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Using the Minnesota All Payer Claims Database (MN APCD) to Achieve Public Health Goals for Hypertension

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PROTECTING, MAINTAINING AND IMPROVING THE HEALTH OF ALL MINNESOTANS

Acknowledgments

- Cardiovascular Disease Unit, MDH
  - Project Lead/Analyst
    - James Peacock
    - Emily Styles
- Health Economics Program, MDH
  - Technical Assistance and Support
    - Elizabeth Egan
    - Mike Burian

Overview

- 3 hypertension projects using the **MN APCD**
  - Project 1: State and local overview of the hypertension prevalence in Minnesota (report)
  - Project 2: Blood pressure medication adherence (dashboard, report)
  - Project 3: Pharmacist-provided Medication Therapy Management (MTM) for patients with hypertension (tailored summary of benefits and revenue)
- Key takeaways and outreach

Project 1: Geographic Variation in Hypertension in Minnesota, 2014

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MNAPCD
All Payer Claims Database

Hypertension Report

Key Findings

OVERALL

30.5%

In 2014 in Minnesota, three out of every ten insured Minnesota adults had a diagnosis of hypertension.

Hypertension is more common in older age groups and more common in men than women.

Medicaid 22.0%

Commercial Insurance 18.6%

Hypertension is slightly more common in the low-income Medicaid population than the commercial insurance population.

Hypertension is **more common in rural areas** than metropolitan areas.

rural

metropolitan

BY GEOGRAPHY

- The lowest levels of hypertension are in counties along the Twin Cities-Rochester-St. Cloud corridor.
- Hypertension prevalence is highest in northwest Minnesota across all age and insurance groups.
- All but one of Minnesota's 87 counties is home to more than 1,000 adults with hypertension.
- There are 18 counties with an estimated 10,000 adults or more with hypertension, including 11 counties located in Greater Minnesota, outside the 7-county Twin Cities metro.
- For younger adults aged 18 to 44 years, hypertension is most common in a large group of neighboring counties covering much of northern, east central, and west central Minnesota.
- For older adults aged 65 and older, hypertension is most common in parts of northwest and southwest Minnesota.
- In the 7-county Twin Cities metro area, prevalence of hypertension varies widely across short distances.
- Higher hypertension prevalence in the 7-county Twin Cities metro area is largely centered in Minneapolis and adjacent communities to the north, and in St. Paul and adjacent communities to the east.

- State and local overview of hypertension prevalence in Minnesota
  - First MN report to show hypertension estimates by local communities
- State and local public health and health system partners can use to address geographic disparities with tailored interventions
- Served as a frame for Project 2 (medication adherence)

https://www.health.state.mn.us/data/apcd/publications.html

County and ZIP Code Level Data

County	Number of Adults with HTN	All Adults, Age-Adjusted Prevalence	Age 18-44 Prevalence	Age 45-64 Prevalence	Age 65+ Prevalence	Medicare Prevalence	Dually-Eligible Medicare & Medicaid Prevalence	Medicaid Prevalence	Commercial Insurance Prevalence
MINNESOTA	**968,626**	**25.4%**	**7.9%**	**34.3%**	**65.6%**	**63.7%**	**59.7%**	**22.0%**	**18.6%**
Aitkin	4,603	29.0%	10.9%	40.3%	67.1%	65.9%	62.3%	27.1%	27.1%
Anoka	61,173	27.1%	8.5%	36.4%	68.3%	66.8%	58.3%	22.2%	20.3%
Becker	7,223	27.4%	9.1%	38.9%	65.1%	63.4%	63.7%	23.6%	22.5%
Beltrami	8,457	28.8%	10.3%	39.2%	67.9%	64.3%	62.9%	22.4%	22.1%
Benton	6,569	25.8%	8.1%	34.8%	66.1%	63.3%	55.2%	21.0%	18.1%
Big Stone	1,452	30.2%	11.1%	41.4%	69.7%	68.0%	68.0%	30.0%	25.2%
Blue Earth	10,345	25.4%	7.5%	35.0%	65.9%	63.8%	53.7%	18.3%	18.3%
Brown	5								
Carlton	7								
Carver	13								
Cass									
Chippewa									
Chisago	10								
Clay	9								
Clearwater									
Cook	1								
Cottonwood	7								
Crow Wing	15								
Dakota	66								
Dodge	3								
Douglas	8								
Faribault	3								
Fillmore	3								
Freeborn	6								
Goodhue	8								
Grant									
Hennepin	193								
Houston	3								

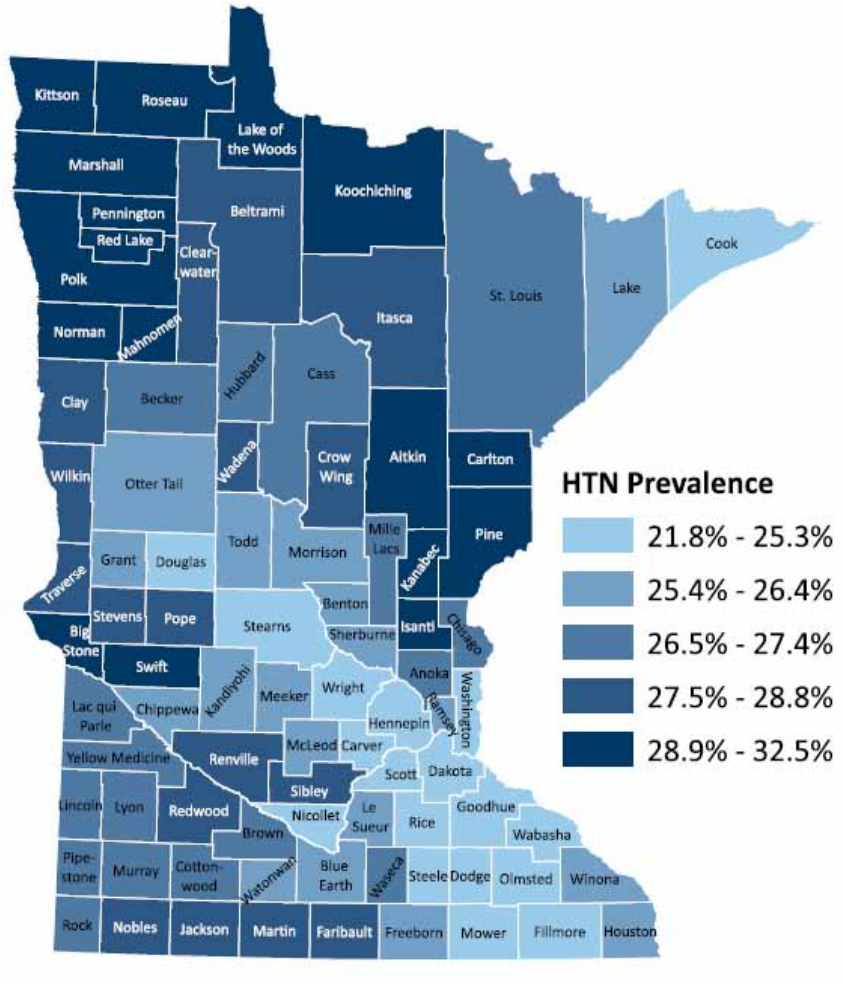
Zip Code	Primary City or Town	Number of Adults with Hypertension	All Adults, Age-Adjusted Prevalence	Age 18-64 Prevalence	Age 45-64 Prevalence	Age 65+ Prevalence	Medicare Prevalence	Dually-Eligible Medicare & Medicaid Prevalence	Medicaid Prevalence	Commercial Insurance Prevalence
-	**MINNESOTA**	**968,626**	**25.4%**	**7.9%**	**34.3%**	**65.6%**	**63.7%**	**59.7%**	**22.0%**	**18.6%**
55001	Afton	541	18.5%	3.6%	25.4%	54.8%	54.3%	-	20.0%	17.5%
55003	Bayport	458	23.0%	5.9%	29.4%	73.1%	72.2%	-	18.7%	15.8%
55005	East Bethel	687	27.3%	9.2%	36.3%	67.9%	64.9%	52.5%	20.3%	20.9%
55006	Braham	789	30.5%	11.6%	43.6%	69.7%	67.3%	57.8%	23.0%	25.6%
55007	Brook Park	524	29.0%	11.4%	39.5%	67.9%	65.6%	62.7%	24.6%	26.5%
55008	Cambridge	3,307	30.5%	12.4%	40.9%	70.2%	68.9%	62.0%	26.3%	23.7%
55009	Cannon Falls	1,633	25.6%	7.3%	36.0%	64.8%	63.5%	56.0%	23.3%	21.5%
55011	East Bethel	1,719	26.0%	8.2%	34.0%	66.3%	64.1%	52.4%	19.8%	21.4%
55012	Center City	369	23.4%	6.8%	30.0%	62.3%	62.4%	-	17.3%	19.8%
55013	Chisago City	1,361	25.2%	8.3%	32.6%	67.5%	67.4%	55.2%	23.5%	19.7%
55014	Lino Lakes	4,419	26.0%	7.8%	33.8%	67.8%	66.2%	58.2%	23.3%	20.0%
55016	Cottage Grove	5,623	26.2%	8.4%	34.3%	67.6%	65.8%	53.9%	22.9%	18.8%
55017	Dalbo	142	26.2%	-	36.2%	73.7%	66.3%	-	25.7%	20.9%
55018	Dennison	188	24.9%	8.3%	31.5%	65.7%	61.0%	-	-	22.1%
55019	Dundas	323	24.3%	8.3%	31.1%	62.6%	62.5%	-	17.5%	17.8%
55020	Elko New Market	433	22.3%	5.8%	28.8%	60.2%	57.5%	71.9%	23.6%	14.5%
55021	Faribault	5,129	25.8%	8.3%	34.0%	66.9%	65.4%	52.9%	19.8%	19.7%
55024	Farmington	4,092	25.7%	8.2%	32.7%	66.7%	63.8%	59.1%	20.9%	17.0%
55025	Forest Lake	4,462	25.7%	8.1%	34.5%	65.9%	63.8%	61.6%	21.8%	20.6%
55026	Frontenac	93	19.7%	-	25.0%	60.2%	58.9%	-	-	18.3%
55027	Goodhue	423	23.3%	5.6%	31.3%	66.1%	65.5%	67.7%	22.7%	15.4%
55029	Grandy	14	16.2%	-	-	-	-	-	-	-
55030	Grasston	308	30.2%	10.0%	39.0%	80.2%	77.2%	72.5%	24.1%	24.3%

Data:

- Number with HTN
- Age-adjusted HTN prevalence
- HTN prevalence by:
  - Age group
  - Payer

MDH analysis of MN APCD data

Geographic Variation (1)



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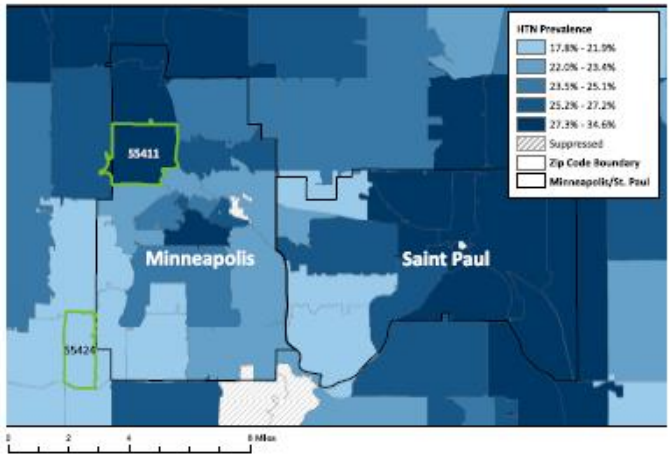
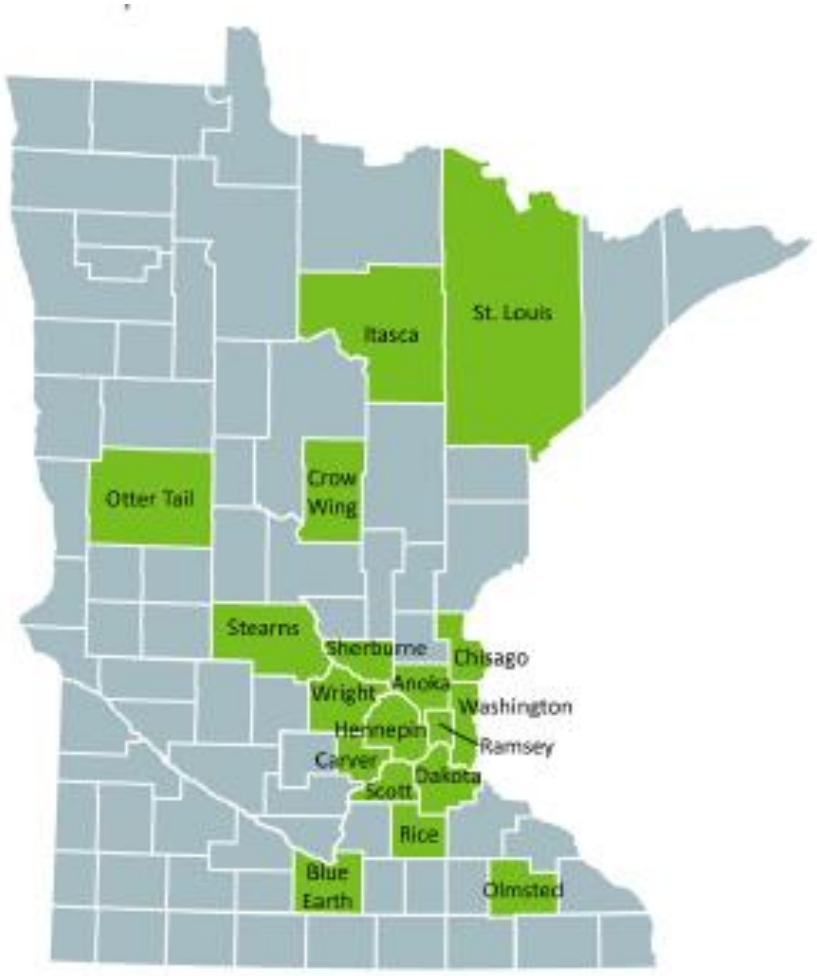
- Hypertension prevalence is highest in northwest Minnesota across all age and insurance groups.



- In the 7-county Twin Cities metro area, HTN prevalence varies widely across short distances

MDH analysis of MN APCD data

Geographic Variation (2)

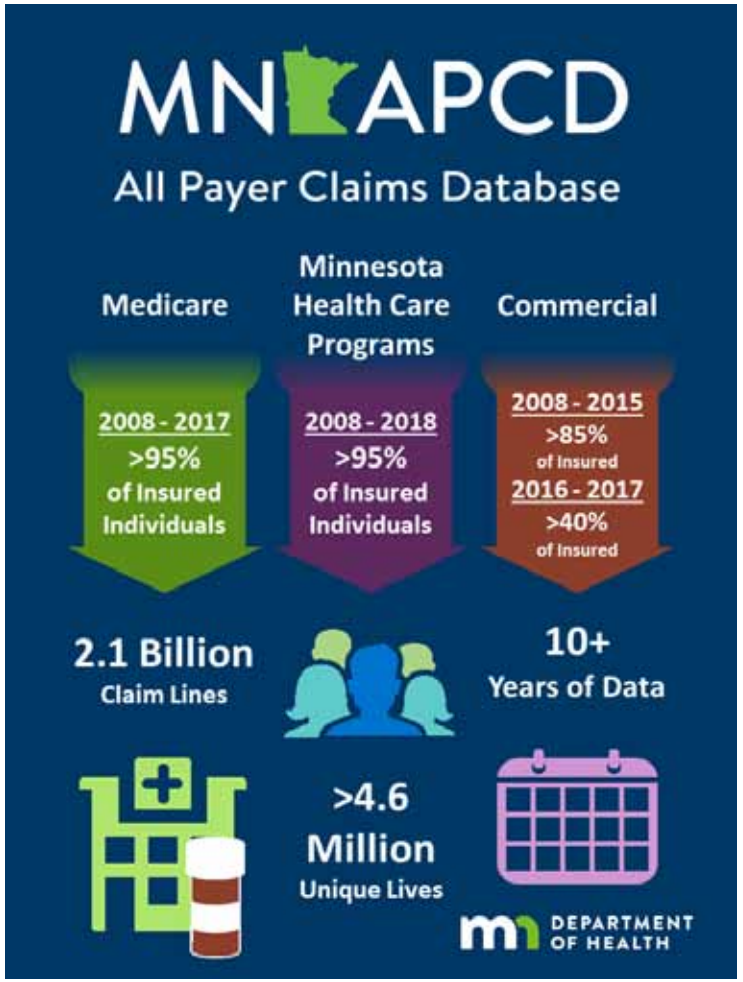


- 18 MN counties had 10,000 adults with hypertension
- 11 of these are in Greater MN (outside 7-county Mpls-St. Paul metro area)

MDH analysis of MN APCD data

MN APCD
All Payer Claims Database

MN APCD and Comparison with BRFSS



	Behavioral Risk Factor Surveillance System (BRFSS)	Minnesota All Payer Claims Database (MN APCD)
Source of HTN information	Self-report (awareness)	Dx and Rx codes (treated prevalence)
Source of study sample (population)	Sample of a small proportion of Minnesotans	Before 2016, over 90% of insured Minnesotans
Geographic granularity	State-level estimates	Can show data at county level and for most ZIP codes

Project 2: Blood Pressure Medication Adherence

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MN APCD
All Payer Claims Database

Blood Pressure Medication Adherence

Disease Prevention and Management Indicators

Indicator	*Date of Most Recent Measure*	*Current Measure*
Optimal Vascular Care	2017	61.4%
Controlling High Blood Pressure	2017	78.2%
High Blood Pressure Prevalence	2017	24.3%
High Cholesterol Prevalence	2017	25.1%
Blood Pressure Medication Adherence	2015	ACE/ARB: 78.3% Diuretics: 72.7%

Use pharmacy claims data from MN APCD to calculate **Proportion of Days Covered (PDC)** as a measure of blood pressure medication adherence

- Adherence based on 80% threshold

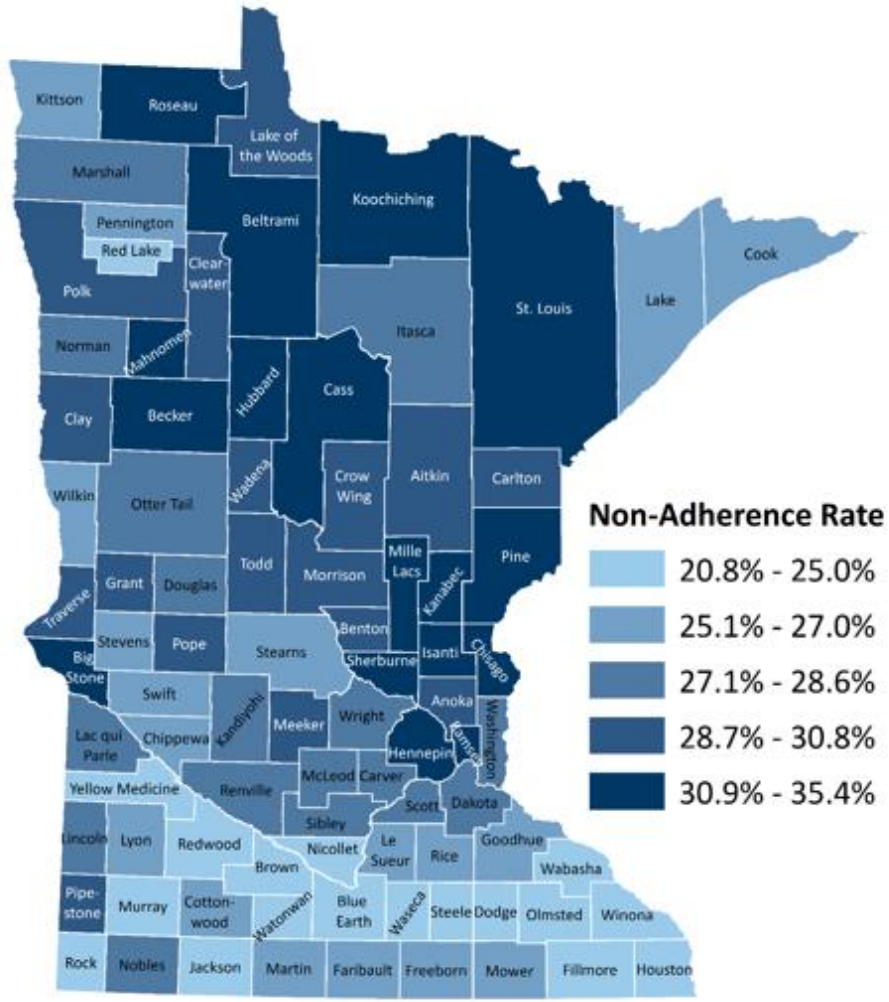
MDH Cardiovascular Health Indicator Dashboard

- Adherence

Forthcoming state report

- Non-adherence by age, sex, payer, geography

Forthcoming State Report



Age Group	Number Taking BP Meds	Percent Non-Adherent
All ages	849,258	29.2%
18-44 years	91,421	49.4%
45-64 years	356,381	27.6%
65-85 years	401,456	26.0%

MDH analysis of MN APCD data

Non-Adherence by Type of Insurance Adults aged 18 to 85, 2015

Insurance Type	Percent Non-Adherent
Medicare	26%
Dual Eligible	37%
Medicaid	51%
Commercial	25%

MDH analysis of MN APCD data
Included Minnesotans with any months enrollment and 2 or more claims for blood pressure medication

Some Caveats

- Proper adherence to blood pressure medication has positive impact on patient health
- Medication adherence can be measured from claims data
  - BUT…
    - It is only one measure
      - There are other important medication issues
    - Reasons for non-adherence include side effects
      - May indicate safety issues for patient

Recommendations

- The reports for Projects 1 and 2 include recommendations for:
  - Individuals
  - Health care providers
  - Pharmacists
    - Provide Medication Therapy Management services to patients experiencing adherence challenges, side effects, or those struggling to reach their blood pressure goal
  - Payers
  - Communities

Project 3: Pharmacist-Provided Medication Therapy Management

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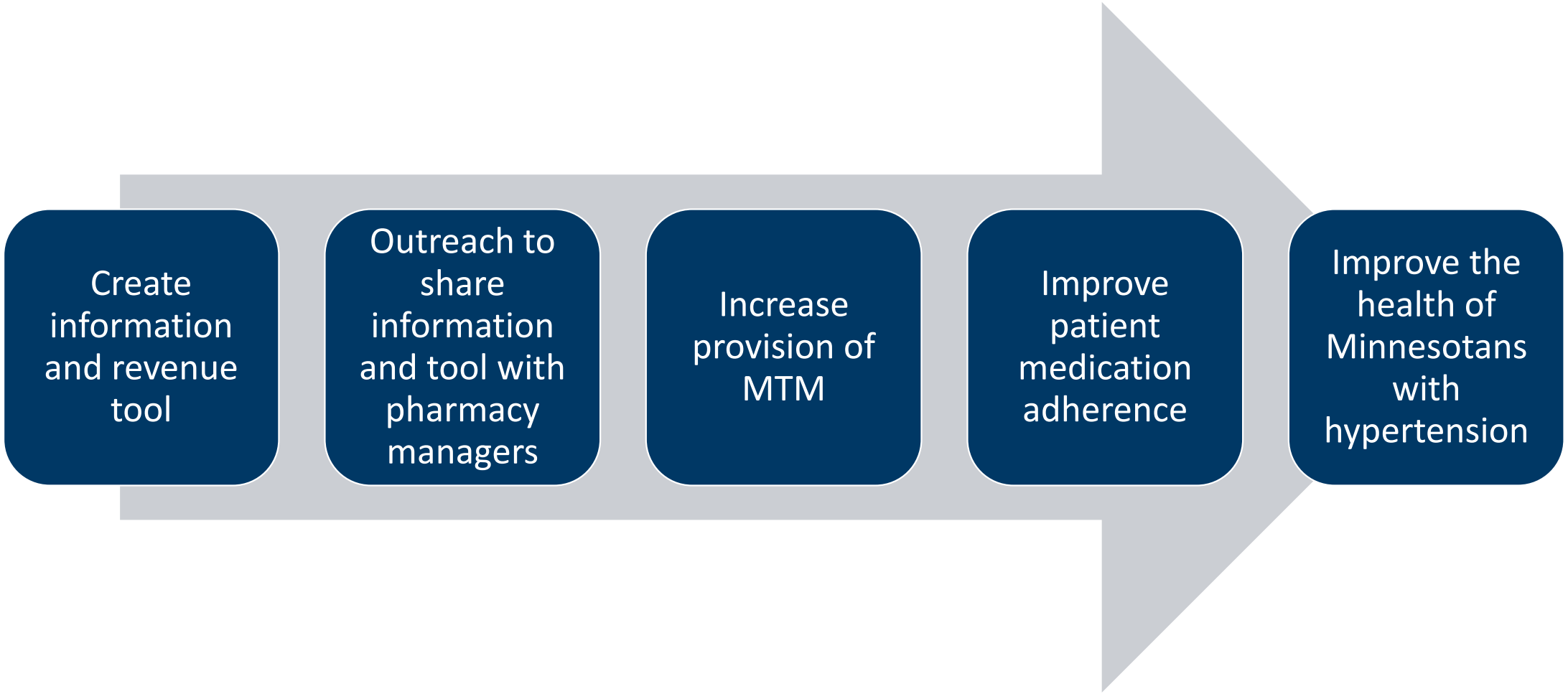
Medication Therapy Management

- MTM visits with a pharmacist may improve hypertension medication adherence and reduce the number of emergency department visits, inpatient stays, and length of hospital stay
- Pharmacist-provided MTM is a covered benefit for Minnesotans with Medicare, Medicaid, and certain commercial health plans
  - Not all community pharmacies have been providing this service
- Outreach to pharmacy managers in Minnesota
  - Eligibility criteria for Minnesota Medicaid recipients have relaxed some and pharmacists may not know how large this group is

MTM and Public Health Goals for Minnesota



Approach

- Aggregate counts of eligible patients at ZIP code level and assign to PCSA and counties
  - Patient population (informed by Projects 1 and 2)
    - Minnesota Health Care Programs
    - Johns Hopkins ACG® System to identify hypertension cases in MN APCD
      - Minnesota Medicaid eligibility requires at least one other chronic condition
    - Non-adherent to blood pressure medication(s)
    - No previous MTM
  - Estimate revenues per MTM visit from claims for MHCP
    - Conservative estimate of patients who could benefit from MTM

Worksheet Shared with Pharmacy Manager of Pharmacy X

PCSA Code	PCSA City	Store Locations	MN Health Care Program Patients w/ HTN and no MTM	Percent of Patients targeted	1 visit only	Initial Visit Revenue (99605)	Average Added Time (99607)	Total 1 Visit Revenue	More than 1 visit	Initial Visit Revenue (99605)	Follow-up Visit Revenue (99606)	Average Added Time (99607)	Total Revenue	Total Hours of Billable Service	% Annual FTE
MN00_ADA	Ada	Ada	<30	100											
MN00_AITKIN	Aitkin	McGregor	585	100	269	$ 13,988	$ 5,901	$ 19,889	316	$16,432	$ 28,762	$ 19,188	$104,159	619	30%
MN00_ALEXANDRIA	Alexandria	Alexandria, Osakis	866	100	398	$ 20,696	$ 8,731	$ 29,427	468	$24,336	$ 42,596	$ 28,417	$154,202	917	44%
MN00_ANNANDALE	Annandale	Annandale	227	100	104	$ 5,408	$ 2,281	$ 7,689	123	$ 6,396	$ 11,195	$ 7,469	$ 40,438	241	12%
MN00_AURORA	Aurora	Hoyt Lakes	133	100	61	$ 3,172	$ 1,338	$ 4,510	72	$ 3,744	$ 6,553	$ 4,372	$ 23,689	141	7%
MN00_BAGLEY	Bagley	Bagley, Clearbrook	166	100	76	$ 3,952	$ 1,667	$ 5,619	90	$ 4,680	$ 8,192	$ 5,465	$ 29,575	176	8%
MN00_BEMIDJI	Bemidji	Bemidji	719	100	331	$ 17,212	$ 7,261	$ 24,473	388	$20,176	$ 35,315	$ 23,559	$127,996	760	37%
MN00_BENSON	Benson	Morris	243	100	112	$ 5,824	$ 2,457	$ 8,281	131	$ 6,812	$ 11,923	$ 7,954	$ 43,251	257	12%
MN00_CROOKSTON	Crookston	Crookston, Fertile, Red Lake Falls	223	100	103	$ 5,356	$ 2,259	$ 7,615	120	$ 6,240	$ 10,922	$ 7,286	$ 39,679	235	11%
MN00_DETROIT LAKES	Detroit Lakes	Detroit Lakes	630	100	290	$ 15,080	$ 6,361	$ 21,441	340	$17,680	$ 30,946	$ 20,645	$112,154	666	32%
ND02_FARGO	Fargo ND	Mahnomen	307	100	141	$ 7,332	$ 3,093	$ 10,425	166	$ 8,632	$ 15,109	$ 10,080	$ 54,670	325	16%
MN00_FERGUS FALLS	Fergus Falls	Fergus Falls, Fergus Falls	482	100	222	$ 11,544	$ 4,870	$ 16,414	260	$13,520	$ 23,665	$ 15,787	$ 85,799	510	25%
MN00_FOREST LAKE	Forest Lake	Forest Lake	638	100	293	$ 15,236	$ 6,427	$ 21,663	345	$17,940	$ 31,401	$ 20,948	$113,616	676	32%
MN00_GRAND RAPIDS	Grand Rapids	Grand Rapids	666	100	306	$ 15,912	$ 6,712	$ 22,624	360	$18,720	$ 32,766	$ 21,859	$118,595	705	34%
MN00_GRANITE FALLS	Granite Falls	Granite Falls	97	100	45	$ 2,340	$ 987	$ 3,327	52	$ 2,704	$ 4,733	$ 3,157	$ 17,249	102	5%
MN00_HIBBING	Hibbing	Hibbing	782	100	360	$ 18,720	$ 7,897	$ 26,617	422	$21,944	$ 38,410	$ 25,624	$139,211	827	40%
		Hinckley,													

MDH analysis of MN APCD data

Summary

- Projects 1 and 2 describe hypertension prevalence and medication adherence in Minnesota
  - Report that summarizes findings and action items
  - Supplement provides data at county and ZIP code levels
- Project 3 applies and translates the data to share with pharmacists and promote MTM

Thank You

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Health Economics Program: www.health.state.mn.us/healtheconomics

MN All Payer Claims Data: https://www.health.state.mn.us/data/apcd/index.html