

Community Paramedicine

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Introduction

A summary of evidence that provides background and research perspective for the implementation of paramedicine in community, i.e., the expanded roles and scopes of paramedics and how to bridge the gap between primary health care and hospital emergency was recently requested. There is interest in the expanded practice models in Canada. Community paramedicine (CP) has been developing internationally and nationally for decades, but its implementation is still a new subject in most provinces in Canada. The purpose of this essay is to describe the background of CP and its global development, illustrate Canadian models and programs, and discuss its challenges and opportunities.

Method

A limited internet search for credible and peer-reviewed papers and reviews from the database of “U. S. National Library of Medicine, National Institutes of Health” (www.ncbi.nlm.nih.gov) and the website of “Google Scholar” were conducted. Expanded practice models and relevant qualitative studies in terms of CP from UK, Australia, USA, and Canada were located. A resource within Alberta Health Services, Emergency Medical Services Calgary Zone, was contacted for updated information about pilot projects accomplished and ongoing in Alberta. This resource provided valuable articles, video clips, and reports regarding CP implementation in Canada, plus the website of International Roundtable on Community Paramedicine (IRCP), which is a very good resource including many published papers and articles. The majority of the references are qualitative studies, conference abstracts, government health reports, and news stories.

Results

Background of CP

The role of paramedics is traditionally considered as attending acutely ill or injured people. Now a new definition of paramedics is emerging, especially in rural and remote area, with a strong focus on community and primary health care. This new concept of paramedics is named community paramedicine (CP), which is a model of care whereby paramedics apply their training and skill, in community-based environments (outside the usual emergency response / transport model). The community paramedic may practice within an “expanded scope” (applying specialized skills / protocols beyond that which he / she was originally trained for), or “expanded role” (working in non-traditional roles using existing skills) (International Roundtable on Community Paramedicine, IRCP, 2011a). Within the CP research arena, the expanded role of paramedics usually refers to the expanded scope and role

with defined or clarified protocols and procedures, while the expanding role potentially reflects evolution and expansion slowly and methodically due to demographic changes or clinical, educational, and business requirements. As an example, expanded paramedic roles have been formalized in rural and remote paramedics in Australia with role title, description, clinical skills / description, and education requirements created and evaluated or being evaluated (Blacker, Pearson, & Walker, 2009).

The needs for CP are from different sources, such as the increased financial pressure in health care system, shortage and misdistribution of health care professionals in rural and remote areas, ageing society and increased health care demand (Raven, Tippett, Ferguson, & Smith, 2006). Those issues are not confined in one country, but largely global problems experiencing by many countries, such as Australia, USA, UK, and Canada. CP is developed to fill health care system deficiencies to provide a wider range of health care service for local communities and to achieve a more effective and efficient health care model.

Global Development of CP

Currently, Australia emphasizes the rural and remote paramedics, while other countries implement the expanded paramedic practice within different environments including rural, remote, regional, and metropolitan settings.

Australia

Three broad models regarding expanded roles of paramedic practice in rural and remote areas in Australia have been identified to fit in the community needs (Blacker, et al, 2009). The primary health care model has been developed in Queensland and New South Wales in response to challenges including increased ambulance demand, ageing population, rising prevalence of chronic disease, and decreased accessibility for unpredicted care and after hours care. Collaborated with other health care professionals, paramedics extended access to primary health services to promote disease and injury prevention while continuing to provide pre-hospital emergency care. The substitution model is implemented in some South Australian (SA) country hospitals and in Alice Springs Emergency Department (ED) in response to the physician shortage in SA country hospitals and the nurse shortage in Alice Springs. Paramedics provide leave coverage for medical and nursing staff. Contracts or official agreement between paramedics and hospitals / health departments have been developed to ensure the permitted paramedic practice in these settings. Community coordination model is occurring in South Eastern Victoria, Tasmania, and Western Australia with focuses on recruiting, retaining, and supporting existing volunteers whilst providing support to existing health services when needed (Blacker, et al, 2009). The implementation of these models has demonstrated the provision of effective and efficient care to rural and remote communities and the development of inter-professional relationships. Consultation with stakeholders has been identified as the key to a program success and reinforced during the development of the program. The community-based paramedic role is different from the traditional role, so the selection of a proper application for these roles is critical and the specific personality and managerial traits should be highly considered (Blacker, et al, 2009).

Mulholland, Stirling, & Walker (2009) discussed the difference of paramedic practice in urban and rural areas in Australia. They concluded that rural paramedic displays different roles from urban practice by adopting a whole community approach rather than a case dispatch approach; having multidisciplinary team member rather than operating mainly within ambulance teams; taking extra responsibility as a teacher and manager for volunteers; and being a highly visible and respected member of the community rather than relatively anonymous. Additionally, Stirling and colleagues (2007) explored the roles of expanded scope of paramedics play in contributing to both primary health care and to an overall improved emergency response capacity in rural communities in Australia. These roles include increasing community response capacity; linking communities more closely to ambulance services; and increasing health promotion and illness prevention work at the community level. They also recognized that leadership, management, and communication skills are important for paramedics to successfully undertake expanded roles.

USA

Community paramedic model is not a new concept in the USA as the notable successful Alaska Community Health Aides / Practitioners (CHA/Ps) program has been developed for several decades. This program was established to meet the health needs of Alaska Natives in remote villages and it is the only health care delivery system of this kind in the USA. It was emerged in response to the tuberculosis epidemic and the use of village workers to distribute antibiotics in the 1950s and became a formal, federal funded program in 1968. Now approximately 550 CHA/Ps are employed by 27 tribal health organizations in 178 rural Alaska villages (Alaska Community Health Aides Program, CHAP, 2011). An individual must complete four sessions of CHA training curriculum and successfully complete the clinical skills preceptorship and examination in order to receive the CHA/P certificate. The curriculum includes the knowledge and skills necessary to provide acute care for common medical problems, emergency care, and follow-up care for patients with chronic illnesses, and preventative services including prenatal and well-child care. CHA/Ps work within the guidelines of the *2006 Alaska CHA/Ps manual*, which include assessment and treatment protocols. The referral relationships have been developed at different levels, including mid-level providers, physicians, regional hospitals, and the Alaska Native Medical Center. Additionally, health care practitioners see clients in collaboration with the CHA/Ps. Village clinics perform multiple functions including primary care health clinic, public health clinic, dental office, pharmacy, laboratory, counseling center, and patient travel center, and CHA/Ps respond to medical emergencies on a 24/7 basis. This model has been proven to be a cost-effective, efficient, and essential component in improving the health of the Alaska Native people. The infant mortality and immunization rate have been significantly improved as a result of the successful work of CHA/Ps (CHAP, 2011). This program has successfully met the goal of CP, which is to “connect underutilized resources to underserved populations” (Community Paramedic, 2011).

There are also failed CP models in the USA. A well-known sample is the Red-River Project in Tao's Country, New Mexico. This project was operated from 1994-1999. When the project started, Red-River could not afford a full-time physician clinic and the nearest

hospital was an hour away. There were about 400 residents in the area with a boom to 10,000 in peak ski and fishing seasons. Five paramedics were trained to become Community Health Specialist (CHP) in Tao's County. The training curriculum covered many clinical skills and treatments, such as suturing, otoscopy, and treatment of upper respiratory infections with antibiotics, etc. The evaluation of this project performed in 1999 concluded that this project had made a difference, the emergency call volume reduced from 78% to 11%. It filled the recognized gap in the community health care services. However, the lack of external quality control due to poor standards in supervised practice resulted in the failure of the project. There was almost no continuing clinical reassessment, education, training, or clinical quality review. CHPs could perform some examinations that beyond the limit of their licensure. The remoteness of the area also attributed to the lack of adequate supervision. Additionally, a lack of support from residents in the community or undeveloped relationship with residents was another reason for the failure. Many residents were unaware of the levels of services provided by local paramedics (Wingrove & Laine, n.d., Raven, et al, 2006).

UK

There are various CP models in UK, and the Emergency Care Practitioner (ECP) program is the most impactful one. This program has been developed widely in UK since 2003. Raven and colleagues have comprehensively summarized the information of this program in 2006 (Raven, et al, 2006). The aim of this program is to provide assessment and treatment of minor illness and injury within the community without necessarily transporting the patient to the hospital. The role of ECP is occupying the space between the physician, the nurse, and the paramedics, and most ECPs in UK are recruited from paramedics. Services ECPs provide include carrying out and interpreting diagnostic test, routine assessments of patients with chronic conditions in their home, referring patients to social care services, directly admitting patients to specialist units, and prescribing a wider range of medications (Raven, et al, 2006). ECPs are primarily employed by Ambulance Service trusts and work in a variety of urban and rural settings, including General Practitioner (GP) surgeries, minor injuries units, and hospital Accident & Emergency (AE) department. Clinical support and supervision is provided from the ambulance services or host providers. The ECP program was evaluated nationally. The evaluation results showed that there were significantly fewer hospital or AE department admissions among ECP patients, and the transports to hospital AE were reduced. Hospital and AE attendance had been reduced by 50% in most pilot sites. Additionally, most patients were satisfied with the services provided by ECPs and 77% patients indicated that they would prefer to see ECPs rather than seeing other health care professionals. Total cost for treating patient by ECP was about 40% less than that patient treated by paramedics and subsequently transferred to hospital (Raven, et al, 2006). The overall evaluation suggests the ECP program is progressing towards the expectation. However, there are about 17 trial sites for ECP programs in UK, and some of them are still at the initial phase. Studies regarding the quality and evaluation of the program are limited. Furthermore, the length and type of ECP training, the professional background of recruit, and the way the program deployed vary at different locations (Raven, et al, 2006).

Implementation of CP in Canada: Successful Stories

Canada is at the forefront of CP implementation. Emergency Medical Services Chiefs of Canada (EMSCC) released white paper on future of EMS in 2006 (EMSCC, 2006). It emphasized that the future of EMS in Canada is at the center of the community providing primary health care in a mobile setting. The focuses of future EMS are injury prevention and control, emergency medical response, community health, training and research, public education, and emergency preparedness. Paramedic practitioners deliver services to meet community needs, such as health promotion and injury prevention, to improve public health and reduce the demands on EMS. Many services now provide influenza and other immunization clinics for the homeless, marginally housed and the isolated elderly. EMS is working with Public Health Departments across Canada on Pandemic Influenza Planning, and taking part in flu shot campaigns. Furthermore, EMS works with municipal, provincial and federal Emergency Planning officials to be prepared for large scale incidents or outbreaks. Additionally, EMS attributes to the fastest medical research and technology as they strive to provide the best and most timely pre-hospital medical care to their patients. (EMSCC, 2006). Directed by the white paper on future of EMS, paramedics in Canada move their practice towards the integration with the entire health care system to improve the quality, accessibility, accountability, and sustainability of health care services.

Toronto

The Toronto EMS Community Paramedicine program has been productively developed since 1999. It is a non-emergency, community-based service with a focus on health promotion and injury prevention in urban area (Toronto EMS, 2011). The mission of this program is to help patients in the community solve some of their medical and care problems before they become real emergencies. Michael Nolan, the president of the EMSCC, says the aim of community paramedics is to bridge the gap between acute care and primary health care and to help people who are not getting help from anyone else in the community and who are relying heavily on emergency services to get the regular care they need finally (CTV, 2011). Services offered by this program include heat surveillance, window & balcony safety, vaccinations (influenza, Hepatitis A, Meningitis C, and Streptococcal Pneumonia), infection prevention and control, and Community Referrals by EMS (CREMS) (Toronto EMS, 2011). The Toronto EMS Community Paramedicine program has helped cut repeated 911 calls by up to 80% (CTV, 2011).

CREMS has been developed and implemented in 2006 as a pilot project and fully operated across the city since 2008. Referrals are made by paramedics who respond to 911 calls based on a determination that a patient is in need of additional healthcare or support services. These referrals are made to the appropriate Community Care Access Centre (CCAC) for further assessment and determination of the types of service best suited to the patient's needs (Toronto EMS, 2011). There are five CCACs within Toronto, and all referrals are collected by Toronto Central and then forwarded to the appropriate CCAC for the patient based on the patient residence or the facility hospital patient transported to. The core services provided by CCAC includes nursing, personal support, physiotherapy, occupational therapy,

speech language therapy, and extreme cleaning; and the second services are social work, nutritional counseling, medical supplies / equipment, health care connect, and long term care placement. The annual number of referrals is increasing due to the ageing population, challenged health care system, and more staff participating in CREMS. In 2009, Toronto EMS staff submitted 965 CREMS. From March 2009 to January 2010, community paramedics conducted 299 home visits, 55 of them were follow up referrals to CACC, 26 of them were CREMS refusals converted to consent, and 7 were interventions, such as lift assist, clinical assessment, etc. (IRCP, 2011 b). CREMS has been proven to be an effective approach connecting people in need with appropriate health care resources. There are challenges occurring during the implementation of CREMS. Some patients are not receiving appropriate assistance due to various reasons, such as mental health issue, patient refusal, and marginalization, etc. For example, homeless people are not eligible to receive assistance from CCAC because they have no fixed address. Therefore, CREMS needs to build partnership with other organizations and explore better care delivery and referrals.

Nova Scotia

CP model has been successfully implemented in the islands of Long and Brier in Nova Scotia. The two islands are approximately a 30 minute drive from Digby, a small town in Nova Scotia, with the access restricted to passenger car ferries. The trip from the farthest island, Brier, to the general hospital in Digby takes about 50 minutes requiring two ferries. There are about 1240 residents in the islands, and 50% of them are over 65 years old with increased health care requirements (Misner, n.d.). It was challenging for rural communities to provide accessible health care to residents on the islands. Thus, Emergency Health Services (EHS) Nova Scotia, together with communities in both islands, initiated the innovative health care delivery model. In the first phase of the model, 24/7 emergency paramedic coverage on the islands was established. Community paramedic practitioners, then, started services such as administering flu shots, holding clinics, and checking blood pressures, etc. They also began to take phone calls from residents for non-emergency services, like diabetic checks. Policies, procedures, and protocols regarding safe care delivery were developed by EHS. Moreover, by collaboration with a nurse practitioner and a physician, community paramedics expanded their services and were able to complete more complex care, such as wound care, provide immunization, and participate in community health promotion and injury prevention sessions, such as fall prevention in seniors. Eventually, EHS Nova Scotia established community paramedic competencies in 2005, which include congestive heart failure assessment, fall prevention and home safety assessment, venipuncture / phlebotomies, urinalysis by dip stick, suture / staple removal, wound care, immunizations, medication compliance, diabetic assessment, glucose checks, blood pressure checks, antibiotic administration, B₁₂ injections, helmet safety fitting, car seat installation, CPR & First Aide instructor status, and health promotion activities (Government of Nova Scotia, EHS, 2005). As a result of this successful program, Digby General Hospital has seen a 23% reduction of emergency room visits from the Island's communities. Future steps of Nova Scotia community paramedic program will be focusing on the quality and learning division program review and family physician office rounds component. The possible future modules also include adult protections services and addiction services (IRCP, 2011 c).

Alberta

There are several pilot programs ongoing in Alberta. Those are initiatives that have paramedic playing expanded roles within their existing scope of practice in their communities. Examples include (Information provided by Alberta Health Services through direct correspondence):

- In Edmonton and Calgary (soon to be province wide) all ambulance professional can refer clients needing extra services to Home Care via Community Care Access.
- In Rainbow Lake, paramedics have replaced the departing nurse practitioner in the local health system clinic, which is also without a doctor. This model is being considered for several other sites.
- Fort MacLeod, Fort Vermillion, Peace River and High Level paramedics are working in the Emergency Departments as part of their regular scheduled ambulance duties.
- Calgary is considering an urban community paramedic model along the lines of Toronto's program, and is involved in developing a rural program for an area north of the city experiencing problems in attracting medical and nursing staff.
- Owen has EMTs working in extended care facilities during shifts, in between ambulance calls.
- Medicine Hat works with their Home Care system to deliver in-home IV therapy and INZ medication administration in off hours and weekends.
- Calgary is considering implementing a Seniors' Facility Response Team to deliver treatments in place, rather than having to transfer the client to a hospital.
- Alternate care destinations like Urgent Care Centers accept ambulance transfers.
- Alberta Health Services is working with the various education institutions to broaden the education paramedics and EMTs are receiving so they have a wider understanding of long term care health issues.

Saskatchewan

Saskatchewan EMS review was released in October, 2009. This review provided a clear direction for EMS development over next five years (Government of Saskatchewan, 2009, October). According to the review, the new vision statement of Saskatchewan EMS is:

“Over the next five years, Emergency Medical Services (EMS) in Saskatchewan will develop into a Mobile Health Services (MHS) system. This part of the healthcare system will provide patients with a seamless transition within the continuum of care. MHS will continue to provide strong emergency care services while providing opportunities for augmented, high quality patient care. The MHS system will be fully integrated within Saskatchewan's provincial health system.”

The move from EMS to MHS is based on the need to improve health care service and make these services more accessible. The new vision of Saskatchewan EMS echoes the theme of EMSCC white paper on future of EMS. The future EMS will be a patient-focused, accessible system. EMS Review Committee also provided the recommendations for system

change, which include: roles and responsibilities within the system care should be clarified to enable the development of a collaborative, mobile health services system..... physician medical advisor roles within the MHS system of health regions should be clarified to ensure clinical leaders support the future direction of a MHS system and also lead to a greater consistency in the management of scope of practice issues for practitioners.....patient access to the health system should be improved by reducing or eliminating inter-hospital transfer fees; should work with Health Canada closely to ensure the two levels of government support improving the consistency and quality of MHS services accessible to First Nations peoples.....a more flexible regulatory environment should be developed that enables the implementation of a collaborative MHS system (Government of Saskatchewan, 2009, October). All the recommendations are closely linked with community needs and optimum patient care delivery. In collaboration with other health care professionals, with the aim of bridging the gap between primary health care and real emergencies, Saskatchewan paramedics are working dedicatedly with communities to promote diseases and injuries prevention and improve health care accessibility and equity.

Primary Health Bus project is a successful pilot project of the integration of paramedics with primary health care. This project was launched in August 2008 as a joint initiative between the Saskatoon Regional Health Authority and M. D. Ambulance Care Ltd. With the support from Ministry of Health, this project was designed to reduce the barriers faced by people who are geographically, socially, economically, and / or culturally isolated in accessing health care services. It operates eight hours a day, seven days a week and locates at core neighbourhood of Saskatoon. The bus serves many populations, including First Nations, Métis, children, older adults, immigrants, refugees and those with chronic diseases. Services provided from the mobile Primary Health Bus include health promotion, education, treatment, follow-up care, and referral (Government of Saskatchewan, n. d.). As of February, 2009, almost 1000 clients have accessed services on the bus. Staff including Registered Nurses (Nurse Practitioners) and paramedics are seeing eight and nine people on an average each day, and 12% of them are returning clients. Health Bus staff have been building very strong and positive relationships with community residents, and this project has successfully facilitated inner city residents to access health care services (Government of Saskatchewan, 2009 February 26). Primary Health Bus will continue serving Saskatoon communities.

Many ambulance services already offer a preliminary start of community paramedicine initiatives through their own outreach processes and community linkages. As an example, Parkland Ambulance in Prince Albert has been working with communities for years, and some of their community programs are: (Information provided by Prince Albert Parkland Ambulance)

- Take Care Out There: Partnership with SGI, PA Police and Prince Albert Raiders to talk about drugs alcohol and making positive life choices.
- Car Seat Education: Parkland Ambulance has for the last 8 years been the lead agency to car seat education, inspections and presentation.
- Be Prepared not Scared: Partnered with the Canadian Red Cross we talk about what do in the event of a large scale emergency like a natural disaster.

- Boat Safety: Promotes pleasure craft operators cards and safe boating programs.
- Meals on Wheels: Parkland Ambulance has been doing Meals on Wheels for over 15 years and continues to provide this community service.
- Bikes and Boards: Parkland Ambulance and the Acquired Brain Injury (ABI) program every summer sponsor at least two school bike rodeos. Together both agencies visit area schools supported by a local bike dealer to talk helmet safety, bike rules and wearing the gear on skate boards.

Such programs have been successful and well received by public groups. They represent health promotion and prevention initiatives as grassroots community levels and demonstrate the professional credibility and practice potential of paramedics in multiple settings. As mentioned above, such initiatives are a starting point for considered expansion and greater definition of CP.

Challenges and Opportunities of CP Implementation

The development of CP is to fill health care system deficiency and provide the optimum health care services for patients and communities. CP is implemented in various demographic, economic, and cultural environments, and CP models are designed to fit in the local settings. The challenges and opportunities of CP implementation are universal nevertheless because these models / programs are operated towards the same goal.

Challenges

Roles Unclear or Overlap with Other Health Care Professionals

In immature or pilot CP programs, the expanded roles and scopes of paramedics are not formalized or clarified. CP overlaps with nursing and other health professions. They may feel that community paramedic practitioners mimic existing public health and community nurse roles (Short, 2003). Rapid implementation of CP without identification of expanded roles causes resistance from other health care professionals. Paramedics may also feel uncomfortable to work cooperatively with other professionals if their roles and scopes are unclear, and they may be confused or unsure about their original roles as paramedics, should they continue providing acute care or completely switch to community-centered services? As the roles and competencies are undefined, doctors may be unwilling to delegate additional tasks to mid-level paramedic practitioners. Therefore, the expanded roles of paramedics need to be formalized and defined with clear descriptions and clarifications.

Undeveloped Policies, Procedures, and Protocols of CP Practice and Variety of Governance

Most CP programs are new and need to be evaluated and updated to meet expanded roles and scopes of CP practitioners. Research and evaluation of CP models are limited and further direction of care delivery improvement is uncertain. CP programs' policies, protocols, and assessment tools are under development. External supervision and evaluation should be

established in order to attain consistent and sustained quality of care. The length and types of continuing education curriculum and training also need to be standardized. EMS governance and delivery methods are various across jurisdictions. Geography and levels of EMS service also vary. These differences result in resources and information sharing difficulty (EMSCC, 2006). Health technology and health promotion activities are localized as well and hard to be adopted.

Complex Community Assessment

Working with communities is the key to CP practice, and support from communities is critical for a successful CP model. However, community assessment can be very complex as it is challenging to achieve a complete assessment about community needs and public health care deficits. Thus, it is difficult to design a CP project or program that suitable to the community without identifying the real gap between community needs and services. Different from the roles of traditional paramedics, leadership, management, and communication skills are important for community paramedics to successfully undertake expanded roles. Personality and managerial skills should be highly considered during the professional recruitment.

Cost of CP Implementation

Studies regarding the cost of CP programs are limited, and there are insufficient data supporting CP is cost-effective comparing with the traditional models. EMS is usually not funded as an essential health service in Canada, resulting in uncertain funding and difficulty in long term planning (EMSCC, 2006). Currently, CP programs in the USA are funded through grants as pilot or demonstrations and services are not reimbursed by insurance companies (National Organization of State Offices of Rural Health, NOSORH, 2011). Physicians are not necessarily proponent for CP as they depend on patient contacts and volume to fund their operations.

Opportunities

Needs and Sources

Ageing population, shortage and misdistribution of health care professionals, and rural and remote demography, i.e., more elderly, immigrants, poverty and poor health, are challenges, and more likely opportunities of CP development. In rural area, paramedics can take the role of “out of hospital emergency provider”. Community paramedics can perform the roles of “quality assurance assessor”, “researcher”, and “community educator” (Short, 2003). CP does not necessary change the scope of EMS practice, but the role of EMS practitioners is expanded. In well developed and mature CP programs, the community paramedic can be the eyes and ears of primary and emergency care physicians and extension to their practices (NOSORH, 2011). Some successful CP programs are highly evaluated by social media and welcomed by communities. Support from communities and patients has been observed. Moreover, mobilized health care is supported by all levels of governance, and

the future of EMS in Canada is at the center of community, providing primary health care in a mobile setting.

Training and Education

Curriculums about primary care, expanded emergency care, public health, disease management, prevention and wellness, and mental health are available for CP practitioners. Using its reserve knowledge and capacities, EMS has the potential to broaden and increase the levels of care through the expanded training.

Collaboration among Health Care Professionals

EMS is integrating with the whole health care system and expanding practice capabilities based on the collaboration with other health care professionals. The goal of CP is to close the gap between primary health care and acute care, instead of taking away other health care professionals' roles. Paramedics can deliver seamless and augmented care via collaboration or in partnership with other health care professionals.

Conclusions

CP is aimed to provide appropriate care to underserved people to fill the health care service deficiency. It is a dynamic part of the health care system and operated based on the collaboration with other health care professionals. CP is the community-centered health care service that links community with ambulance more closely and undertakes expanded roles, such as health promotion and disease / injuries prevention. It has been proven that CP programs are able to augment access to high quality and more equitable health care services. Some CP models have successfully cut the repeated emergency calls, reduced hospital and ED visits, and very well received by community residents. However, the implementation of CP is a long-term process, and relevant studies regarding CP program evaluations are limited. The implementation of CP should build on existing / established community linkages and be phased in through a staged process. Role expansion of paramedics should be formalised and clarified. Policies, procedures, and protocols need to be standardized and evaluation processes at all steps in implementation should occur.

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