model (Regis, 2004) is most appropriate for the Denver Health Paramedic School. In general, the seven-phase model has a wide range of applications and is especially important to researchers for three reasons: (a) It reinforces the centrality of data in the process of organization development (OD) and change, (b) shows how and when data should be used to inform OD practice, and (c) is based on a systems approach to organizations (Waclawski & Church, 2001).

Based on Lewin's action research framework, this model consists of seven distinct phases: scouting, entry, data collection, data feedback to client, diagnosis, action planning, action implementation and evaluation (See Table 1). Each step of the action research framework provides the researcher and participants the necessary foundation to clearly identify problems and develop interventions that will lead to organizational improvement.

Table 1

Action Research Seven-Step Model Adapted from Frohman, Sashkin, and Kavanagh

<b>Step #</b>	<b>Activity</b>
Step 1	Scouting
Step 2	Entry
Step 3	Data collection
Step 4	Data feedback to client
Step 5	Diagnosis
Step 6	Action planning
Step 7	Action implementation and evaluation

*Note.* Adapted from *Applied Action Research* (p. 26) by Regis University (2004), Denver, CO: author.

### *Scouting*

Step one, scouting, explores the relationship between the researcher and those organizational members who will ultimately be affected by the action research project. Congruency in existing assumptions and shared values is essential. As a former program director and cofounder of the Denver Health Paramedic School, I was familiar with the many aspects of the school's structure, policies, procedures, and challenges. I had scouted the organization and was confident that my assumptions and values related to minority recruitment were congruent with those of the research collaborative group.

### *Entry*

Step two, entry, represents the first meeting between the researcher and organizational participants. Both parties assess each other to determine whether collaboration is possible and probable. This includes the organization's attempt to determine the competency and experience

of the researcher, as well as the researcher's assessment of the problem and its underlying causes. The researcher must determine whether the action research participants are motivated and committed to initiating a change effort. If both parties feel that a collaborative effort is feasible, contracting occurs to establish roles, expectations and anticipated outcomes for the change effort.

My entry into the organization and action research process was successful. As a researcher, organizational participants were confident that I possessed the requisite experience and insight to explore minority recruitment within the Paramedic School. In addition, the collaborative group was enthusiastic to collect and analyze data related to this problem and explore possible interventions.

In determining the construct of my collaborative group, I gave careful consideration to organization structure and culture. The collaborative group was comprised of the following members:

1. The Manager of EMS Education Department who holds an A.S. degree in Emergency Medical Care from New Hampshire Technical College, and a B.A. from the University of New Hampshire. After 24 years of service, he retired from the Concord Fire Department in 1999 at the rank of Captain. He has been with the EMS Education Department since 2000. The Manager formally endorsed the action research project and provided the necessary resources and infrastructure to accomplish our data collection objectives. He provided meeting space, Internet access, and staff relief time for those participating.
2. The Program Director of the Denver Health Paramedic School who has 18 years of EMS experience, including roles as Senior Paramedic and Field Trainer with the Denver Health Paramedic Division. Currently the Program Director for the Paramedic School, he

has been with the Division since 1989. The Program Director provided baseline data to measure the existing minority distribution within the Paramedic School. Once the data collection instruments were developed and approved by the collaborative group, he used existing relationships with paramedic schools nationally to ensure that our surveys were completed and returned in a timely fashion.

3. The Recruiter/Clinical Coordinator of the Denver Health Paramedic School who is a graduate of Regis University with a B.S. in Health Care Administration. She has over ten years experience as a paramedic with Denver Health and other agencies. She provided critical input into the operational feasibility of action research interventions and evaluating the success and failure of such changes.
4. The Community College of Denver EMS Program Director who has been with the Paramedic School since 1997. In 1999, he was assigned to the Community College of Denver to implement a cooperative relationship between the college and Denver Health EMS Education Department. He used his relationships at the community college and experience in minority recruitment to inform the action research project.

#### *Data Collection*

Stage three, data collection, provides an opportunity for the researcher and participants to collect data in order to gain a better understanding of the problem symptoms and underlying issues at hand. The researcher and collaborative group must agree on the data collection instruments and the methodology that will be employed to gather information. Central to the development of data collection strategies are the concepts of triangulation, validity, and reliability.

Triangulation is defined as the use of multiple methods or perspectives for the collection and interpretation of data about a phenomenon, in order to obtain an accurate representation of reality (Polit & Hungler, 1999 as cited by Foss & Ellefsen, 2002). Triangulation has the potential to present a multifaceted view of a problem by combining different research strategies. The complexity of minority recruitment demands a triangulated approach with data collected from students, training centers, and those that specialize in minority recruitment. It is important that the action research incorporate varying perspectives and beliefs about minority recruitment.

The situational nature of action research means that study construct is led by the identified problem rather than a particular methodology, and may be affected by the dynamics of the situation itself (Badger, 2000). Research validity is frequently defined as the need for soundness and accuracy in study measurement and interpretation. As in other research methodologies, action research requires validity in study construct and implementation. Reliability is the ability to reproduce consistency of measurements in an action research environment. When conducting action research, the iterative nature of the model allows some relaxation in assuring the reliability of data collection instruments. In qualitative study such as action research, reliability and validity may be considered less important than reflexivity- the process of considering how the researcher's own actions, beliefs and values have affected the situation and its interpretation (Badger, 2000). Avis (1995) suggests that action research relies on face validity alone, that is the subjective judgment that findings appear to fit reality. Waterman (1998) argues that the measure of validity is not the degree of change effected, but rather the analysis of intentions and actions, their ethical implications and consequences. Reliability may be viewed as an aspect of validity, with components of both subject and observer bias and error (Robson, 1993 as cited by Badger, 2000). The collaborative aspect of action

research seeks to overcome this through checking the congruence of others' interpretations of the data with the researcher's own interpretation (Waterman, 1998). In considering the importance of triangulation, validity, and reliability in action research I selected both individual interviews and surveys to collect minority recruitment data.

*Paramedic School Minority Graduate Interviews.* Four minority graduates of the Denver Health Paramedic School were interviewed to identify motivations for attending the program, existing barriers that may prohibit minorities from applying, and strategies for improving minority attendance. Individual interviews can be structured or unstructured, open-ended or fixed-response, formal or informal (Nadler, 1977, p.121). There are strengths and weaknesses to each type of interview. For the purposes of exploring the issues surrounding minority recruitment the structured, open-ended formal interview was used (Appendix B). Using this type of interview, the interviewer has predetermined questions covering certain topics, but the respondent is unconstrained in answering (Nadler, 1977, p.123). Each interview was conducted in a predetermined location and for a set amount of time. This interview structure was selected for two primary reasons. First, the researcher hoped to explore the complexities of minority recruitment and minority perceptions regarding the field of emergency medical services. To accomplish this objective, adaptation during discussion and follow-up questions was necessary. The selection of a formal interview structure provided this latitude. Second, specific quotations or examples from the interviews were helpful to illustrate a finding or pattern in the data (Nadler, 1977, p.123).

There are potential problems in using interviews for collecting data. First, interviews can be expensive (Nadler, 1977, p.123). Second, interviews can easily be biased in their development and implementation. Researchers can bias the responses during the interview by

his or her choice of questions. Bias can also be present in less obvious behaviors on the part of the researcher such as non-verbal communication that may influence responses. In addition, the interview responses do not represent direct information on behavior, but instead provide a report on an organization member's feelings and perceptions (Nadler, 1977, p.123). When using individual interviews to collect data during this action research project, several controls were put in place to reduce the impact of these problems. The interviews were relatively inexpensive; the four minority graduates agreed to volunteer an hour of their time. As the researcher, my time was also provided at no expense. In an effort to reduce the probability of researcher bias, interview questions were developed and pilot tested with input from the collaborative group. The structured interview used in this project also reduced the potential for bias.

*Paramedic School Survey.* A survey is a method of collecting information from people about their ideas, feelings, health, plans, beliefs, and social, educational, and financial background (Fink, A. & Kosecoff, J., 1998). Web-based surveys were used to collect data relevant to minority recruitment. This method involves posting a questionnaire on a web site, with respondents typically replying from individual computers remotely, although computers can also be set up at a central interview site (Diem, 2003). This type of survey enables participants to respond quickly and easily. In addition to the added benefit of eliminating postage, the web software also summarizes response data. One disadvantage to this type of survey is the requirement of web access for participants. Prior to the distribution of the web-based survey, research participants indicated that they felt comfortable completing the survey and that web access would not be a problem.

A web-based survey was distributed to a selection of paramedic schools (Appendix C). Based on input from the collaborative group and the action researcher, only paramedic education

programs accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) were surveyed. Accreditation by CAAHEP is considered the standard for quality paramedic schools nationally and thus facilitated some uniformity in data collection and reporting. Nine schools were contacted and asked to participate. The program director of each paramedic school served as the point of contact for receiving and completing the survey. Prior to distributing the survey, the nine program directors were contacted via phone and provided a brief summary of the action research project and a date when survey results would be made available to participating programs.

The survey collected data detailing the program's minority distribution within classes conducted from 2000-2004. In addition, survey questions were asked to determine whether minority recruitment is a program objective, if specialized marketing or minority incentive programs are in place, and if the presence of strategic partnerships between the paramedic school and minority associations or organizations has increased minority attendance within their programs (Appendix C). Once minority enrollment data had been collected, the participant school's student racial distribution from 2000-2004 was compared to their respective state's racial distribution as indicated in the 2000 Census report.

*Allied Health Training Program Survey.* A second web-based survey was distributed to allied health program directors employed at Colorado community colleges (Appendix D). Two inclusion criteria were required for a community college to participate. First, the community college had an allied-health training program that was similar in length and prerequisite coursework to the Paramedic School. Second, the allied health program graduates had a starting salary commensurate with that of an entry-level paramedic. This survey helped to identify the number of minorities recruited by allied health training centers of similar construct as the

paramedic school and what strategies had been used effectively in achieving this goal. Ten schools were asked to participate and the individual within each school who received the request was selected by the allied health program director.

*Anatomy and Physiology Course Student Survey.* A third web-based survey was distributed to students enrolled in anatomy and physiology courses at the Community College of Denver (Appendix E). Participants were asked to identify their declared major, whether they planned to pursue training in an allied health discipline, and their perceptions about emergency medical services as a career choice. An estimated 120 students, all enrolled in online anatomy and physiology courses at Community College of Denver, were selected to participate in the action research project. Online students were selected for two primary reasons. First, students pursuing distance education coursework are usually comfortable using email and web-based applications. This familiarity with the technology used increased the number of surveys returned. Second, students enrolled in online courses usually are motivated and independent learners. Once the researcher and collaborative group had finalized the survey, the Biology Department chair reviewed the instrument and gave formal permission for its distribution. Each professor teaching the online courses distributed the web-based survey to their students. The participating professors and the researcher communicated via email during the data-collection period to assure that the maximum amount of surveys were completed and returned.

### Results and Discussion

This action research project explored the complexity of minority recruitment within the Denver Health Paramedic School by collecting data from several different sources. Paramedic schools from throughout the United States were provided an opportunity to give input regarding successful recruitment strategies, existing barriers that stifle minority recruitment efforts, and

their program's minority enrollment during the years of 2000-2004. Minority graduates of the Denver Health Paramedic School shared their perceptions about EMS as a field, how they were attracted to a career as a paramedic, and what recruitment efforts might be effective in the future. Allied health training programs that competed in similar markets as the Paramedic School shared special incentives they offered to recruit qualified minority applicants. Finally, both minority and non-minority students enrolled in anatomy and physiology courses at the Community College of Denver were asked about their major, future career aspirations, and their degree of familiarity with the field of EMS.

#### *Interviews with Minority Paramedic School Graduates*

Denver Health Paramedic School minority graduate interviews (Appendix B) were conducted on January 13, 20, and 27, 2005. Three minority graduates were interviewed while one declined. The interview duration varied from 30 minutes to approximately 45 minutes.

The results of the interview provide some insight into how prospective minority students can be recruited into the field of EMS. All interview participants stated they had previously been recruited as a minority for an educational program or employment but none of these recruitments were EMS related. Recruitment included summer enrichment programs, academic scholarships, and grants. The interview participants had similar experiences that fostered awareness about health care as a career. All the interviewees stated that they had a close family member in the field of health care and that this person encouraged them to consider medicine as a career. Two out of the three interviewees stated that they used internships as high school and college students to see whether health care would be a good fit for them. It was during these internships that the interview participants received their initial introduction to EMS. The interview participants

stated that the excitement of EMS and a relatively short training period appealed to them. All three interview participants were currently, or had previously, attended college.

There seems to be a significant amount of confusion in Denver metro minority communities about EMS. An interview participant stated that most minority community members believe that EMS and the fire department are the same agency. Although this is accurate in some instances, the majority of EMS agencies are separate from fire departments. The interview participant stated that this confusion might cause prospective minority students interested in EMS to apply for fire department vacancies instead of pursuing EMS training. Another interview participant stated that minority members are confused about the function of EMS. She stated that most minorities believe that paramedics are very similar to physicians and that it takes years of training to gain entry into the field of EMS.

Interview participants identified barriers to minority student recruitment within the Denver Health Paramedic School. All three interview participants stated that minority students need entry-level jobs in EMS to help them fund the required training to become a paramedic. All three interview participants also stated that the process of becoming a paramedic is too long in comparison to entry-level jobs in the fire service and law enforcement. One interviewee pointed out that the national trend of lengthier training periods for EMS providers and increased prerequisite work will only exacerbate this problem. An individual wanting to become a paramedic must complete at least two years of education and training; prospective police officers and firefighters are not required to attend any courses prior to getting hired by these agencies. All three interview participants affirmed a lack of awareness and inaccurate perceptions of EMS in minority communities. All three interview participants stated that there is a need for active EMS

recruitment in minority communities; two of three interviewees stated that such recruitment efforts should be conducted by minority EMS providers.

Interviewees suggested strategies that could be implemented to increase minority student recruitment. For example, all interview participants stated that recruitment must begin early, preferably in high school. They also report that partnerships with high school magnet programs, summer enrichment programs, and minority recruiters would improve minority representation within the school. All three interview participants were in agreement about the importance of entry-level jobs and scholarships in attracting minority paramedic school applicants.

Several important findings were derived from this data collection effort. First, awareness of EMS as a career is extremely poor in minority communities. Active recruitment of minority applicants is critical to overcoming this barrier. Once minority applicants express an interest in EMS, they must be provided entry-level jobs that meet their basic needs while completing prerequisite and actual EMS coursework.

#### *Paramedic School Survey*

The Paramedic School Survey (Appendix C) was distributed to 10 paramedic education programs throughout the United States on February 8, 2005 with seven returning the completed survey for a response rate of 70 percent. Each paramedic education program's student racial distribution between the years of 2000-2004 was compared to their respective state's minority census (See Table 2).

Table 2

State Racial Distribution Compared to Paramedic School Racial Distribution

<b>Program Surveyed</b>	White	Black	American Indian and Alaskan Native	Asian	Native Hawaiian and Pacific Islander
DH Program %	94%	2%	0%	2%	2%
State %	93%	4%	1%	2%	0%
Program One %	95%	2%	0%	2%	1%
State %	81%	7%	1%	11%	0%
Program Two %	92%	4%	2%	1%	1%
State %	94%	2%	1%	3%	0%
Program Three %	87%	0%	2%	2%	1%
State %	68%	28%	0%	4%	0%
Program Four %	88%	7%	0%	5%	0%
State %	93%	4%	1%	2%	0%
Program Five %	97%	1%	1%	1%	0%
State %	97%	0%	1%	1%	0%
Program Six %	86%	12%	1%	0%	0%
State %	91%	4%	1%	3%	0%
Program Seven %	100%	0%	0%	0%	0%
State %	85%	12%	1%	3%	0%

Note: State demographics Adapted from U.S. Census Bureau (2000), State and County Quick Facts, [www.census.gov](http://www.census.gov)

Of the seven respondents, 57 percent of programs (N=4) demonstrated greater minority student representation than their host state for white, black, and American Indian/Alaskan Native groups. Only 29 percent of programs (N=2) met or exceeded their state's racial distribution for Asians. Forty-three percent of programs (N=3) met or exceed their state's racial distribution for Native Hawaiian/Pacific Islanders. Paramedic school respondents were asked about their program length. Fifty-seven percent of respondents (N=4) reported a program length between six months and one year with the remaining 43 percent of respondents (N=3) reporting a program length greater than one year. The cost to attend each program including fees, books, and supplies was solicited with 43 percent of respondents (N=3) reporting their tuition between \$3,500 and \$5,000 per year. Fifty-seven percent of programs reported a cost greater than \$5,000 per year. Respondents were asked to list the various types of financial aid available to their students. Eighty-six percent (N=6) of the programs surveyed reported financial aid was available to their students; one program surveyed had no financial aid options available to paramedic students. Of the six programs that did offer financial aid, half of the programs (N=3) offered minority specific grants that could pay student tuition, fees, books, and supplies.

All of the surveyed programs rated their students' employment prospects as "Favorable" or "Very Favorable." When asked whether the respondent's program placed a special emphasis on recruiting minority paramedic students, 29 percent (N=2) reported a special emphasis placed on this activity. These two programs also reported the implementation of strategic partnerships with high schools and magnet programs to increase their minority student recruitment.

Participating programs were asked to rate the significance of various recruitment barriers. Eight-six percent (N=6) of programs ranked "Student awareness of EMS as a career" as being a significant barrier. All seven programs rated student opportunities for income generation as

being significant. Seventy-one percent of programs (N=5) reported that resources dedicated to minority recruitment were definitely significant in increasing minority attendance. Only one of seven programs (14%) described the amount of prerequisite coursework required to attend paramedic school as being a significant barrier.

Results of the paramedic school survey yielded several significant points related to minority recruitment. Program cost and length do not seem to positively or negatively impact minority recruitment. The research collaborative group and the researcher speculated that the disappointing minority representation within the Paramedic School was related to the program's high tuition (greater than \$5,000) and its length (greater than 1 year). The paramedic school survey data did not demonstrate a correlation between program cost and length and minority student attendance. Surprisingly, awareness of EMS as a career option and a lack of financial aid seem to be the biggest barriers to the successful recruitment of minority students.

#### *Allied Health Program Survey*

On January 26, 2005 the Allied Health Program Survey (Appendix D) was distributed to nine allied health training programs in Colorado. Seven allied health programs responded, for a response rate of 78 percent. Each allied health program's student racial distribution between the years of 2000-2004 was compared to Colorado's minority census (See Table 3).

Table 3

Allied Health Program Racial Distribution Compared to Colorado Racial Distribution

Program Surveyed	White	Black	American Indian and Alaskan Native	Asian	Native Hawaiian and Pacific Islander
CO State %	93%	4%	1%	2%	0%
DH Program %	94%	2%	0%	2%	2%
Program One %	91%	0%	6%	3%	0%
Program Two %	89%	6%	0%	4%	1%
Program Three %	91%	5%	0%	4%	0%
Program Four %	90%	0%	0%	10%	0%
Program Five %	61%	12%	12%	12%	3%
Program Six %	80%	7%	0%	13%	0%
Program Seven %	99%	1%	0%	0%	0%

Adapted from U.S. Census Bureau (2000), State and County Quick Facts, [www.census.gov](http://www.census.gov)

Out of the seven respondents, 57 percent (N=4) of allied health programs exceeded Colorado’s racial distribution for blacks; 29 percent of programs (N=2) exceeded Colorado’s percentage of American Indian/Alaskan Natives and Native Hawaiian/Pacific Islanders; 86 percent of allied health programs (N=6) exceeded Colorado’s racial distribution for Asians. Only one program (14%) had a greater percentage of white students than the state of Colorado.

Allied health programs were surveyed about the amount of prerequisite course work required to gain admission to their school. Fifty-seven percent of programs (N=4) require less than 12 semester hours of prerequisite coursework; 29 percent (N=2) require between 12-24

semester hours; one program (14%) requires between 24-36 semester hours. All seven allied health program respondents state that their program length is greater than one year. When allied health programs were asked to rate their students' employment prospects upon graduation, 57 percent (N=4) stated employment prospects were "Very Favorable" with the remaining 43 (N=3) rating prospects as "Favorable."

Allied health programs were asked about the cost of attending their program including fees, books, and additional supplies. Fifty-seven percent (N=4) reported their program cost more than \$5,000; 29 percent (N=2) of programs cost between \$2,500-\$3,500; one program (14%) cost between \$3,500-\$5,000. Programs were asked to list the forms of financial aid they offer including Pell Grants, campus-based aid, Stafford Loans, Plus Loans, scholarships, and other grants. All seven programs reported offering Pell Grants and scholarships to their paramedic students. Eighty-six percent of programs (N=6) offer both campus-based aid and Stafford Loans. Fifty-seven percent of programs (N=4) offer both Plus Loans and other types of grants besides Pell Grants.

Allied health programs were surveyed about whether they place a specific emphasis on minority student recruitment and if they have specific marketing strategies in place to attract minority applicants. Only one program (14%) stated they place a specific emphasis on recruiting minority allied health students and had developed marketing strategies to further this goal. This program explained that they had received an ethnic diversity grant that was used to develop minority recruitment materials to be sent to local high schools. Twenty-nine percent of allied health programs (N=2) have developed strategic partnerships with organizations or associations to increase minority student attendance. When asked which strategic partnerships were most effective, one program representative stated that collaboration with local junior colleges had

been extremely helpful in minority recruitment; the other program respondent reported that their partnership was too new to evaluate its efficacy. Finally, allied health programs were asked what barriers they had encountered in attempting to recruit minority paramedic students. One program respondent commented that the amount of time required to become a medical professional is a significant barrier to single parents wanting to pursue a career in health care. Twenty-nine percent of programs (N=2) identified language as a significant barrier.

Prior to surveying the allied health programs, several members of the research collaborative group speculated that health professions other than EMS were more successful in their minority recruitment efforts. The data submitted by participating allied health programs does not support this premise. Minority student attendance in allied health programs is comparable to that of paramedic schools surveyed. Allied health program length and employment prospects upon graduation were also consistent with paramedic schools and do not seem to be significant barriers to minority recruitment.

#### *Anatomy and Physiology Student Survey*

The Anatomy and Physiology Student Survey (Appendix E) was distributed to 120 Community College of Denver students on February 16, 2005 with 48 returning the completed survey for a response rate of 40 percent. Students were surveyed about their declared major. Fifty-six percent (N=27) declared nursing; 19 percent (N=9) were undeclared; 13 percent (N=6) declared radiology; four percent (N=2) declared pre-med; two percent (N=1) declared nutrition; and two percent (N=1) declared pharmacy as their major.

Students were asked if they planned on pursuing a career in the field of health care. Of the 48 respondents, 92 percent (N=44) of students stated they were planning on pursuing a health

care career; four percent (N=2) of students had no plans on pursuing a career in health care; four percent (N=2) were undecided about health care as a career.

Students were asked whether they had ever considered a career as an emergency medical technician. Thirty-three percent (N=16) of students surveyed stated they had considered this career and 67 percent (N=32) denied ever considering a career as an emergency medical technician. When asked to rate their level of familiarity with the required steps of becoming an emergency medical technician, 71 percent (N=34) of respondents stated they were “not familiar at all” with the requirements; 21 percent (N=10) were “somewhat familiar”; eight percent (N=4) stated they were very familiar with the required steps of becoming an emergency medical technician.

Respondents were asked to voluntarily provide their racial classification. Eighty-six percent of respondents (N=42) were White; six percent (N=3) were Black; four percent (N=2) were American Indian and Alaskan Native; two percent (N=1) were Asian. No student identified himself or herself as Native Hawaiian and Pacific Islander. Of those students identified as minorities, none indicated an interest in EMS.

The Anatomy and Physiology Survey shed light on two important issues related to EMS and minority recruitment. First, 19 percent of respondents reported their major as “undeclared.” This finding was encouraging to the collaborative group. There is a group of college students that have an interest in the medical field but have yet to select a vocation. These students could potentially be interested in EMS. Second, 67 percent (N=32) of respondents deny ever considering a career in EMS with 71 percent (N=34) of respondents stating that they were “not familiar at all” with the requirements to become an EMT. In order to improve minority student

recruitment, prospective applicants need to have heard about EMS and have some familiarity with the steps in becoming an EMT.

### *Data Findings Summary*

The data collected during this action research project provided insight into the complexities of minority recruitment in health education programs. The data demonstrated that the Denver Health Paramedic School's minority representation is not dissimilar to the paramedic schools and allied health programs surveyed. Paramedic schools surveyed seem to share common barriers to increasing minority student attendance. Despite favorable employment prospects for graduates of all paramedic schools surveyed, there is a lack of awareness about EMS as a career option for minority students. Another barrier shared by paramedic schools surveyed is a lack of resources and funding to create formal recruitment programs that target minority applicants. A lack of recruitment activities, coupled with poor awareness about EMS in minority communities, seems to hinder greater minority attendance. Paramedic schools surveyed also share a lack of entry level EMS positions or internships to help minority students fund their paramedic education. Finally, the Denver Health Paramedic School is unique in its failure to offer financial aid to its students. The majority of allied health education programs and paramedic schools surveyed are able to offer some form of financial aid to their students.

### *Data Feedback*

Step four in the Frohman, Sashkin, and Kavanagh's Seven-Phase Model (Regis, 2004) is data feedback to the client. The action researcher compiled the survey results and provided a summary to the research collaborative group on May 5, 2005. The collaborative group agreed that 10 days would be sufficient for each group member to review the data and develop some ideas about how minority representation in the Paramedic School could be improved. On May

16, 2005 the research collaborative group met to identify major themes apparent in the data that contributed to the identified problem and impacted the organization. The researcher presented a summary and preliminary interpretation of the data to the collaborative group, followed by a general discussion to clarify information.

### *Diagnosis*

Step five, diagnosis, involves the application of data in determining the causative factors of the identified problem. This process required extensive collaboration between the researcher and participants to properly assess the relationship between the data collected and the identified organizational issues. Much of the data collected during the action research project was from out-of-state paramedic schools and from sources indirectly related to the Denver Health Paramedic School and its primary communities of interest. Consequently, the researcher and collaborative group paid specific attention to how the identified data themes directly related to the Paramedic School's minority recruitment failure. From the data collected, the action research collaborative group was encouraged to develop several different diagnoses of the recruitment failure with the Paramedic School.

### *Action Planning*

Step six, action planning, requires the development of interventions based on an interpretation of the issues inherent in the data itself (Waclawski & Church, 2001). During this phase of the action research project, the researcher encouraged the collaborative group members to select interventions that are a direct reflection of, and response to, the diagnosis. It was important to emphasize to the collaborative group that regardless of the intervention(s) selected, their determination should be based on an interpretation of the issues inherent in the data itself (Waclawski & Church, 2001).

*Work Study Action Plan Alternative*

The first alternative considered was the creation of work study or entry level EMS positions for minority paramedic students. In reviewing the data collected from minority paramedic school graduates, two of three interviewees used internships as a vehicle to pursue a career in health care. Although data collected showed that the amount of prerequisite coursework and length of time required to become a paramedic was not a significant barrier, entry level employment in EMS was shown to be important. The requirements to pursue a career in EMS are greater than those to become a firefighter or police officer. In reviewing research data collected by paramedic schools surveyed, all the programs rated student opportunities for income generation as being significant. The research collaborative group noted that the EMS career requires a degree of maturity found in independent, self-motivated individuals that normally live away from their parents. As such, they have financial pressures that require some income to pay for living expenses during the educational process.

*Minority Recruitment Program Action Plan Alternative*

The second alternative to increase minority student recruitment was the development of a minority specific EMS recruitment program to be presented at high schools and community colleges. The research collaborative group made several significant points related to this action plan alternative. First, the research data reflected that recruitment efforts need to be initiated in an educational environment and must be started early. All the minority paramedic school graduates had previously been recruited for either employment or education programs prior to attending paramedic school. The recruitment environment for qualified minorities is extremely competitive. Twenty-nine percent of paramedic schools surveyed have an established recruitment program for minority applicants. Seventy-one percent of paramedic schools reported

that resources dedicated to minority recruitment were definitely significant to increasing minority student representation. The collaborative group also stated that the recruitment program must place a special emphasis on describing EMS as a career, rather than focusing on specifics about the Denver Health Paramedic School. Eighty-six percent of paramedic schools ranked minority student awareness of EMS as a career as being a significant recruitment barrier. Seventy-seven percent of Anatomy and Physiology students surveyed deny ever considering EMS as a career option. Seventy-one percent of these same respondents stated that they were not familiar with the required steps to become an EMS professional. Finally, one of the minority Paramedic School graduates interviewed stated that the diverse patient populations encountered at the Denver Health Paramedic School were important in deciding which school to attend. The collaborative group agreed that this attribute of the paramedic school should be emphasized when developing a recruitment program.

#### *Financial Aid Action Plan Alternative*

The third action plan alternative was the development of a comprehensive financial aid package tailored to minority student applicants. Of the seven allied health education programs surveyed, all reported the availability of financial aid to students. In particular, four of seven (57%) offered minority-specific grants and all offered student scholarships. Currently, the Denver Health Paramedic School does not offer financial aid to its students. Eighty-six percent of paramedic schools surveyed offer financial aid with 43 percent of these schools having minority-specific grants offered to students. The research collaborative group noted that this action plan alternative may be difficult to implement. The federal government requirements to become a financial aid eligible program are extremely complex. Two collaborative group members questioned whether the Denver Health Paramedic School could meet the basic

eligibility requirements to offer such aid. In addition, the Paramedic School would need to have dedicated staff to administer financial aid and this would be difficult given its current resources.

*Action Plan Selected and Rationale for Use*

In considering the three action plan alternatives, the research collaborative group stated that the development of a minority specific recruitment program would provide the greatest benefit to increasing minority student attendance. Several rationales were presented in support of this alternative. First, the research collaborative group felt that awareness of EMS as a career is the greatest barrier to attracting minority paramedic school applicants. As a profession, EMS is relatively young in comparison to many established vocations. Most fire departments and law enforcement agencies have been in existence for over fifty years and consequently have had a greater opportunity to establish community awareness and recruitment programs. Six of seven (86%) paramedic schools reported that employment prospects for student graduates were “very favorable.” When comparing the Denver Health Paramedic School’s cost and length of study to other allied health programs and paramedic schools, no noticeable differences were noted. Research data collected reflects that cost, required prerequisites, and program length are not a significant barrier to recruiting minority students. Minority students must be exposed to EMS as a career alternative early, preferably at the high school and community college levels.

Second, the research collaborative group felt that Denver Health would provide a greater institutional commitment behind a minority recruitment program than the other action plan alternatives. The recruitment effort would provide great public relations for an institution that depends on community support. Prospective minority paramedic students may decide to pursue a career other than EMS in the field of health care and through exposure to Denver Health select that institution for employment. The development of a minority specific recruitment program is

also relatively inexpensive. Minority paramedics employed at the hospital could be offered an opportunity to conduct recruitment in lieu of working their normal shifts. The research collaborative group expressed that minority recruiters should wear their paramedic uniforms and arrive in a Denver Health Paramedic Division ambulance. Such resources could be provided at little or no cost to the Paramedic School.

#### *Action Implementation and Evaluation*

Step seven, action implementation and evaluation, may require additional data collection to evaluate the efficacy of the change effort. Waclawski and Church (2001) caution the researcher about action research evaluation, “One of the truly unfortunate situations in many organization development (OD) efforts over the past thirty years, and one that has damaged the reputation of the field somewhat as well, has been the lack of significant attention to evaluating the success or failure of an OD process. There is a real need in the field for the consistent application of evaluation strategies to the entire consulting cycle” (p.18). The action researcher must be vigilant in assuring that the success or failures of interventions are evaluated.

#### *Expected Problems and/or Resistance during Implementation*

Although the minority recruitment action plan alternative could be extremely effective, there are some potential problems with this approach. Access to minority students could be difficult. Most high schools have full academic schedules and as such provide limited access to students by outside organizations. Community colleges may see the Paramedic School as a potential competitor for students. Most community colleges want to retain students for a full two years until graduation. The prospect of a student leaving to attend paramedic school might decrease the probability of gaining access to community college enrollees. Some high schools, and most community colleges, have established career fairs. These types of events could provide

an opportunity for minority paramedics to present EMS as a career option with an emphasis on attending the Denver Health Paramedic School.

Another potential problem with establishing a minority recruitment program is how to keep in contact with prospective students as they complete prerequisite work. As mentioned previously, the recruitment environment for minority students is extremely competitive. A high school student who initially expresses an interest in EMS as a career will have to be continuously encouraged to complete prerequisite coursework and stay focused on their goal of becoming a paramedic. The Paramedic School currently has limited staff available for this level of contact. Without dedicating some staff time to active recruitment of minority applicants, these students may very well be attracted to alternate careers or other EMS programs. The research collaborative group suggested two solutions to this expected problem. First, minority paramedics could be assigned prospective students and be provided time to make recruitment phone calls or hold meetings. This provision could be made with little expense. In addition, the collaborative group made a recommendation to establish a student rider program. Although some institutional liability issues would have to be resolved, minority recruits could be allowed to ride on an ambulance with their paramedic mentors periodically to maintain their enthusiasm and interest in the field of EMS. This aspect of the recruitment program could also be implemented quickly and with little expense.

#### *Action Evaluation*

Central to Denver Health's commitment to further diversify its paramedic school's student body will be the continual support and evaluation of the minority recruitment program. Prior to implementing the recruitment program, the collaborative group and researcher will convene a meeting to establish performance indicators to evaluate the efficacy of this

intervention. The performance indicators will encompass such data as the total number of inquiries into the program, number of minority inquiries, total number of applicants to the program each academic year, number of minority applicants, and number of minority graduates. Performance data will be collected twice a year by the program faculty. The program faculty will compile the data and a summary of the recruitment program's activities during the year. At least annually, the collaborative group will reconvene and discuss the Paramedic School's progress towards greater student diversity with particular emphasis on existing interventions and agreed upon performance indicators. If necessary, new interventions or strategies will be developed and implemented to improve minority representation.

#### *Organizational Learning and Objective Analysis*

Denver Health Medical Center benefited greatly from this action research project related to minority paramedic student recruitment. Through the collection of research data, and lengthy discussions with the research collaborative group, the project brought to light the many complexities related to minority representation in the field of health care and more specifically the challenges faced by the Denver Health Paramedic School in attracting diverse student populations. The organization learned that the lack of minority paramedic students is not unique to Denver Health. Of the seven paramedic schools surveyed, only one program (14%) met or exceeded its state's census in each of the four minority groups. Three of seven (43%) paramedic schools met or exceeded their state's census in all but one minority group. Denver Health's goal of promoting a paramedic school racial composition that meets or exceeds the Colorado census is ambitious but achievable. Several collaborative group members expressed early on that other allied health education programs may have had greater success in attracting diverse student populations; however, this assertion was not supported by the research data collected and

presented. Of the seven allied health programs surveyed, only one (14%) met or exceeded Colorado's state census in each of the four minority groups.

Denver Health also learned that some monetary investment will be necessary to achieve the goal of paramedic school diversity, but that money alone will not entirely solve the problem. A sustained, focused effort will need to be put forth to increase minority student recruitment. A robust financial aid program with minority scholarships and grants will have little impact if prospective students are not aware of EMS as a career option.

In my role as an action researcher, this project taught me several important lessons. First, the discussion of race in a work environment is very political and at times uncomfortable. From the moment I initiated and gained approval to research this topic, Denver Health senior leadership expressed enthusiasm but also concern about race as a research topic. I was frequently asked to provide updates related to data collection, findings, and the opinions of the research collaborative group. The minority paramedic school graduate interviews were at times awkward. First and foremost, I perceived the interviewees to be paramedics, members of the same vocation and organization that I belong to. But as our conversations progressed, I soon realized that although they shared many aspects of my identity they also saw themselves as being a part of a minority group. I was surprised to encounter a deep seated commitment by the interviewees to diversify not just the Paramedic School but also the field of EMS. The interview participants expressed enthusiasm about the action research project and offered their assistance in implementing the action plan selected. I was surprised at how many other paramedic schools and allied health education programs were also struggling with this issue. Many agreed to participate only if I shared my research data, results, and recommendations with them. This

concern and enthusiasm by others in my field made me feel that the research topic selected was extremely important and worthwhile.

The action research experience taught me about the difficulties of finishing a project of this magnitude. My collaborative group and other project stakeholders provided a significant amount of support and encouragement during this period. At times, I almost resented their persistence and expectations of me as an action researcher. I was told early on in this process that the collaborative group would be extremely important to the action research project and I am pleased that I selected the group I did.

In retrospect, I would have done several things differently in conducting an action research project. The development and adherence to a research timeline is critical. Although personal and professional distractions will arise, the action researcher owes it to the project stakeholders to adhere to agreed upon deadlines and provide required feedback. At times, I was not as professional as I could have been in this area. Action research is an iterative process that serves as a foundation for organizational discovery and improvement. As such, the researcher must be careful to properly define the project scope. I felt that my project scope would expand quickly during the research period and I would easily become overwhelmed and discouraged. Finally, action research is also a collaborative process. I did not delegate enough tasks to my collaborative group. Although my collaborative group members volunteered their time, I believe their interest and enthusiasm for the project would have allowed each member to contribute more. They would frequently offer to take tasks or assignments from me but I declined. Poor collaboration on my part led to delays in the research project and frustration from the collaborative team.

Thus far in the Paramedic School's development, the program has fulfilled its mission in providing the Paramedic Division qualified, highly trained paramedics to serve the citizens of Denver. Rural EMS providers from throughout Colorado have attended the Paramedic School and returned to their home communities with loyalty to Denver Health Medical Center as the region's premier trauma center. The founding members and program faculty have always felt a sense of frustration that more minorities have not applied to the program to become paramedics. This action research project served to encourage those that believe that the Paramedic School can do more to improve minority recruitment. Currently, the minority representation found in the Paramedic School student body is the result of a passive attempt to reach the program's diversity goals. No concerted marketing effort or recruitment strategies have ever been considered; reputation alone will not attract minority student applicants to the program. This action research project was the first real step at recruiting minority paramedic students. The future success of the Paramedic School's recruitment effort will depend on continued focus and enthusiasm by the project stakeholders to meet this difficult goal.

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Appendix A: Racial Diversity Found within the State of Colorado Compared with Denver Health  
Paramedic School

<b>RACE</b>	<b>Colorado</b>		<b>Denver Health Paramedic School 2000-2004</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
White	3,977,912	93	102	94
Black	165,063	4	2	2
American Indian and Alaskan Native	44,241	1	0	0
Asian	95,213	2	2	2
Native Hawaiian and Pacific Islander	4,621	0	2	2
<b>Total</b>	<b>4,179,074</b>	<b>100</b>	<b>108</b>	<b>100</b>

Adapted from U.S. Census Bureau (2000), State and County Quick Facts, [www.census.gov](http://www.census.gov)

## Appendix B: Denver Health Paramedic School Minority Graduate Interview Schedule

**(10 min.) Introduction to action research project**

- Confidentiality of responses
- Federal definition of minority status
- Additional data collection activities
- Questions from the interview participants

**(20 min.) Emergency medical services as a career**

- How did you hear about EMS as a career?
- Why did you choose EMS as a career? What was appealing about EMS?
- What other careers did you consider?
- Do you have any sense of the image of EMS in the minority community?
- What are the barriers that currently inhibit minority representation in the EMS field?
- Do you think minorities would be more interested in other health care or public safety careers besides EMS? If so, why?

**(20 min.) Denver Health Paramedic School**

- Have you ever been recruited as a minority for an educational program or employment?  
If so, what incentives were offered and how did these influence your decision?
- Given the various schools in Denver, why did you attend the Paramedic School?
- What specific barriers exist that may dissuade a minority student from attending the Denver Paramedic School?
- What incentives could be offered to minorities to recruit them as Paramedic School students?

**(10 min.) Wrap-up**

- If you were program director of the Paramedic School, what strategies would you develop and implement to increase minority attendance?
- Do you have any additional comments or questions regarding the issue of minority recruitment at the Paramedic School?

## Appendix C: Paramedic School Survey

**1. Please list your paramedic student racial distribution between the years 2000-2004:**

Number of students enrolled \_\_\_\_\_

Number of Asian students \_\_\_\_\_

Number of white students \_\_\_\_\_

Number of black students \_\_\_\_\_

Number of American Indian and Alaskan Native students \_\_\_\_\_

Number of Native Hawaiian and Pacific Islander students \_\_\_\_\_

**2. What is the length of your paramedic school, excluding prerequisite coursework?**

- a. 6 months
- b. Between 6 months and 1 year
- c. More than 1 year
- d. Other

**3. What tuition range, including fees, books, and additional supplies best describes your program?**

- a. Less than \$2,500
- b. \$2,500-\$3,500
- c. \$3,500-\$5,000
- d. More than \$5,000

**4. What forms of financial aid does your program offer? Please check all that apply:**

- a. Pell grants
- b. Campus-based aid (e.g. Work study, Federal Perkins Loans)
- c. Stafford loans

- d. Plus loans
- e. Scholarships
- f. Grants
- g. Other

**5. How would you rate student employment prospects upon graduation from your program?**

- a. Very favorable
- b. Favorable
- c. Neither favorable nor unfavorable
- d. Unfavorable
- e. Very unfavorable

**6. Does your program place a specific emphasis on recruiting minority paramedic students?**

- a. Yes
- b. No

**7. Does your program have in place specific marketing strategies to recruit minority paramedic students?**

- a. If yes, please describe:
- b. No

**8. Has your program developed strategic partnerships with organizations or associations to increase minority paramedic student recruitment?**

- a. If yes, please describe:
- b. No

**9. Of the strategies your program may have implemented, what have you found to be the most successful?**

**10. What barriers has your program encountered in your attempt to recruit minority paramedic students?**

**11. Please describe the significance of each of the following possible barriers to minority paramedic student recruitment:**

a. Student awareness of EMS as a career

1. Definitely significant
2. Significant
3. Neither significant nor insignificant
4. Insignificant
5. Definitely insignificant

b. Employment opportunities upon graduation

1. Definitely significant
2. Significant
3. Neither significant nor insignificant
4. Insignificant
5. Definitely insignificant

c. Amount of prerequisite coursework required for admission to paramedic school

1. Definitely significant
2. Significant

3. Neither significant nor insignificant
  4. Insignificant
  5. Definitely insignificant
- d. Opportunities for income generation during paramedic school
1. Definitely significant
  2. Significant
  3. Neither significant nor insignificant
  4. Insignificant
  5. Definitely insignificant
- e. Absence of EMS specific financial aid such as scholarships and grants
1. Definitely significant
  2. Significant
  3. Neither significant nor insignificant
  4. Insignificant
  5. Definitely insignificant
- f. Program resources dedicated to minority recruitment
1. Definitely significant
  2. Significant
  3. Neither significant nor insignificant
  4. Insignificant
  5. Definitely insignificant

## Appendix D: Allied Health Training Program Survey

**1. Please list your program's student racial distribution between the years 2000-2004:**

Number of students enrolled \_\_\_\_\_

Number of Asian students \_\_\_\_\_

Number of white students \_\_\_\_\_

Number of black students \_\_\_\_\_

Number of American Indian and Alaskan Native students \_\_\_\_\_

Number of Native Hawaiian and Pacific Islander students \_\_\_\_\_

**2. How many semester hours of prerequisite coursework are required to gain admission to your allied health training program?**

- a. Less than 12 semester hours
- b. 12-24 semester hours
- c. 24-36 semester hours
- d. More than 36 semester hours

**3. What is the length of your allied health training program excluding prerequisite coursework?**

- a. 6 months
- b. Between 6 months and 1 year
- c. More than 1 year
- d. Other

**4. How would you rate student employment prospects upon graduation from your program?**

- a. Very favorable
- b. Favorable
- c. Neither favorable nor unfavorable
- d. Unfavorable
- e. Very unfavorable

**5. What tuition range including fees, books, and additional supplies best describes your program?**

- a. Less than \$2,500
- b. \$2,500-\$3,500
- c. \$3,500-\$5,000
- d. More than \$5,000

**6. What forms of financial aid does your program offer? Please check all that apply:**

- a. Pell grants
- b. Campus-based aid (eg. Work study, Federal Perkins Loans)
- c. Stafford loans
- d. Plus loans
- e. Scholarships
- f. Grants
- g. Other

**7. Does your program place a specific emphasis on recruiting minority allied health students?**

- a. Yes
- b. No

**8. Does your program have in place specific marketing strategies to recruit minority allied health students?**

- a. If yes, please describe:
- b. No

**9. Has your program developed strategic partnerships with organizations or associations to increase minority allied health student recruitment?**

- a. If yes, please describe:
- b. No

**10. Of the strategies you may have implemented, what have you found to be the most successful?**

**11. What barriers has your program encountered in your attempt to recruit minority allied health students?**

## Appendix E: Anatomy and Physiology Course Student Survey

The purpose of this survey is to assist the CCD Emergency Medical Services Program in developing effective student marketing and recruitment strategies. The survey will take less than five minutes to complete. Thank you for your participation.

**1. What is your major at the Community College of Denver?**

**2. Do you plan on pursuing a career in health care?**

- a. If yes, please specify which field:
- b. No
- c. Undecided

**4. Have you ever considered a career as an emergency medical technician?**

- a. Yes
- b. No

**5. How familiar are you with the steps required to become an emergency medical technician?**

- a. Very familiar
- b. Somewhat familiar
- c. Familiar
- d. Not familiar at all

**6. Please check the race(s) that best applies to you (providing this information is voluntary):**

Asian \_\_\_\_\_

White \_\_\_\_\_

Black or African American \_\_\_\_\_

American Indian and Alaskan Native \_\_\_\_\_

Native Hawaiian and Pacific Islander \_\_\_\_\_