# SELF-MEASURED BLOOD PRESSURE MONITORING INITIATIVE

WISCONSIN ASSOCIATION OF FREE & CHARITABLE CLINICS

# INITIATIVE BACKGROUND

Self-measured blood pressure (SMBP) monitoring is the measurement of blood pressure by an individual outside of the health care clinic setting. SMBP monitoring is often done in the home by an individual on themselves or by a caregiver. Several national and international hypertension guidelines endorse SMBP monitoring. Scientific evidence indicates that SMBP monitoring is associated with reductions in blood pressure and improved control. Uncontrolled high blood pressure raises the risk for heart disease and stroke, which are leading causes of death in Wisconsin.

In 2020, the Chronic Disease Prevention Program at the Division of Public Health contracted with the Wisconsin Association of Free & Charitable Clinics (WAFCC) and 10 of their member clinics to design and implement the SMBP Monitoring Initiative. The American Heart Association also provided technical assistance and support for acquiring blood pressure cuffs.

Participating WAFCC member clinics designed SMBP loaner programs tailored to their clinical population and staffing capacity using the National Association of Community Health Center's SMBP Implementation Toolkit. Loaner programs varied on length of time patients were loaned cuffs (e.g. one to three months, or until blood pressure control was achieved) and follow-up methods (e.g. telehealth or home visit). All clinics utilized validated home blood pressure monitors, and tracked SMBP patient outcomes throughout the length of their programming.

# WAFCC CLINICS & STAFF ACKNOWLEDGEMENTS

**Bread of Healing Free Clinic**
Margie Dunn
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**Community Connections Free Clinic**
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Emma Sherman

**Community Outreach Health Clinic**
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**Findley Foundation**
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**HealthNet of Rock County**
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**Hope Clinic and Care Center**
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**Neighborhood Free Community Clinic**
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**Open Arms Free Clinic**
Sara Nichols
John Castro

**Waukesha Free Clinic**
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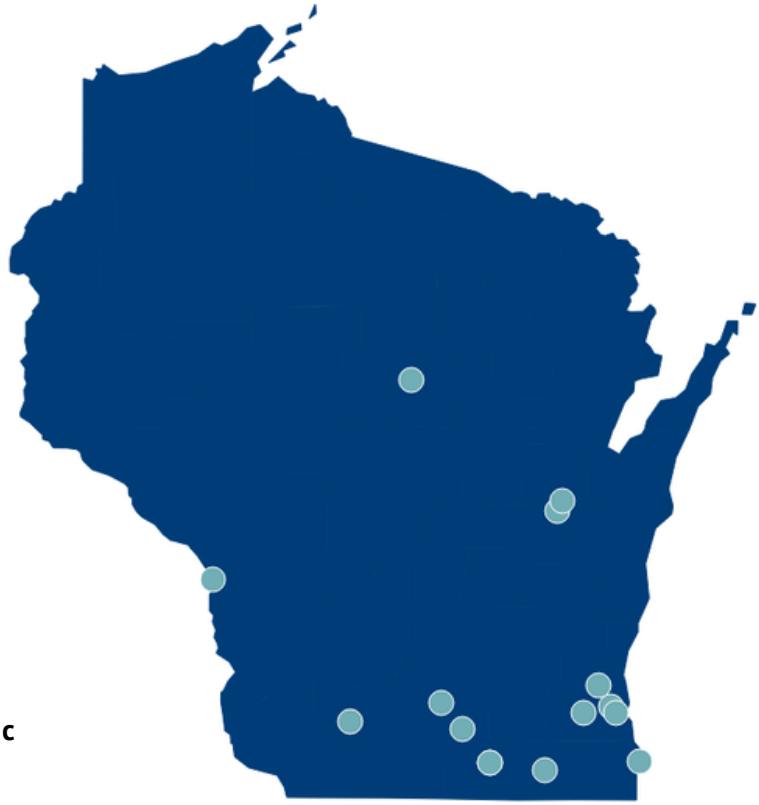
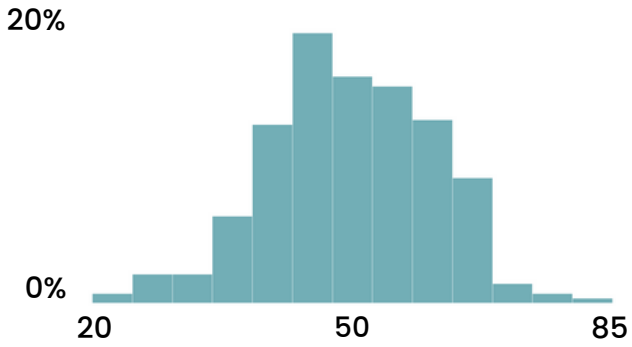


# PATIENT DEMOGRAPHICS

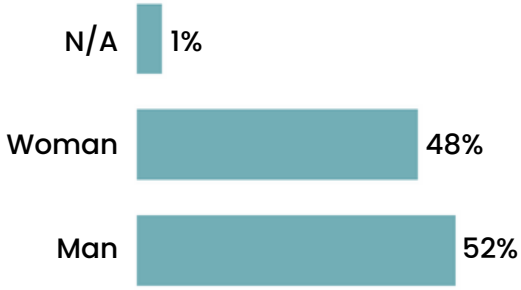
**392** SMBP patients enrolled

**Age Distribution, Percent of Patients**

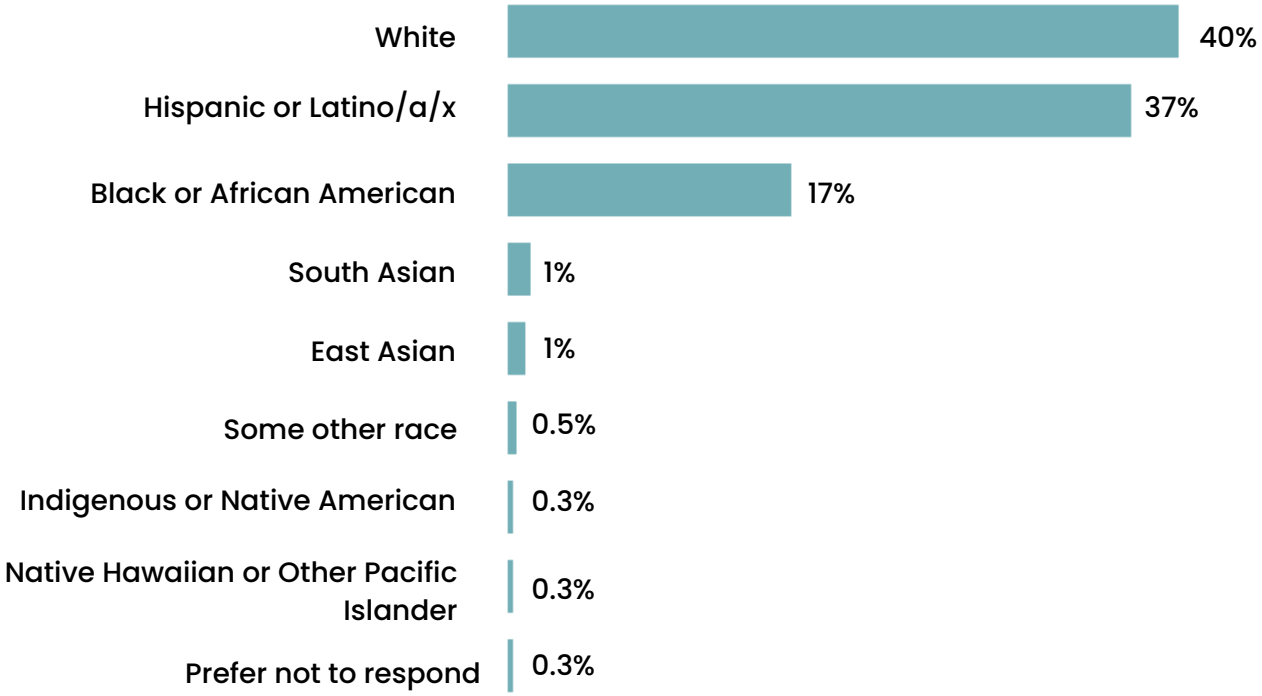
Median age: 50 years




**Gender Identification**




**Percent of Patients by Race and Ethnicity**



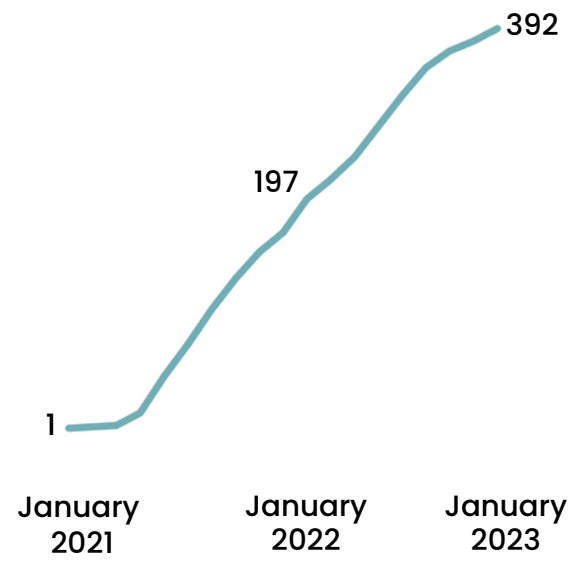
# WAFCC CLINICS' OUTCOMES & IMPACT

**16,269** blood pressure readings taken by patients and returned to clinics

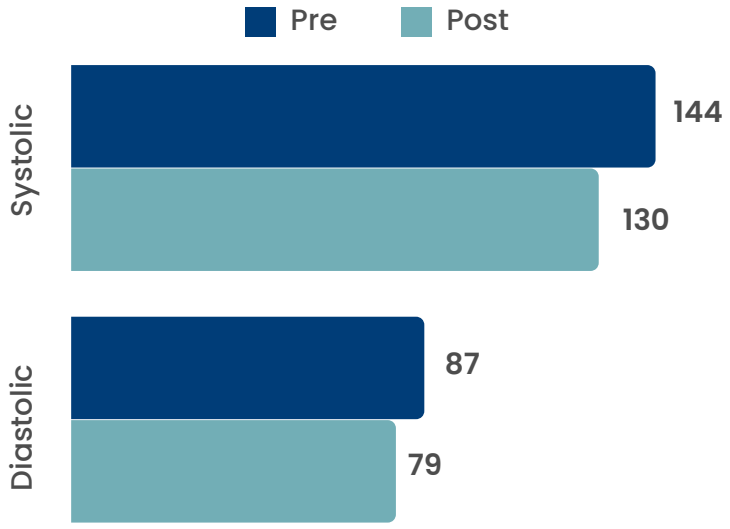
**77%** of patients still actively enrolled or completed program

**86** days on average patients had SMBP loaner monitors

**Cumulative Patient Enrollment**



Between January 2021 and January 2023, clinics indicated 105 patients completed their programming and had pre/post average blood pressure readings available for analysis. On average, systolic blood pressure readings decreased 14mmHg and diastolic blood pressure decreased 8mmHg.




Pre and post average blood pressure readings for the same 105 patients were categorized according to the American College of Cardiology and American Heart Association (ACC/AHA) High Blood Pressure Guidelines. Clinics reduced the total number of patients with average blood pressure readings aligning with Stage 1 and 2 hypertension between pre and post. For the 17 patients with Stage 2 hypertension at pre, 14 achieved a reading of > 140/90 (Stage 1 or less) at post. For the 76 patients with Stage 1 hypertension at pre, 23 moved down to the Normal or Elevated categories.

| ACC/AHA High Blood Pressure Guidelines Category | Pre | Post |
|---|---|---|
| **Normal**: Less than 120/80 | **7** | **20** |
| **Elevated**: Systolic 120-129 and diastolic less than 80 | **5** | **19** |
| **Stage 1**: Systolic 130-139 or diastolic 80-89 | **76** | **55** |
| **Stage 2**: Systolic at least 140 or diastolic at least 90 | **17** | **11** |

# OUTCOMES & IMPACT
## COMMUNITY CONNECTIONS FREE CLINIC

### PROGRAM GOAL
Use the SMBP program to enhance services for chronic disease populations.

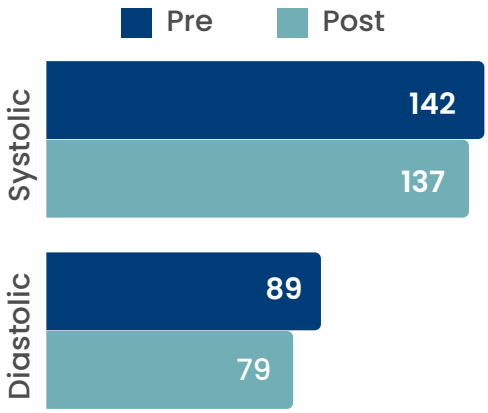
### PRIORITY POPULATION
Patients with hypertension.


"I've been the RN in charge of the SMBP program at the clinic since May 2022. It has been my pleasure to be able to receive blood pressure logs through text messages, email or in person. I'm so happy to see that our patients are taking care of their blood pressure because they found a trusted and caring clinic. They know that we hear their concerns and find solutions in a timely manner.

- Juliana Rendon Lopez
  Registered Nurse

**62** total SMBP patients enrolled

41 patients returned post blood pressure readings. On average, systolic blood pressure readings decreased 5mmHg and diastolic decreased 10mmHg.




### CLINICIAN'S NOTES

Our patient J is a 73-year-old Latino male who came to the clinic with shortness of breath after just moving to WI. He had very high blood pressure so during the visit we provided blood pressure medication from our pharmacy and an automatic blood pressure cuff to track his BP for the next 2 weeks. We monitored him at clinic visits every 2 weeks for 2 months. We also did blood work and found out that he had diabetes so we were able to provide medication to treat his asthma, high blood pressure, and diabetes. We continue to work with J to manage his blood pressure and other conditions.

J's daughter came to a recent visit and complained of a headache. We found that she had very high blood pressure so we also provided her with a blood pressure cuff and follow up in the clinic twice a week.

Froedtert & Medical College of Wisconsin
Froedtert Menomonee Falls Hospital
Community Outreach Health Clinic

# OUTCOMES & IMPACT
## COMMUNITY OUTREACH HEALTH CLINIC

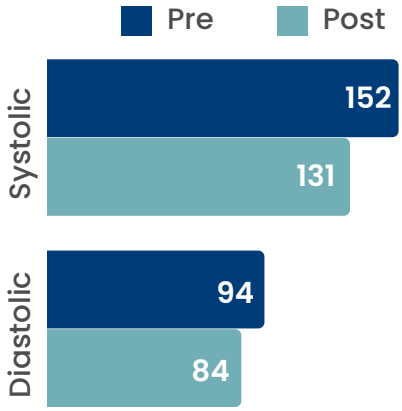
### PROGRAM GOALS

- Educate patients to recognize healthy and unhealthy blood pressure ranges, the risks of high blood pressure, the importance of management, and control methods.
- Reduce blood pressures to the American Heart Association's recommended range by patient age group.

### PRIORITY POPULATIONS

Patients who have been seen at the clinic in the last six months and have uncontrolled blood pressure (140/90), and/or comorbid conditions.

14 patients returned post blood pressure readings. On average, systolic blood pressure readings decreased 21mmHg and diastolic decreased 10mmHg.




**28** total SMBP patients enrolled

"By joining this program, I have become aware of how high blood pressure can affect your physical health. Earlier I did not take it seriously, but now talking to Linda Smith, I am working at getting my blood pressure under control. I am very thankful to the COHC for helping me manage my blood pressure"
*-Sim, 41-year-old male SMBP patient*

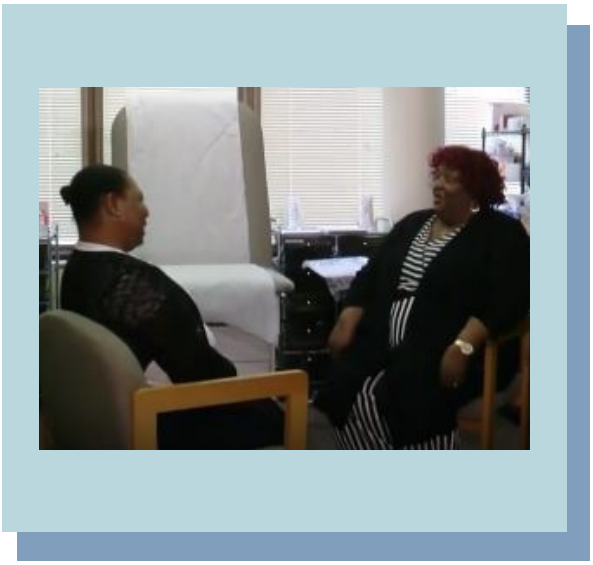
### CLINICIAN'S NOTES

"The WAFCC SMBP Initiative has been beneficial for our patients and clinic. Providers are able to better diagnose and manage patients with hypertension. High blood pressure can lead to major health conditions such as heart attacks, heart failure, stroke, and kidney failure. We have found that getting patients to be more engaged in their treatment increases their motivation to improve their health. Having the SMBP program helps our staff become more aware of the current guidelines for practice."
*- Linda S. Smith, APNP*
*Clinic Coordinator*

# OUTCOMES & IMPACT
## FINDLEY FOUNDATION

**PROGRAM GOAL**
Use SMBP to help the highest risk patients achieve blood pressure control.

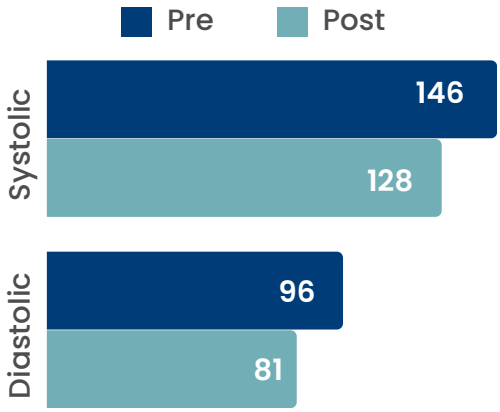
**PRIORITY POPULATION**
Patients with hypertension able and willing to use blood pressure monitors with Bluetooth capability and applications to electronically transmit patient data.



**19** total SMBP patients enrolled

"If I didn't get in the program and get the treatment for diabetes & high cholesterol, there's a chance for me to have a stroke or heart attack. I eat more fruits, vegetables, drink more water, and I jog on holiday now."
*-45-year-old male SMBP patient*

8 patients returned post blood pressure readings. On average, systolic blood pressure readings decreased 21mmHg and diastolic decreased 10mmHg.




**DOCTOR'S NOTES**

"SMBP offers a fantastic chance to carefully monitor patients with hypertension, high cholesterol and risk for cardiovascular diseases. Offering SMBP to patients through this initiative helped our clinic to modify medication dosage in order to come up with the most effective treatment strategy.

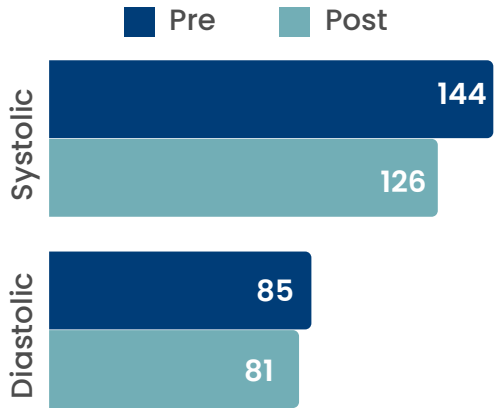
It improves our understanding of our patients' average blood pressure levels so we can us establish attainable blood pressure goals together."
*-Dr. Stephanie Findley*
*Board Vice-Chair*

# OUTCOMES & IMPACT
## HEALTH CARE NETWORK

### PROGRAM GOAL
Use SMBP for physician-patient clinical decision making.

### PRIORITY POPULATION
Active patients with a hypertension diagnosis or concerning recent blood pressure reading.

10 patients returned post blood pressure readings. On average, systolic blood pressure readings decreased 18mmHg and diastolic decreased 4mmHg.




**22** total SMBP patients enrolled

"The SMBP program has been instrumental in improving the management of our clinic's chronically ill patients. We have been extremely successful in educating patients about the dangers of chronically high blood pressure, and allowing them to manage their health at home has significantly increased the accessibility of our services. We are extremely grateful for the funding WAFCC provides and we are proud to witness the direct improvement of so many patients' lives."
*-Crystal Gruenewaldt*
*Clinic Manager*

### ONE PATIENT'S JOURNEY

"We had one patient is in his mid-forties who visited the clinic for dental services. When the dental team took his blood pressure as part of their protocol, they found it was dangerously high. They referred him to the SMBP program so that so we could determine if his pressure was chronically high.

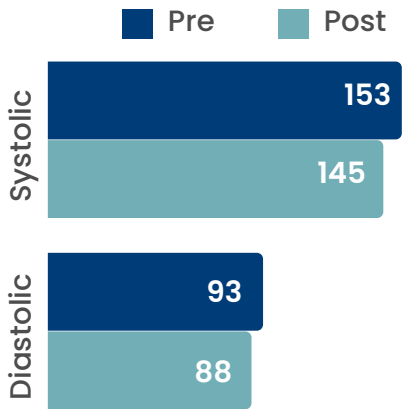
After determining that he did in fact have chronically high blood pressure, this patient was established with one of our primary care providers to manage his illness. He confided in the provider that he had been having chest pain for years and was subsequently referred to a cardiologist. Thankfully, the cardiologist did not find any life-threatening disease, and our patient has been able to lower his blood pressure substantially through our SMBP program. At one visit, he even claimed that the SMBP program had "saved him from ending up in the ED, and probably had even saved his life!"

# OUTCOMES & IMPACT
## HOPE CLINIC AND CARE CENTER, INC.

### PROGRAM GOALS
- Improve the health of our patients with hypertension by decreasing their blood pressure with the help of SMBP and care management.
- Provide SMBP to 25 patients, with a goal to expand to 5-10 patients or more annually.

### PRIORITY POPULATIONS
- Patients with uncontrolled hypertension.
- Patient with negative medication adherence


34 patients returned post blood pressure readings. On average, systolic blood pressure readings decreased 8mmHg and diastolic decreased 5mmHg.




**75** total SMBP patients enrolled

"I think it's wonderful that we can provide our patients with the proper equipment to manage their chronic hypertension at home. The extra cost of a blood pressure monitor for home use would be another worry for them. Most of our patients struggle just to make ends meet. The SMBP Initiative has been a blessing to many."
*-A. Smiley, RN*

### DIRECTOR'S NOTES

"Our patient "May" has truly benefitted from our Care Management Plan and our SMBP programming. May struggled with obesity and hypertension for years. Since she started our programming, she has slowly but surely instituted modifications in her lifestyle. Currently, her weight is down 20 pounds, but her blood pressure has been difficult to control, so we continued monitoring her blood pressure through our SMBP program. She continued tracking her blood pressure at home and sent readings back to the clinic. Her provider has been able to try different medications to ensure proper control. We are hopeful that this last combination of medication and lifestyle changes will lead May to therapeutic control of her blood pressure."
*-Shelby Miller*
*Executive Director*

# OUTCOMES & IMPACT
## OPEN ARMS FREE CLINIC, INC.

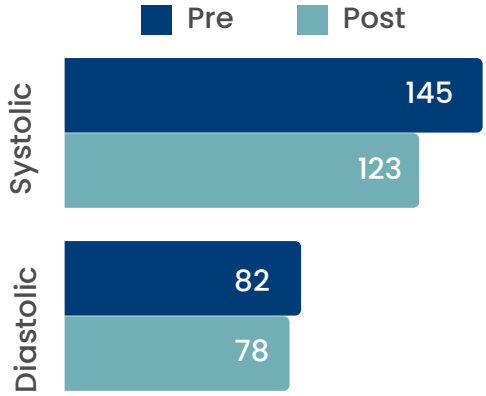
### PROGRAM GOAL
To reduce blood pressure and improve blood pressure control

### PRIORITY POPULATION
Patients with a diagnosis of diabetes and hypertension.

**52** total SMBP patients enrolled

**5,443** blood pressure readings taken by patients and returned to clinic.

19 patients returned post blood pressure readings. On average, systolic blood pressure readings decreased 22mmHg and diastolic decreased 4mmHg.




### ONE PATIENT'S SMBP JOURNEY

"A 62-year-old Spanish-speaking male presented at our clinic worried that he might need heart medication. He'd had elevated blood pressure in the past, and described being nervous at appointments when visiting the clinic. Based on his blood pressure readings and lipid levels, the treating physician recommended diet and exercise modifications, and that he consider joining our SMBP program. This patient was highly motivated to better understand his blood pressure readings, and excited about participating.

During subsequent visits with him, our Certified Dietician and nursing staff learned that he did not have personal transportation to our clinic and was unable to read the Spanish handouts we'd provided. We arranged transportation services for him and made literacy accommodations part of his treatment plan.

Since May, he's returned completed blood pressure logs to our clinic each week, which allowed the treating physician to see that he was not a candidate for medication therapy. Now when the patient comes to our clinic, he is more relaxed, confident that he has control of his health, and knows we are supportive partners in his care."

*-Open Arms Free Clinic staff*

Waukesha Free Clinic
AT CARROLL UNIVERSITY

# OUTCOMES & IMPACT
## WAUKESHA FREE CLINIC

### PROGRAM GOAL
Actively involve patients in their care to promote understanding of disease process and achieve hypertension control.

### PRIORITY POPULATION
Patients with diabetes and other metabolic disorders.

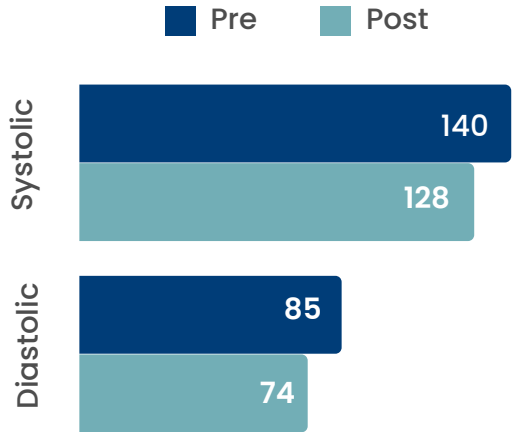
**24** total SMBP patients enrolled

**1,624** blood pressure readings taken by patients and returned to clinic.

### DOCTOR'S NOTE

Our most successful patient was JR, a 40-year-old Spanish-speaking male who was seen in the clinic for uncontrolled hypertension. Since enrollment in the SMBP program JR has faithfully checked his blood pressure twice daily and reported his values weekly. He was also referred to a Cardiology clinic who assisted with hypertension management. Today he is controlled with medication, diet, and exercise. Although he needs multiple medications to control his HTN, his awareness of his values has facilitated his participation in his own care leading him to keep his appointments, take his medication, improve his exercise routine and diet. JR believes in the SMBP program and has requested to re-enroll.

9 patients returned post blood pressure readings. On average, systolic blood pressure readings decreased 12mmHg and diastolic decreased 9mmHg.



# SMBP SUSTAINABILITY

## WHAT DO CLINICS NEED FOR THE FUTURE?

Now that the clinics have established their successful SMBP programs, they are considering what resources will be needed to sustain and grow them. As the current grant funding ends in June 2023, the clinics will be seeking additional funding for:

### Blood pressure cuffs

The initial funding provided cuffs that are being loaned to patients while they are in the program. However, more cuffs will be necessary to replace cuffs that are not returned or become outdated over time. One clinic has a waiting list as they do not have enough cuffs to meet patient needs. With additional funding equipment they could grow the program's impact. Some clinics have chosen to provide patients with a cuff to keep, empowering them to manage their BP after they graduate from the program. This will require ongoing funding for equipment costs. Equipment to test calibration of equipment is also needed.

### Staff time

Clinic staff have been essential to the success of the SMBP programs as they conduct patient check-ins, track data, and implement quality improvement efforts. While free and charitable clinics often run on volunteers, it is important to have qualified and consistent staff to ensure that the programs run smoothly and are evaluated to show impact.

### Additional patient support

One clinic indicated that many of their clients are immigrants who are have a hard time paying for their medications and are ineligible for many prescription assistant programs without a social security number. With additional funding they would be able to provide these patients with free medication for three months.

### Improved technology

One clinic expressed interest in utilizing technology for patients to report their BP readings online to help increase the number of patients who actively participate in the program. The clinics' electronic health record systems often lack capability to track home BP measurements and pull reports to evaluate patient progress, which requires clinics to use separate tools and duplicate efforts. Funding for a more robust health record system would have a significant impact for all clinic operations, beyond just their SMBP programs.

> Our clinic is mostly funded by grants, and we assist low-income, underinsured, and uninsured individuals and families by educating them about strategies to avoid dreaded illnesses. Additional funding would help us in our effort to bring about systemic improvements. This is a testament to our aim of assisting people in becoming healthy, healed, and whole.
> - Michelle Cruz, Findley Foundation

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