One of the greatest impacts of the 2004 *Agenda* was its effect on the promulgation of EMS-based community health services, now central to the concept of "EMS 3.0"[45]. The EMS 3.0 initiative was developed by several national EMS associations to encourage EMS systems and agencies to transform themselves as broader, more integral services within the transforming community healthcare systems by using EMS resources to address unmet health needs while continuing to serve the traditional emergency response and medical transportation role.

The EMS-based community health services to which the 2004 *Agenda* referred include community paramedicine (CP) which is the practice of using EMS resources to meet unmet community health needs and mobile integrated healthcare (MIH) which employs both EMS and other health and medical practitioners. The 2004 *Agenda* noted that in many rural settings, EMS personnel were already serving in other healthcare roles, and had been doing so for over a decade[5].

Though first coined in a publication in 2001[6], community paramedicine was not familiar to the national EMS community until a few years after the 2004 *Agenda* was published. In 2018, the National Association of EMTs (NAEMT) published its Mobile Integrated Healthcare and Community Paramedicine Second National Survey which identified over 200 communities with EMS 3.0 component services in place[7].

Five states reimburse for CP-MIH services to Medicaid patients, while sixty-one percent of states are working towards this. One major commercial health insurer is implementing reimbursement for CP-MIH services in its 14 states. [8]

Three national commercial health insurance companies and the Centers for Medicare and Medicaid Services (CMS) have funded pilot CP-MIH programs. CMS has announced a new pilot Emergency Triage, Treatment and Transport ("ET3") pilot which will provide financial incentives for alternative treatment and transportation practices.

NAEMT has largely carried the banner of the EMS 3.0 movement, with a webpage and annual summit conferences promoting the initiative[45]. Both NASEMSO[9] and NAEMT[10] have webpages dedicated to the EMS 3.0 component services of CP and MIH. These list resources for CP-MIH service implementation and related purposes and update the status of rules and regulations pertaining to CP-MIH. Both NASEMSO and NAEMT have active EMS 3.0/CP-MIH related committees. International Roundtable on Community Paramedicine[11] and Community Paramedicine Insights Forum[12] series of webinars have been active for over six years.

Since publication of the 2004 *Agenda*, the federal EMS landscape was given more formal shape by the Moving Ahead for Progress in the 21st Century Act of 2012 which formally authorized the National EMS Advisory Council (NEMSAC), initially formed in 2007[46]. Created as a representative council, NEMSAC's charter requires "geographic and demographic diversity" as well as suggesting specific tribal EMS representation[47].

On the state level, significant legislative change impacting rural EMS occurred largely as a result of the 2004 *Agenda*. Funding support of EMS-based community health services began with 2011 legislation in Minnesota[48] moving EMS toward a more integrated role within the health care system and stimulating development of the concept of EMS 3.0 discussed in the previous section[45]. Subsequently, similar changes to laws or rules, or interpretations of existing laws or rules, indicate that some 89% of states enable EMS 3.0 development[49].

One legislative/regulatory area that potentially remains deficient despite the 2004 *Agenda*, is rural EMS representation in state level EMS planning and coordination. Most states have statewide representative bodies in an advisory or authority role to guide EMS system development[13].

These state committees or boards often have a subcommittee structure for planning or operational purposes which may make recommendations to the state group and EMS agency or may be delegated the authority to act on behalf of the state group and EMS agency (e.g. a licensing committee might hear complaints about licensees and take action; a medical oversight board might authorize treatment protocols; a trauma committee might designate trauma centers). These committees often cover some of the fourteen EMS system component/attribute areas of 1996 *EMS Agenda for the Future* (e.g. education, medical oversight, human resources).

Beginning with statewide trauma system planning in the early 1990's, and with broadened recommendations for regional, accountable systems of care (e.g. stroke, trauma, heart attack) by the Institutes of Medicine *Future of Emergency Care* report series in 2006[14], the establishment of systems of care for time-dependent emergency conditions have been the focus of many state EMS lead agencies (e.g. the Idaho Time Sensitive Emergencies System[53)].

Whether drawn from the component/attribute model (e.g. education committee, medical oversight committee) or the systems of care approach (e.g. trauma committee, stroke committee) state EMS system planning and implementation committees, as with the primary state EMS board/committee, generally involve a representative advisory group of stakeholders from around the state.

As EMS systems conduct planning, implement change, and generally evolve through decisions of these committee structures, there is concern that smaller, rural agencies and facilities may not be adequately represented in the primary state board/committee or in the component-based or systems-of-care-based committees described above.

Rural EMS agencies evolved largely as volunteer-based services. As volunteers have become increasingly scarce in the face of greater requirements for EMS professional licensure and economic pressures in general, communities are confronted with the real cost of staffing an EMS agency. With rural hospital closures, rural ambulance services are called upon to transport more patients and longer distances, stretching their staffing and vehicle resources

even more. There are no dependable sources of revenue to support these costs other than patient charges, or third-party insurance reimbursement. Staffing an advanced life support ambulance twenty-four hours a day can cost between a quarter and a half million dollars or more[50,51]. Local governments face new demands to subsidize such cost as volunteerism succumbs to the pressures described. The negotiated ambulance fee schedule rule created by the Centers for Medicare and Medicaid Services (CMS) includes Congressionally mandated temporary increases in payments for rural and "super rural" ambulance services[15,52]. No permanent increase has been enacted by Congress.

A number of attempts have been made since 2008 to quantify the EMS workforce and determine whether there is a specific shortage in the workforce (e.g. *Research and Literature Review for Emergency Medical Services (EMS) Workforce Data Collection*, contained in NASEMSO's *EMS Workforce Planning & Development - Guidelines for State Adoption*[18]*).* While there are difficulties recognized with these attempts (e.g. varying definitions of "volunteer", individuals holding multiple jobs) there is some consensus that if there is a shortage, it is in rural areas. This is attributed to traditionally heavy reliance on a declining volunteer workforce and greater pay and benefits in urban/suburban settings to which rural EMS professionals are attracted.

The JCREC has discussed the contribution of stress and mental health issues to retention of the rural EMS workforce and generally agrees that it needs to be further evaluated. Critical incident stress management (CISM) approaches in EMS and public safety have been plentiful for two to three decades, and there is at least one international standard for programs to manage stress in EMS[19]. There is a need to build a culture of wellness and resilience within EMS agencies, and the National Association of EMTs (NAEMT) has published a guide to this end[56]. All of the issues discussed in this section are impacted by the quality of rural EMS agency leadership. There have been myriad EMS and volunteer EMS management training programs around the country over the past few decades. Yet leadership preparation and leadership succession planning remain issues to be resolved.

The *Emergency Medical Services Education Agenda for the Future: A Systems Approach*[20] was published in 2000.

Commented [EC(1]: What are the most important or influential things about this?

As educational and certification requirements for practice increase and education centers centralize in urban areas, these requirements can grow beyond the reach of the mostly volunteer rural EMS workforce. Supplying an adequate EMS workforce without sacrificing certification standards is a perennial challenge.

The resulting pressures have led to closure of some fragile ambulance services and the reorganization of others into larger, regional entities.

Commented [EC(2]: Where did this information come from?

The provision of EMS, with some exceptions, has not been formally considered an essential service by state and local government. It has also evolved from a simple transportation service to the provision of an array of medical capabilities which are more difficult for the public to understand[22] and for volunteers to provide. In contrast, law enforcement and fire are considered essential services by government, have not evolved as services provided by volunteers.