Addressing Demographic Disparities in Hypertension Management

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Introduction

- Hypertension
  - ~50% prevalence in US adults
  - ~20% of HTN patients well controlled (BP < 130/80)
  - Significant impact on morbidity and mortality
- HTN protocol:
  - Medication management algorithm
  - Averaging BP for out-of-range patients
  - Red cards for close follow up

Project Aims

- Aim: quantify the impact of a centralized hypertension management protocol on quality measures associated with HTN management
- Quality measures
  - Repeat BP measurement
  - Medication adjustment
  - Lifestyle recommendations
  - Close follow-up
  - Listing HTN diagnosis in EMR
- Review patient encounters prior to protocol implementation, sorted via demographic data, to assess if disparities existed prior to the protocol, and if they improved post implementation

Methods

- Randomized chart review
- Data source: all FMC encounters over a 2-year period with reported BP >140/90
- Encounters stratified by ethnic group and age, with a goal of 50 encounters per category
- List of encounters generated and every 3rd, 4th, etc encounter reviewed
- Data extracted pre- and post-intervention

Pre-intervention results: ethnicity

	Was HTN (or elevated BP) listed on the problem list for the visit? (1=yes, 2=no)			
Race (1=Black or African American, 2=White, 3=Hispanic, 4=Asian, 5=Other)	1	2	Grand Total	
1	50	101	151	0.331125828
2	27	92	119	0.226890756
3	1		1	1
5		1	1	0
(blank)	1		1	1
Grand Total	79	194	273	0.289377289

- Black patients: 33.1% of encounters had HTN on problem list
- White patients: 22.7% of encounters had HTN on problem list
- Average 29%

Pre-intervention results: ethnicity

	Were lifestyle recommendations made? (1=yes, 2=no)			
Race (1=Black or African American, 2=White, 3=Hispanic, 4=Asian, 5=Other)	1	2	Grand Total	
1	60	90	151	0.397350993
2	34	85	119	0.285714286
3		1	1	0
5		1	1	0
(blank)	1		1	1
Grand Total	95	177	273	0.347985348

- Black patients: lifestyle recs made in 39.7% of patient encounters
- White patients: recs made in 28.5% of encounters
- Average 34.7%

Pre-intervention results: age

	Was HTN (or elevated BP) listed on the problem list for the visit? (1=yes, 2=no)			
	1	2	Grand Total	
Black ≥65	12	40	52	0.230769231
Black 18-45	23	26	49	0.469387755
Black 45-65	15	35	50	0.3
White ≥65	5	20	25	0.2
White 18-45	17	52	69	0.246376812
White 45-65	5	20	25	0.2
Grand Total	79	194	273	0.289377289

- Black 18-45: HTN listed in 47% of encounters
- Black >65: HTN listed in 23% of encounters

Pre-intervention results: age

	Was a repeat BP taken? (1=yes, 2=no)			
	1	2	Grand Total	
Black ≥65	29	23	52	0.557692308
Black 18-45	18	31	49	0.367346939
Black 45-65	19	31	50	0.38
White ≥65	10	15	25	0.4
White 18-45	35	34	69	0.507246377
White 45-65	11	14	25	0.44
Grand Total	124	149	273	0.454212454

- Black > 65: BP repeated in 55.7% of encounters
- White > 65: BP repeated in 40% of encounters
- Black 18-45: repeat in 36.7% of encounters
- White 18-45: repeat in 50.7% of encounters

Post-intervention results: ethnicity

	Was HTN (or elevated BP) listed on the problem list for the visit? (1=yes, 2=no)			
Race (1=Black or African American, 2=White, 3=Asian, 4=Other)	1	2	Grand Total	
1	551	74	625	0.8816
2	79	18	97	0.81443299
3	1		1	1
4	19	7	26	0.730769231
Grand Total	650	99	749	0.867823765

- Significant improvement in all categories
- Disparity still present but decreased

Post-intervention results: ethnicity

	Were lifestyle recommendations made? (1=yes, 2=no)			
Race (1=Black or African American, 2=White, 3=Asian, 4=Other)	1	2	Grand Total	
1	260	366	626	0.415335463
2	38	59	97	0.391752577
3		1	1	0
4	13	13	26	0.5
Grand Total	311	439	750	0.414666667

- Minimal overall progress, but again disparity decreased

Discussion

- Takeaways
  - Disparities in quality of care existed prior to protocol implementation
  - Black patients may have received higher quality care than White patients
  - Both age and ethnicity possible vectors for bias in care delivery
  - Disparities decreased with protocol use

Future Directions

- The use of treatment algorithms in routine management of common problems may offset systemic or individual bias in quality of care delivered
- Specifics of such algorithms should be based on latest medical evidence
- Requires buy-in from all clinic staff for proper protocol adherence

References

- Fryar CD, Kit B, Carroll MD, Afful J. Hypertension Prevalence, Awareness, Treatment, and Control Among Adults Age 18 and Older: United States, August 2021-August 2023. NCHS Data Brief. 2024 Oct;(511):CS354233. PMID: 40085792.
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