There are 4 types of metrics identified in the table below to support your organization's hypertension management program:

Population – population metrics show the group(s) of patients who benefit from a program (prevalence), and help when planning program implementation. These can also be key when looking at quality improvement (QI) projects and long term outcomes (e.g. overall reduction in cardiovascular risk factors, increasing access to a program). Population indicators are used less frequently than clinical process indicators, but are powerful aids in understanding access, resource needs and potential of a program.

Clinical Process – key to any program are the steps taken during and after clinical encounters. Process indicators identify how frequently tasks are completed compared to guideline expectation (e.g. BP taken), and their counterpart are indicators that demonstrate where to take action to improve the clinical process (e.g. patients who are overdue for BP). When beginning a program, clinical process indicators should be reviewed frequently to align the team to the goals of the program. As the program matures, and the team is comfortable with the processes, these indicators can be viewed at regular intervals (e.g. quarterly) and discussed with the team, celebrating successes, and identifying barriers and action plans to address barriers (e.g. labs remain outdated, add flag in EMR to prompt lab ordering, add medical directive to allow RN to order routine labs).

Patient Management – these reports provide lists of patients where action is required and are run routinely (e.g. monthly) to keep the program participants up to date with best practices, and help establish the clinical process not only with staff but also with patients.

Clinical Outcomes – the ultimate goal of a program is to positively influence the clinical outcomes of patients. These indicators take time to show change, so when beginning the program, look at these indicators as a 'baseline' for your patients. As the program matures, use these indicators to demonstrate the benefits for patients. When setting goals, remember that each patient is unique and may start in the program at different times, and different stages of their condition. Set targets that reflect this understanding (e.g. target increase in controlled BP by 10% vs. all patients will have controlled BP by Q4).

Type of Metric	Metric	Specs	Alignment	Notes	Run suggestions
Population	1. # of pts. with HTN	Pts. >= 18 yrs of age with HTN**	Hypertension Canada CANHEART HTN1	Include age/DOB and gender with your search results to identify population further for program planning	When planning for a HTN program, planning QI cycle

Type of Metric	Metric	Specs	Alignment	Notes	Run suggestions
Population	2. # of pts. with elevated BP	Pts. >=18 yrs of age without HTN** with BP value(s) =>140/90 within the past 12 mo	Hypertension Canada CANHEART HTN1	Include age/DOB and gender with your search results to identify population further for program planning	When planning for a HTN program, planning QI cycle
Population	3. % of pts. with HTN and select co-morbidity	Numerator: pts. >=18 yrs of age with HTN and a) Depression b) Diabetes c) Dyslipidemia d) Obesity e) Coronary Heart Disease f) Kidney Disease g) Stroke or TIA Denominator: Pts. >=18 yrs of age with HTN	Hypertension Canada	This captures co-morbidity clusters in HTN patients and supports program planning /partnerships (e.g. combining diabetes programming with HTN programming for efficiency) An extension of this cluster can be the % of pts. with elevated BP and select co-morbidity, which can identify pts. at higher risk of developing HTN	When planning for a HTN program, planning QI cycle
Population, Clinical Process, Outcomes	4. % of pts. with HTN and CV risk factors	Numerator: pts. >=18 yrs of age with HTN and risk factors identified; include a) Physical activity (inactivity) b) Smoking c) Alcohol (above low risk guidelines) d) Weight (obesity referenced or BMI>=30)) e) Stress f) Diet/Nutrition (including sodium) g) None of these Denominator: Pts. >=18 yrs of age with HTN	Hypertension Canada CANHEART SMK1 (smoking prevalence) C-CHANGE 2011 CANHEART WHT1 (obesity prevalence)	This captures cardiovascular risk factor clusters in HTN patients and supports program planning /partnerships (e.g. identifying gaps in resources to support patient needs) From a process view, it indicates information being recorded about lifestyle risk factors, and works with 'goals' to demonstrate change behavior support in the organization This can also be used to measure long term outcomes by tracking the change in risk factors over the life of a HTN program (e.g. overall reduction in pts. who smoke, increase in pts. who have no risk factors)	Quarterly

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Type of Metric	Metric	Specs	Alignment	Notes	Run suggestions
Clinical Process	5. % of pts. with HTN with BMI <12 mo	Numerator: pts. >=18 yrs of age with HTN and BMI value <12 mo Denominator: pts. >=18 yrs of age with HTN	Hypertension Canada Diabetes Canada CANHEART WHT2	Height, weight and waist circumference should be measured and BMI calculated for all adult patients	Quarterly
Clinical Process	6. % of HTN pts. with waist circumference measured <12 mo	Numerator: pts. >=18 yrs of age with HTN and waist circumference value <12 mo Denominator: pts. >=18 yrs of age with HTN	Hypertension Canada	Height, weight and waist circumference should be measured and BMI calculated for all adult patients	Quarterly
Clinical Outcomes	7. % of pts. with HTN and CV risk due to waist circumference	a) Numerator: male pts. >=18 yrs of age with HTN and Waist circumference >=102 cm (increased risk) Denominator: male pts. >=18 yrs of age with HTN b) Numerator: female pts. >=18 yrs of age with HTN and Waist circumference >88 cm (increased risk) Denominator: female pts. >=18 yrs of age with HTN	Hypertension Canada Diabetes Canada	Height, weight and waist circumference should be measured and BMI calculated for all adult patients	Quarterly
Clinical Process	8. % of pts. **with** BP value <12 mo	Numerator: pts. with a BP value <12mo Denominator: All pts. >=18 yrs of age	CANHEART HTN2 Hypertension Canada	Screening for HTN in adult patients BP should be measured in all appropriate visits by trained staff If visit 1 office BP is high normal, annual follow up is recommended	Run semi-annual to determine screening effectiveness

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HYPERTENSION MANAGEMENT PROGRAM

Key Performance Indicators

Type of Metric	Metric	Specs	Alignment	Notes	Run suggestions
Clinical Process	9. % of pts. with HTN who are **overdue for BP**	Numerator: a) Pts. with HTN and DM and >=18 yrs of age where last BP value >=130/80 **and** date >2mo ago, b) Pts. with HTN and DM and >=18 yrs of age where last BP value <130/80 **and** date >6mo ago, c) Pts. with HTN without DM and >=18 yrs of age where last BP value >=140/90 **and** date >2mo ago, d) Pts. with HTN without DM and >=18 yrs of age where last BP value <140/90 **and** date >6mo ago Denominator: all pts. >=18 yrs of age with HTN	Hypertension Canada	Hypertensive patients actively modifying health behaviours should be followed-up at 3-6 month intervals. Shorter intervals (every 1-2 months) are needed for patients with higher BPs. Patients on anti-hypertensive drug treatment should be seen monthly or every 2 months, until readings on 2 consecutive visits are below target. When target BP has been reached, patients should be seen at 3-6 month intervals. Numerators a) and c) pull uncontrolled pt. counts, while b) and d) pull controlled pt. counts. The total of all these counts reflects overdue BP readings across HTN pts	Run quarterly to see improvement trends
Patient Management	10. Patients with overdue BP	Patients with HTN **and** overdue a) Pts. with HTN and DM and >=18 yrs of age where last BP value >=130/80 **and** date >2mo ago, b) Pts. with HTN and DM and >=18 yrs of age where last BP value <130/80 **and** date >6mo ago, c) Pts. with HTN and >=18 yrs of age without DM where last BP value >=140/90 **and** date >2mo ago, d) Pts. with HTN and >=18 yrs of age without DM where last BP value <140/90 **and** date >6mo ago	Hypertension Canada	Include sufficient identity elements to action this listing: chart#, pt. name, phone number Include additional information to help prioritize pts. from the generated listing: last BP value, age/DOB, dx of HTN/DM/Elevated BP. Captures both pts. with HTN (a-d) as well as those who may have elevated BP, and those without BP generally in past year (e).	Run regularly for action (e.g. monthly)

		Patients without HTN and overdue e) pts. >=18 yrs of age without HTN **and** BP NULL or BP date >12mo			
Type of Metric	**Metric**	**Specs**	**Alignment**	**Notes**	**Run suggestions**
Clinical Outcomes	11. % of pts. with HTN who are controlled	Numerator: a) Pts. with HTN and DM and >=18 yrs of age where last BP value <130/80 b) Pts. with HTN and >=18 yrs of age without DM where last BP value <140/90 Denominator: Pts. with HTN >=18 yrs of age	CANHEART HTN4A Hypertension Canada	Outcome: Control rates	Run quarterly to see improvement trends and measure to organizational goals Global target to increase control rates by 25% by 2025
Clinical Outcomes	12. % of pts. with HTN and DM with A1C/ACR within range	Numerator: a) Pts. with HTN and DM and >=18 yrs of age and last A1C <= 0.07 (7%) b) Pts. with HTN and DM and >=18 yrs of age and last ACR <2.0 Denominator: Pts. with HTN and DM and >=18 yrs of age	Diabetes Canada	Outcome: Control rates	Run quarterly to see improvement trends
Clinical Process	13. % of pts. with HTN and DM with overdue A1C/ACR labs	Numerator: a) Pts. with HTN and DM and >=18 yrs of age with ACR NULL or >12mo ago b) Pts. with HTN and DM and >=18 yrs of age with A1C NULL or >6mo ago Denominator: Pts. with HTN and DM and >=18yrs of age	Hypertension Canada	A1C should be measured at least every 3 months when glycemic targets are not being met and when diabetes therapy is being adjusted or changed. Testing at 6-month intervals may be considered in situations where glycemic targets are consistently achieved, test eGFR and ACR yearly, or more if abnormal	Run quarterly to see improvement trends and measure to organizational goals, provincial benchmarks

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Type of Metric	Metric	Specs	Alignment	Notes	Run suggestions
Clinical Outcomes	14. % of pts. with HTN whose last lipid testing was in range	Numerator: a) Pts. with HTN and >=18 yrs of age and last LDL <=2.0 b) Pts. with HTN and >=18 yrs of age and last TC/HDL <4.0 Denominator: Pts. with HTN and >= 18 yrs of age	Canadian Cardiovascular Society		Run quarterly to improvement trends (more in range)
Clinical Process	15. % of pts. with HTN and overdue lipid testing	Numerator: a) Pts. with HTN and >=18 yrs of age with TC/HCLNULL or >12 mo ago b) Pts. with HTN and >=18 yrs of age with HDL NULL or > 12mo ago c) Pts. with HTN and >=18 yrs of age with LDL NULL or >12 mo ago Denominator: Pts. with HTN and >=18 yrs of age	Hypertension Canada		Run quarterly to see improvement trends (less overdue)
Patient Management	16. Patients with HTN and overdue lipid testing	a) Pts. with HTN and >=18 yrs of age with TC/HDL NULL or >12 mo ago b) Pts. with HTN and >=18 yrs of age with HDL NULL or > 12mo ago c) Pts. with HTN and >=18 yrs of age with LDL NULL or >12 mo ago	Hypertension Canada	Include sufficient identity elements to action this listing: chart#, pt. name, phone number Include additional information to help prioritize pts.: last BP value, age/DOB, dx of DM	Run regularly for action (e.g. monthly)

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Type of Metric	Metric	Specs	Alignment	Notes	Run suggestions
Clinical Process	17. % and # of pts. with HTN with a Lifestyle Goal	Lifestyle goal % • Numerator: Pts. with HTN and >= 18 yrs of age where lifestyle goal is not NULL • Denominator: Pts. with HTN and >=18 yrs of age Lifestyle goal #s, Count of pts. by goal a) Healthy Weight b) Physical Activity (increased) c) Diet/Nutrition – DASH d) Diet/Nutrition – sodium reduction e) Smoking Cessation f) Alcohol reduction g) Stress Management	Hypertension Canada	Shows volume of patients who have selected goals and what they are. This saturation helps identify support/resource needs (e.g. large clusters with the same goal may indicate value in group sessions, or where an external resource would be helpful to address a gap in organizational resources)	Run quarterly to see improvement trends, determine effectiveness of motivational interviewing/goal setting
Clinical Process	18. % of pts. with HTN and Lifestyle Goal **importance** by range	Numerator: pts. with HTN >= 18yrs of age and lifestyle goal importance a) 1-3 b) 4-6 c) 7-10 Denominator: pts. with HTN >=18 yrs of age and lifestyle goal is not NULL	Transtheorectical model of change	Goal importance and confidence measures are key to making and sustaining change in alignment with the transtheorectical model of change/stages of change	Quarterly

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Type of Metric	Metric	Specs	Alignment	Notes	Run suggestions
Clinical Process	19. % of pts. with HTN and Lifestyle Goal **confidence** by range	Numerator: pts. with HTN >= 18yrs of age and lifestyle goal confidence a) 1-3 b) 4-6 c) 7-10 Denominator: pts. with HTN >=18 yrs of age and lifestyle goal is not NULL	Transtheorectical model of change	Goal importance and confidence measures are key to making and sustaining change in alignment with the transtheorectical model of change/stages of change	Quarterly
Patient Management	20. Pts. with HTN **without** a defined lifestyle goal	Pts. with HTN and >= 18 yrs of age where lifestyle goal is NULL	Hypertension Canada	Include sufficient identity elements to action this listing: chart#, pt. name, phone number Include additional information to help prioritize pts.: last BP value and date, last visit date, age/DOB, dx of DM	Run regularly for action (e.g. when setting group sessions)
Clinical Process	21. % of pts. with HTN taking >=1 antihypertension medication	Numerator: pts. with HTN >=18 yrs of age with >=1 antihypertension medication currently prescribed Denominator: pts with HTN >=18 yrs of age NOTE: additional numerator option, consider adding uncontrolled status criteria (e.g. last BP >=140/90 or >=130/80 for pts. with DM) to look at relationship between status and prescriptions	Hypertension Canada CANHEART HTN3A	Consider your organizations data system/format when creating this dataset (e.g. classifications or specific drugs, generic/active ingredient vs. brand) • Diuretics • Beta Blockers • ACE Inhibitors • ARBs • Calcium Channel Blockers • Other (including Direct Renin Inhibitors)	Quarterly

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Type of Metric	Metric	Specs	Alignment	Notes	Run suggestions
Patient Management	22. Patient report of missed medications	Pts with HTN >=18 yrs of age and 'missed medications' value >0	Hypertension Canada	Include sufficient identity elements to action this listing: chart#, pt. name, phone number Include additional information to help prioritize pts.: last BP value and date, last visit date, age/DOB, dx of DM	Quarterly
Clinical Process	23. Mean number of antihypertensive medications taken by pts. with HTN	Numerator: mean number of antihypertensive medications for pts. with HTN >=18 yrs of age (total count of medications / total count of pts. with medications) Denominator: pts. with HTN >=18 yrs of age with >=1 antihypertension medication currently prescribed	Hypertension Canada CANHEART HTN3B		Quarterly

** When considering how to search for diagnosis, use your organization's approach to documenting; this information could be in the 'problem list' and coded consistently, could be 'free text' in the SOAP notes and take many forms including "HTN", "hypertension", "elevated BP" or "elevated blood pressure" and coding could include 401 [ICD-9], 402 [ICD-9], 403 [ICD-9], 404 [ICD-9], 405 [ICD-9], I10 [ICD-10], I12 [ICD-10], D3-02000 [SNOMED CT], and D3-02100 [SNOMED CT], while it should also exclude PULMONARY HYPERTENSION, PULMONARY HTN, WHITECOAT HYPERTENSION and WHITECOAT HTN.

General Considerations:

a) Will flowsheets/custom forms be used alone or in conjunction with routine EMR charting, this will help identify where the most recent data will be, and where KPI should be sourced from.
b) Include criteria to isolate active patients (e.g. exclude deceased, inactive patients) to ensure accurate reporting
c) Consider how to group information; such as by provider, by location, etc. to better engage team members, identify and address gaps

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