## INTRODUCTION

Mercy Health-Willard Hospital (Mercy), a critical access hospital located in Huron County, led the formation of a community paramedic program, in partnership with Willard Fire and Rescue, with the goal of reducing 30-day readmissions, inappropriate use of the 911 system and over-use of the emergency department for non-emergent needs over the course of the project period. The program also aimed to resolve social determinants of health that present barriers to wellness. Mercy and partners will develop a community paramedic Steering Committee that will advise and assist in implementation. The program was patterned after a successful urban community paramedicine program launched by Mercy Toledo in 2018, with thoughtful and substantive adaptation to a rural environment. The partnership developed a solid foundation upon which a successful and sustainable program was launched in Huron and adjacent counties.

Mercy developed and implemented a community paramedicine program in Toledo, in partnership with Toledo Fire and Rescue, in 2018-2019. The lessons learned during that process were valuable as the program developed in Willard.

## MODEL BREAKDOWN

Mercy Willard and the Willard Fire Department used a Community Coordination Model for Paramedicine (CPP). The community coordination model uses EMS personnel in a coordinator role, primarily aimed at supporting primary care, mental health, and other health services. The overall goal is engaging participants who are not following patient care plans to reengage them with health services. EMS personnel partner with a community health worker employed by Mercy Willard Hospital, a critical access hospital, and work with other EMS, county health and mental health personnel throughout the Huron County region.

### *Target Population*

The primary targeted geography was all of Huron County. Because of the nature of medical care in a rural environment, patients at Mercy Willard often live a substantial distance from the hospital. Residents of Huron county have demographic and health characteristics that increase their risk for activating 911 and using the emergency medical

system. Older and younger residents, those without primary care and those with chronic health conditions such as heart disease and diabetes are at a higher risk for over utilization of the emergency system for non-emergent needs. The rurality of the population and the large percentage of uninsured residents create conditions that lend themselves to unnecessary use of the emergency department.

***Work Flow***

The essential elements of the model include:

1) Mercy and the Willard Fire Department use a Community Coordination Model for Paramedicine (CPP). The community coordination model uses EMS personnel in a coordinator role, primarily aimed at supporting primary care, mental health, and other health services, with the overall goal of engaging participants who are not following patient care plans to reengage them with health services.
2) The staff providing in-home intervention include a paramedic who is an employee of Huron County EMS, and a community health provider, who is an employee of Mercy Health. Having two individuals with complementary skills (the paramedic with clinical/triage skills and the community health provider with knowledge of social determinant needs and resources) provides a powerful team that can assist patients with many issues. It also provides a measure of safety for staff so that no one is in a home with a patient alone.
3) Referrals for patients who may benefit from community paramedicine intervention come from Mercy Health-Willard Hospital, other regional hospitals, outpatient primary care and specialty clinics, dialysis centers, Huron County EMS, first responders, community organizations such as senior centers, area offices for aging, and others. The referral process is a simple email or phone call, and follow up is efficiently handled by the coordinator.
4) The data regarding actual readmissions, emergency department use, inappropriate 911 calls, patients with high risks for readmissions, and other factors that may trigger a referral as well as data collected during encounters is captured using Mercy's electronic health record software, Epic. This process facilitates reporting

and ensures that these encounters can be reviewed by healthcare providers as appropriate.

5) In addition to readmission, ED use and 911 call metrics, Mercy monitors resolution of social determinant needs as an outcome. The resolution of social determinant issues such as food insufficiency, transient housing, transportation barriers and social isolation may not directly result in decreased readmissions, but does contribute to the overall wellness of the patient and helps them to remain on the path to health.

6) The community paramedicine program follows a workflow described in Figure 1.

***Workflow Activities and Interventions***

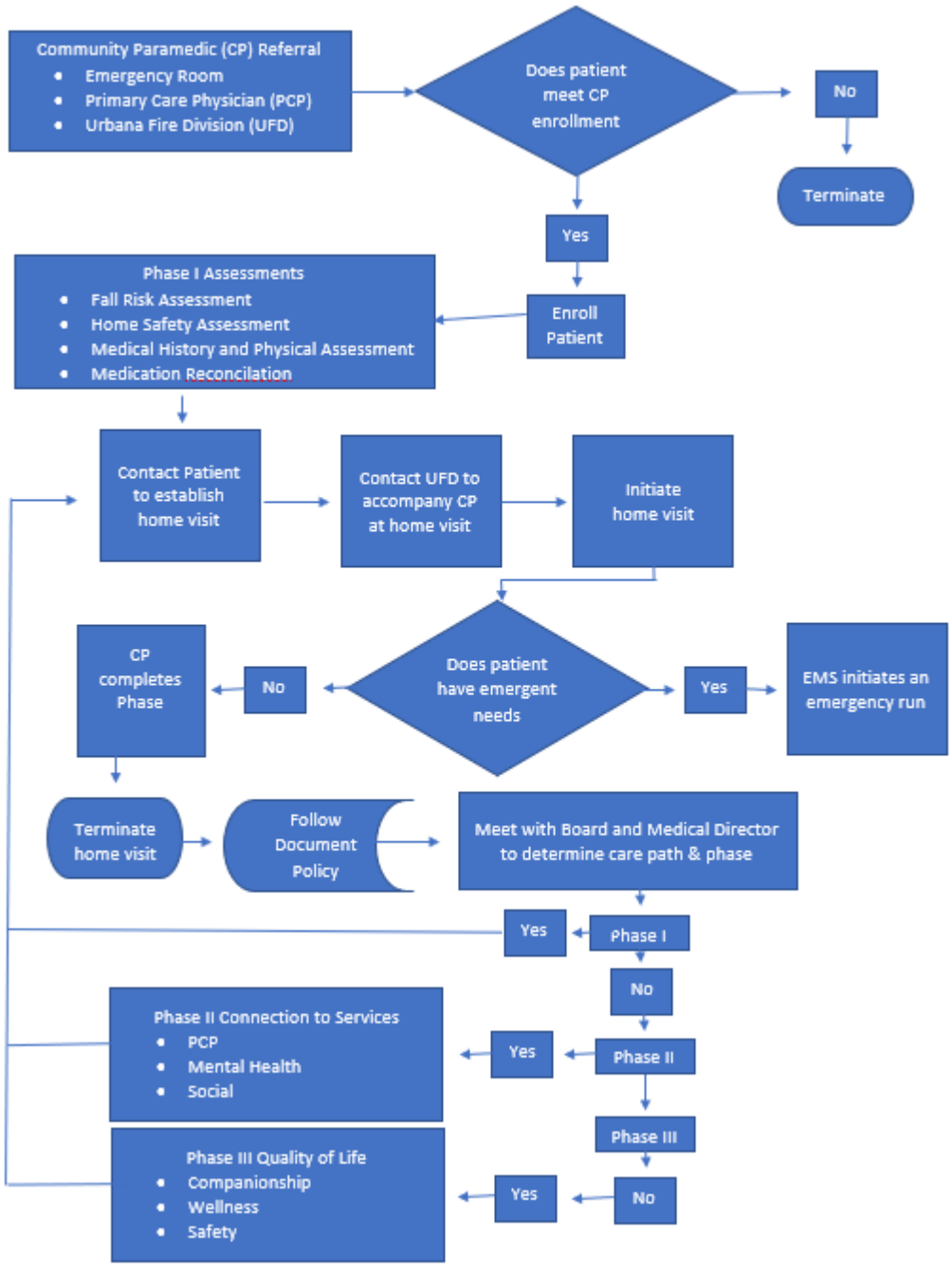
The CPP workflow is built and documented in the CPP manual. The manual includes a medical protocol, medical procedures, and operational polices. The medical protocol (or activities) include, as appropriate:

- Health Care Provider Contact
- Medical Condition Assessment
- CHF Management
- Diabetes Management
- Asthma/COPD Management
- Post Stroke Follow Up
- Wound Care
- Mental Health
- Dementia
- Alzheimer
- Elevated Blood Pressure

The medical procedures (or interventions) include, as appropriate:

- Medication Review and Reconciliation
- Risk Factor Assessment
- Social Needs Assessment
- Home Safety Assessment
- Dressing Change
- Otoscope
- Written Instructions
- Inspection of Home Medical Equipment

Figure 1. Work Flow




The foundation of activities is the *Health Care Provider Contact* protocol and the *Medical Condition Assessment* protocols. The *Health Care Provider Contact* protocol provides

the CPP Team Members with general guidance for performing their respective assessments of a program participant visit. The purpose for the protocol:

- Have a consistent way to assess and monitor the Participant's condition and compliance with established care plan.
- Communicate with Participant's designated health care provider or, if unavailable, the Medical Director on Participant's condition and compliance.
- Assist the Participant by increasing awareness of asthma / COPD through education and reaffirming care plan.
- Review technique / devices that Participant is using to treat asthma / COPD.
- Communicate with Participant's designated health care provider or, if unavailable, the Medical Director on Participant's condition and compliance.
- Create a Participant care plan in accordance to the Health Care Provider Contact protocol with the Participant.
- Perform any necessary procedure by following the Medical Procedure protocols.

Patients have standard assessments completed as part of the *Health Care Provider Contact* protocol:

**Vitals:** Height, weight, temperature, pulse , respirations, blood pressure, pulse ox, capnography, blood glucose and physical exam.

**Participant History:** Gender, address, contact information, birth date, marital status, family or others living in same residence, occupation, advance directives, durable power of attorney for health care and designated health care provider.

**Personal Health History: a**llergies, childhood illnesses, surgeries, hospitalizations, accidents or injuries, chronic illnesses, immunizations, last examinations, obstetrical history

**Family Health History:** Mental Illness, Alzheimer's or dementia, cancer, diabetes, heart disease, hypertension, seizures, emotional problems, alcohol/drug use, developmental delay, endocrine diseases, sickle cell anemia, kidney disease, cerebrovascular accident.

**Present Health Status / Symptoms c**urrent health promotion activities (diet, exercise, etc.), participant's perceived level of health, current medications / supplements (type, prescribed by whom, when first prescribed, when first taken, doses, perception of effectiveness, etc.)

**Environmental Hazards (safety and comfort):** Hazards of employment (e.g., inhalants, noise, etc.), hazards in home, hazards in community (e.g., noise, water / air pollution, etc.), hazards of travel (e.g., seatbelts, etc.), including any travel outside U.S.

**Symptom Analysis:** Location (where are the symptoms), quality (describe characteristics of symptom), quantity (severity of symptom), chronology (when did the symptom start), setting (where are you when the symptom occurs), associated manifestations (symptoms occur at the same time), alleviating / aggravating factors, review of systems (as appropriate).

The community paramedic and the community health worker also complete several procedures then document the CPP visit in accordance with the CPP's documentation policies.:

- Medication Review and Reconciliation
- Inspection of Home Medical Equipment
- Home Safety Assessment
- Risk Factor Assessment
- Social Needs Assessment

The community paramedic and the community health worker then design a Participant Care Plan that is documented and conveyed to referring physicians and agencies. The plan includes elements such as:

- When to call 9-1-1, go to the Emergency Room or call your Health Care Provider
- Review of vitals
- Review of Participant history
- Review pathophysiology
- Review of results performed
- Education appropriate to Participant
- Review of medications
- Review of appointments

- Review scheduled or completed appointment(s).

The CP works with local EMS in the region to accomplish the *Medical Condition Assessment* protocol. The protocol provides general guidance regarding whom the CP should contact when the CP determines, in his or her professional medical judgment, that the program participant has an emergent medical condition, an urgent medical condition, or a medical concern during a scheduled CPP visit. EMS are encouraged to work with the CP on assessments, but not required to. The main purposes of the *Medical Condition Assessment* include:

- Responding to a Participant's emergency medical condition, urgent medical condition, or other medical concerns during the CPP visit.

If the CP identifies additional medical needs during a CPP visit, the CP should consider the following three responses based upon his or her professional medical judgment:

1. **Emergency Medical Condition**. If the CP identifies an Emergency Medical Condition, the CP will:
   a. If a medic crew is assigned to CP, CP advises medic crew of the emergency medical condition and allows crew to take over participant care using their local jurisdiction protocol.
   b. If a medic crew is not present, via MARCS radio, the CP shall identify self and request that Dispatch send EMS.
2. **Urgent Medical Condition**. If the CP identifies a medical concern that is not an emergency medical condition but, in the CP's professional medical judgment, requires the Participant be seen urgently by a health care provider, the CP should:
   a. Contact the Participant's designated health care provider utilizing Perfect Serve (see below).
      i. If the Participant's designated health care provider does not utilize Perfect Serve, the CP may call that provider's office and, if appropriate, leave a message.
      ii. If the Participant has not designated a health care provider, the CP may contact the Medical Director (or appropriate designee) for guidance.
   b. If the designated health care provider does not respond timely under the circumstances, the CP should contact the Medical Director (or appropriate designee) for guidance.

c. If necessary, the CP should attempt to make arrangements with the Participant for transport to the Participant's designated urgent care or designated health care provider's office, as appropriate.
    i. The CPP Vehicle is not to be used for Participant transport.

3. **Non-Emergent and Non-Urgent Medical Concern**. If the CP identifies a medical concern that does not constitute either an emergency medical condition or an urgent medical condition, the CP should:
    a. Contact the Participant's designated health care provider utilizing Perfect Serve, if applicable.
        i. If the Participant's designated health care provider does not utilize Perfect Serve, the CP may call that provider's office and, if appropriate, leave a message.
        ii. If the Participant has not designated a health care provider, the CP may contact the Medical Director (or appropriate designee) for guidance.
    b. If necessary, the CP should encourage the Participant to timely follow up with his or her designated health care provider for the particular medical concern.

As stated earlier the foundation of activities is the *Health Care Provider Contact* protocol and the *Medical Condition Assessment* protocol. The protocols and visit would be enacted if it is determined that a referral meets a CPP participant enrollment. Referrals, as shown in the workflow commonly come from:

- Emergency room
- Primary Care
- EMS

Referral will be reviewed and home visit will be scheduled if a participant meets enrollment. There are three designed phases in the CP workflow with all participants starting at Phase 1. In all phases EMS participates in the CP visit. In Phase 1 *Health Care Provider Contact* and *Medical Condition Assessment* protocols are followed. The CP will meet with Primary Care, Board members and Medical Director to determine the next phase, which is true after any visit. Phase I is known as the stabilization phase, with a focus of making the participant feeling safe in their own environment.

If it is determined to move to Phase II, known as the connect the dot phase the CP will focus on connecting the participant to resources. These resources could include but are not limited to:Doctor or clinic

- Transport
- Mental Health
- Health Department
- Meals
- Pharmacy
- Primary Care
- Adult Protective Services

Phase III is known as the growth phase, with the design improve the quality of life. The phase could include services such as arranging for transportation to a senior center, connecting them with exercise programs or companion services.

**PARTNERSHIPS**

Mercy Health enjoys a strong partnership with the City of Willard Fire and Rescue. In addition, Mercy and Willard Fire also work closely with long term care facilities in the community.

**SUCCESSES**

Mercy Health was successful in implementing a CP model that is relatively simple and manageable with limited staff and budget. The patients that have been seen through CP have had significant anecdotal improvement in their use of the 911 system and their quality of life. Though it was not the original plan, having the swing bed coordinator in the community health role has been a success because of her knowledge in discharge planning

**BARRIERS**

The most significant barrier that Mercy encountered was an internal conversation about the legal significance of community paramedicine, and whether the provision of services by the CP and the CHW at no cost to the patient violated beneficiary inducement laws (information

about these regulations can be found on the Centers for Medicare & Medicaid Services website.) In addition, there were concerns about whether an arrangement to partner an EMS agency and a healthcare organization could invoke Stark Laws or Anti-Kickback Statutes. It was a lengthy process to work through these concerns and attain the appropriate permission and contractual agreements to move the program forward.

A secondary barrier was the effects of the COVID-19 pandemic on the staff involved with the project. First responders, emergency room providers and grant professionals all had substantial increases in workload and responsibilities due to the pandemic; the toll that the pandemic took on healthcare organizations in general was significant, and exacerbated delays and frustrations. When the pandemic began to ease, the patients seen in the emergency rooms and clinics had been without regular care and had both physical and mental health needs that were markedly worse than before the pandemic.

**BASIC DEMOGRAPHICS OF CLIENT BASE**

Due to the delays in program launch related to the legal concerns described above, Mercy's program did not begin until March 2022. Between March 2022 and August 2022, the program had 21 patients enrolled. Patients ranged in age from 36 to 96, with an average age of 70. Eleven were females and ten were males. Two patients, or 9.5%, were Black/African America, one listed their race as "Other" and was of Hispanic ethnicity, and 18 were White/Caucasian, non-Hispanic. In Huron County, 96% of residents are White, and 90% are non/Latino/Hispanic.

**METRICS OVERVIEW**

Patients had the following chronic health conditions (numbers total more than 21 because many patients had several conditions):

| | |
|---|---|
| High Blood Pressure | 17 |
| Heart Disease | 11 |
| Diabetes-Type II | 10 |
| Mental Illness | 6 |
| Congestive heart failure | 6 |
| Chronic Obstructive Pulmonary Disease | 6 |

| | |
|---|---|
| Asthma | 2 |
| Diabetes-Type 1 | 1 |

The most common condition was high blood pressure, which affected 81% of patients, followed by heart disease which affected 52%.

The reasons for referrals included ED follow up (8), concerns identified by nursing/medication management (2), 911 call follow up (2) and direct physician referrals (9). Among patients referred for ED follow up, reasons cited included pain management, medication management, COPD, and CHF. The nursing referrals were related to medication management and COPD, 911 visits were related to falls, and the physician referrals related to medication management in four cases, post-op discharge/follow up in three cases and concerns about fall risk in one case.

Among the patients, the number of ER visits in calendar year 2021 ranged from zero to sixteen, with an average of 3.3. Similarly, the number of 911 requests ranged from zero to eight with an average of 1.3. Hospital admissions ranged from zero to four with an average of 1. In calendar year 2022, the average number of ED visits was 4, the average number of 911 requests was 2.5 and the average number of hospital admissions remained at 1.

| | 2021 to 2022 Trend By Patient | | |
|---|---|---|---|
| Measure | Increased | Same | Decreased |
| ED Visits | 8 | 5 | 8 |
| 911 Requests | 12 | 4 | 5 |
| Hospitalizations | 7 | 9 | 5 |

For ED visits, 13 of 21 patients had the same or decreased number of visits between the two years. For 911 requests, 9 had the same or decreased number, and 14 had the same or fewer hospitalizations.

All 21 patients reported that they had a primary care doctor. All patients reported that they had medical insurance; 1 reported commercial/employer based insurance, 3 reported Medicaid and 17 reported being Medicare beneficiaries.

## SUSTAINABILITY PLAN

Sustainability is the biggest concern for the Mercy CP program at this time. High inflation post-pandemic coupled with the need for healthcare organizations to raise wages for retention and recruitment purposes during a significant labor shortage has jeopardized the financial well-being of organizations like Mercy. Though a program that saves money based on reduced ED utilization and reduced readmissions would seem to be a "no brainer," programs that save money rather than generating revenue are hard to prove and hard to sell. Mercy intends to continue the CP program through at least the end of June 2023 and continue to measure the impact on patient outcomes. The data that is collected will be used to calculate a return on investment, converting the ED visits and admissions avoided into dollars saved. If more time is needed to prove the worth of the program, Foundation funding will be sought to continue the pilot.

## HOW YOUR PROGRAM IS DIFFERENT THAN WAS ORIGINALLY PLANNED AND WHY?

In the original project plan, we intended to hire a community health worker who had been trained specifically in that work. Instead, we found that the community paramedic was able to handle any clinical issues that came up, and instead of having someone who was specifically trained as a CHW, it was more important to have an individual who understood insurance, discharge processes and eligibility for services. At Mercy Willard we have employed the swing bed coordinator in this role. The swing bed coordinator typically evaluates inpatient medical records to established criteria and confers with medical and nursing personnel and other professional staff to determine legitimacy of treatment and length of stay. Their understanding of the discharge and case management processes have proven to be very valuable as the program evolved.

## FUTURE OF COMMUNITY PARAMEDICINE AT MERCY

There is no doubt that the hospital values the program and that patients report positive responses. In time, we believe that the data will also show positive impacts on outcomes that translate to dollars saved. There is interest in expanding the program to Tiffin, Ohio, in Seneca

County, where another Mercy hospital is located, and which shares many administrators and leaders with Willard.

The future of all healthcare is doubtful and fraught, due to rising costs and flat reimbursement, so it would be unrealistic to paint a rosy picture of any program that cannot generate revenue through billing. It is our hope that the Emergency Triage, Treat, and Transport pilot program conducted by CMS will open the doors to more sustainable billing practices to allow the continued participation of the fire department, and that the community paramedicine program will be incorporated into the discharge planning process while maintaining its ability to respond to the needs of all patients.

## ADVICE FOR OTHERS CONSIDERING A COMMUNITY PARAMEDICINE PROGRAM

Mercy and Willard Fire overestimated the medical needs of patients and underestimated the need for social interventions; we would advise other programs to consider that the primary needs will be social rather than medical, and plan and staff accordingly. We would also advise that the right place for the program within the structure of a hospital might be within discharge planning or case management, rather than associated with community outreach, the ED or primary care offices, which may be tempting. Lastly, we would advise that the time it takes to develop and deploy a program in a risk-averse and complex healthcare system is likely to be much, much longer than planned. Building in enough time to sort out all of the legal and risk issues is critical to successfully meeting the proposed timeline.