A Pharmacist-led Ambulatory Care Cardio-Metabolic Clinic Becomes Virtual: Evaluating the Impact of COVID-19 and TeleHealth on Services

CSHP 2020 Conference October 20-25, 2020

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Background

- The involvement of clinical pharmacists in chronic disease management such as type 2 diabetes mellitus (T2DM) have repeatedly shown improvement in the quadruple aim of healthcare (care, health, cost, and meaning in work).
- The Cardio-Metabolic Program at Desert Oasis Healthcare (DOHC) incorporates interdisciplinary chronic disease management of uncontrolled diabetes (HgA1C >8.9%) to mitigate emergency room or hospital utilization for hypoglycemia or hyperglycemia and disease progression.
- Among cases of COVID-19, T2DM is one of the most common underlying health conditions (30%) that predispose patients at higher risk for hospitalization and poorer outcomes.

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Background Cont.

- During March of 2020, DOHC re-engineered the delivery of care from in-person visits to virtual visits through various HIPAA compliant video linked telephonic platforms.
- DOHC is currently tracking clinical and non-clinical outcomes to evaluate the quality of this transition to TeleHealth services.

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Purpose

- To evaluate the impact of TeleHealth services performed with Lifesize, the telemedicine platform, on clinical outcomes, patient engagement and satisfaction for members managed in a virtual Cardio-Metabolic program.

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Methodology

Data Source:

The electronic health record Nextgen Version 5.8.274 was queried to identify patients from the Cardio-Metabolic Clinic and to establish a registry database defined by the time frame of 6 months pre- and 6 months post- March 1, 2020.

Population:

300 patients with all clinical values (Results) in both pre and post periods were randomly selected and evaluated.

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Methodology Cont

Study Design

- A single-center, observational study
- Primary outcome: Clinical markers – Hg A_1C, lipid panel, blood pressure
- Secondary outcome: Number of hospital utilizations, cost-savings in prevention of utilizations, and medication adherence.
- Averages for each endpoint were calculated for each patient.
- All outcomes were compared between before and after the integration of virtual visits in the same patient population.

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Methodology Cont

Study Design Cont.

- Satisfaction survey was sent to DOHC members with text message service. Survey consists of 3 questions on a 1-5 scale with 5 being very satisfied.
  1. How satisfied were you with your virtual visit today?
  2. Did the provider answer all your questions during today virtual visit?
  3. Based on your experience with a virtual visit today, how likely are you to schedule another?
- All visits were documented as either in-person, telephonic or virtual visit (VV) within DOHC.
- **Statistical Analysis**
- Adherence and clinical marker averages were compared using a paired T-test.

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Results:

Table 1: Average Clinical Markers, Utilizations, and NET Cost			
Measures	**Pre-Mean(N=300)**	**Post-Mean (N=300)**	**p-value**
Systolic Blood Pressure (mmHg)	135	133	0.06
Diastolic Blood Pressure (mmHg)	76	74	0.22
LDL (mg/dL)	78	70	< 0.005
HgA_1C (mg/dL)	8.3%	8.0%	0.002
Utilizations	1.9	1.4	0.003
Cost ($)	$4634.97	$2519.87	0.02

Table 2: Adherence Measures (Proportion of Days Covered)			
	2019	**2020**	**p-value**
Statin (N = 138)	91.0%	92.3%	0.43
DM (N = 59)	94.3%	95.5%	0.54
RAS (N = 50)	93.0%	$92.7	0.89

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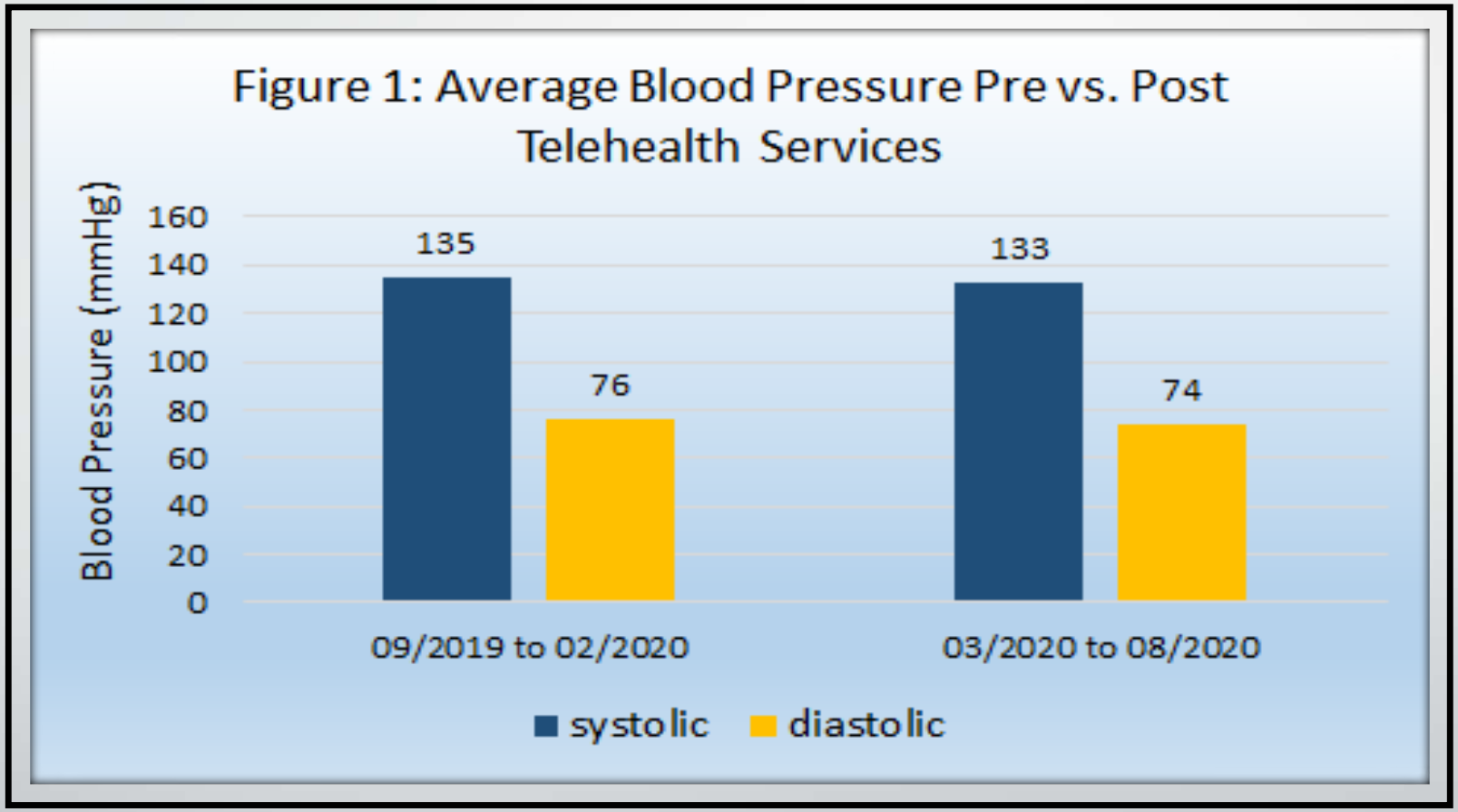
Results:



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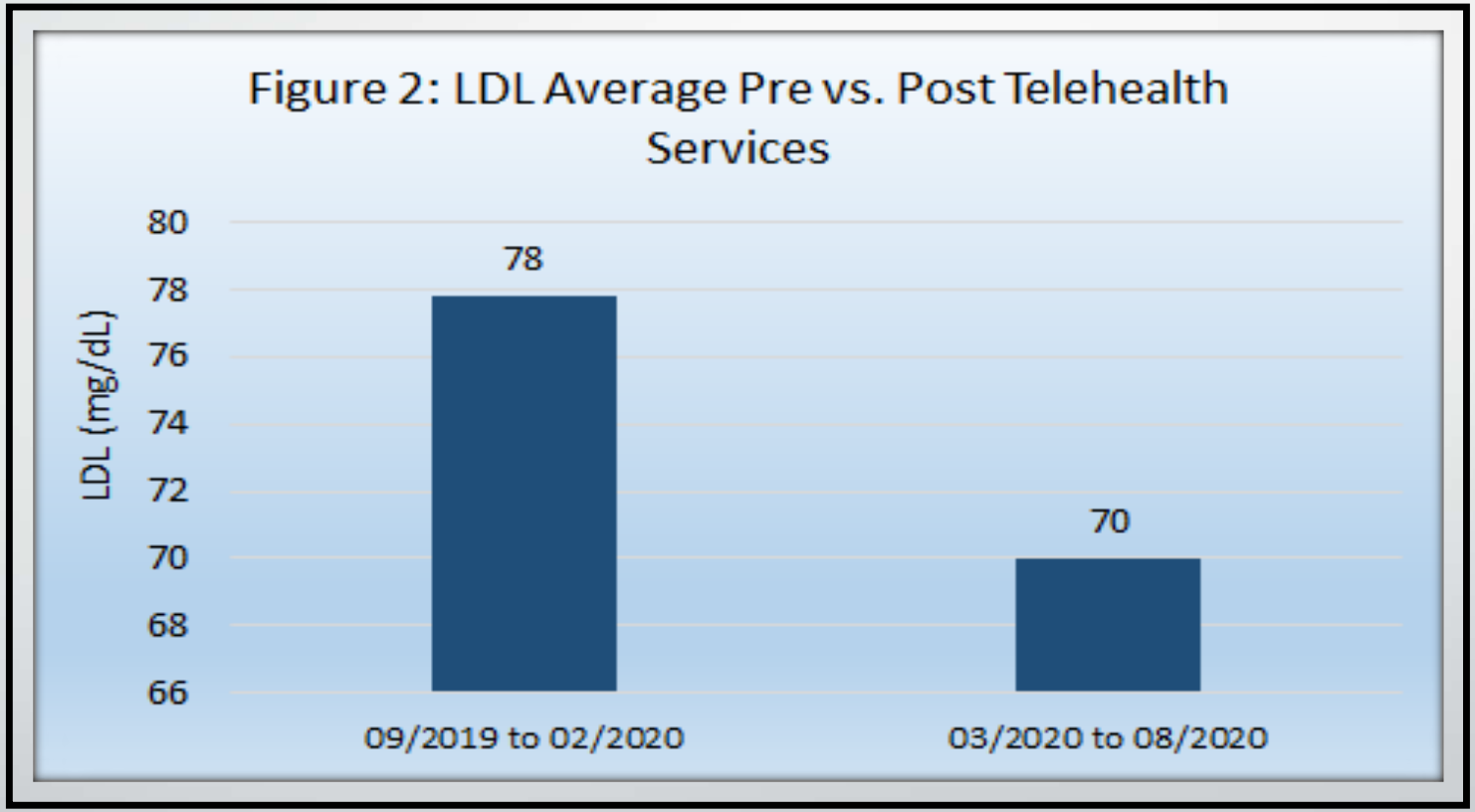

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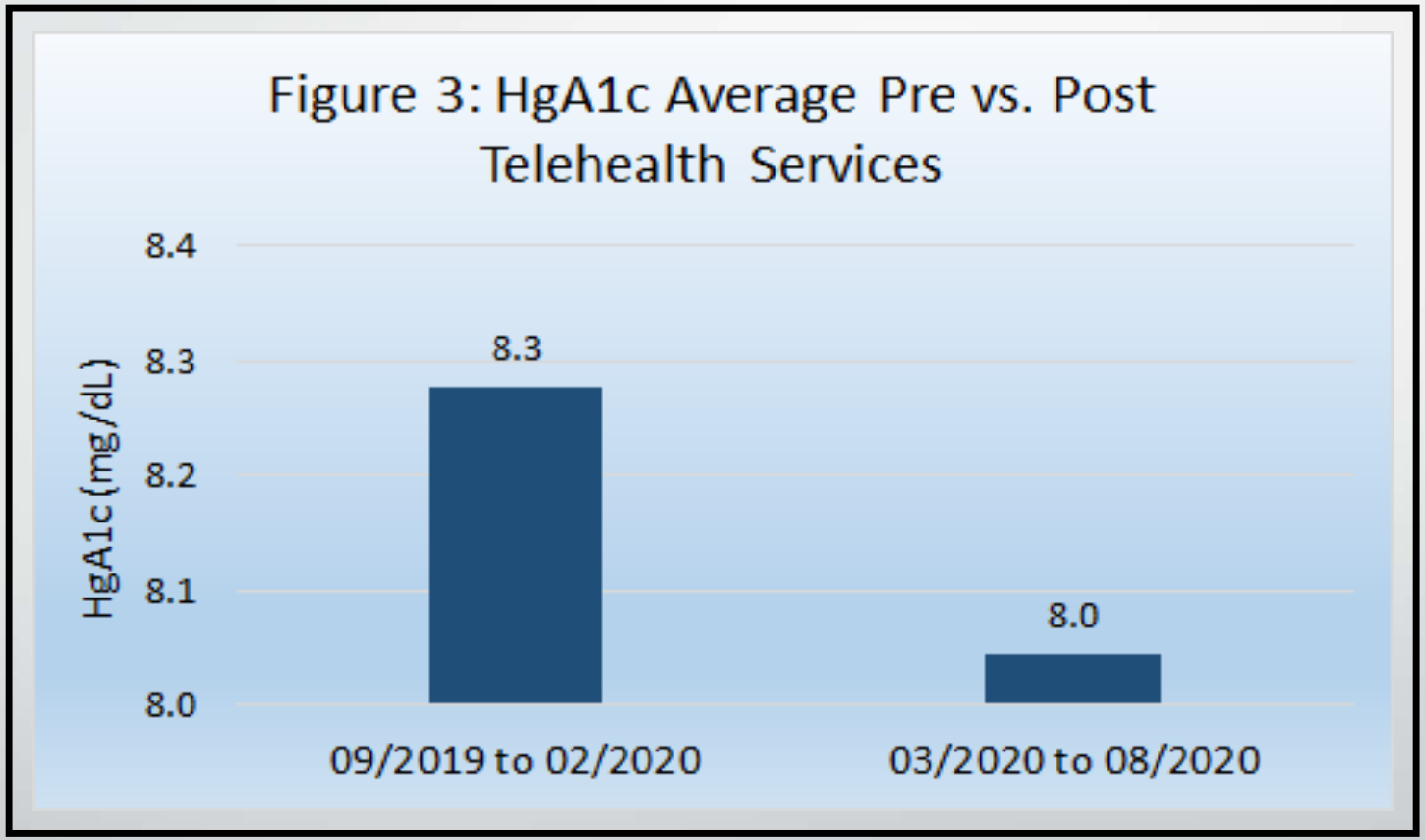

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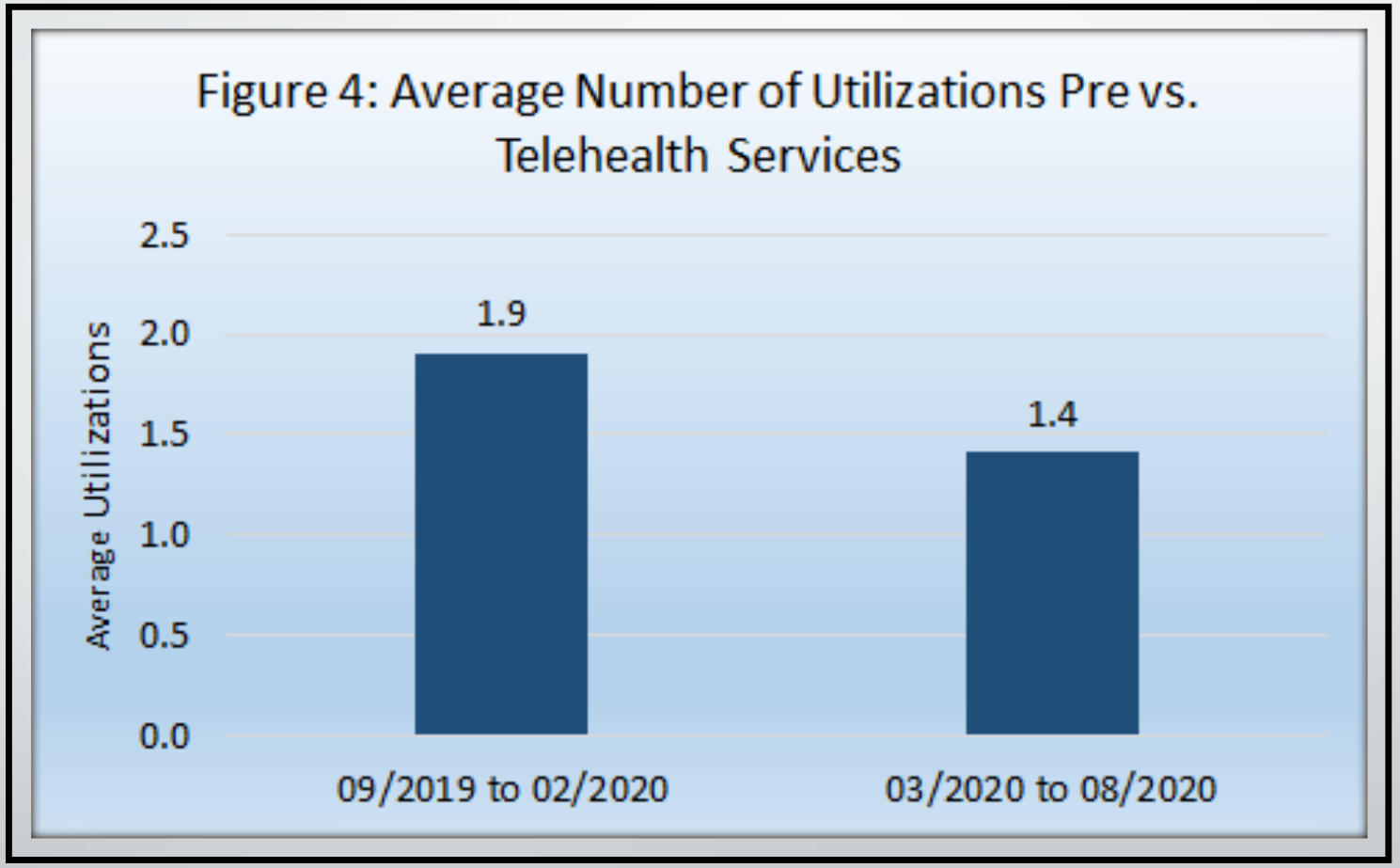

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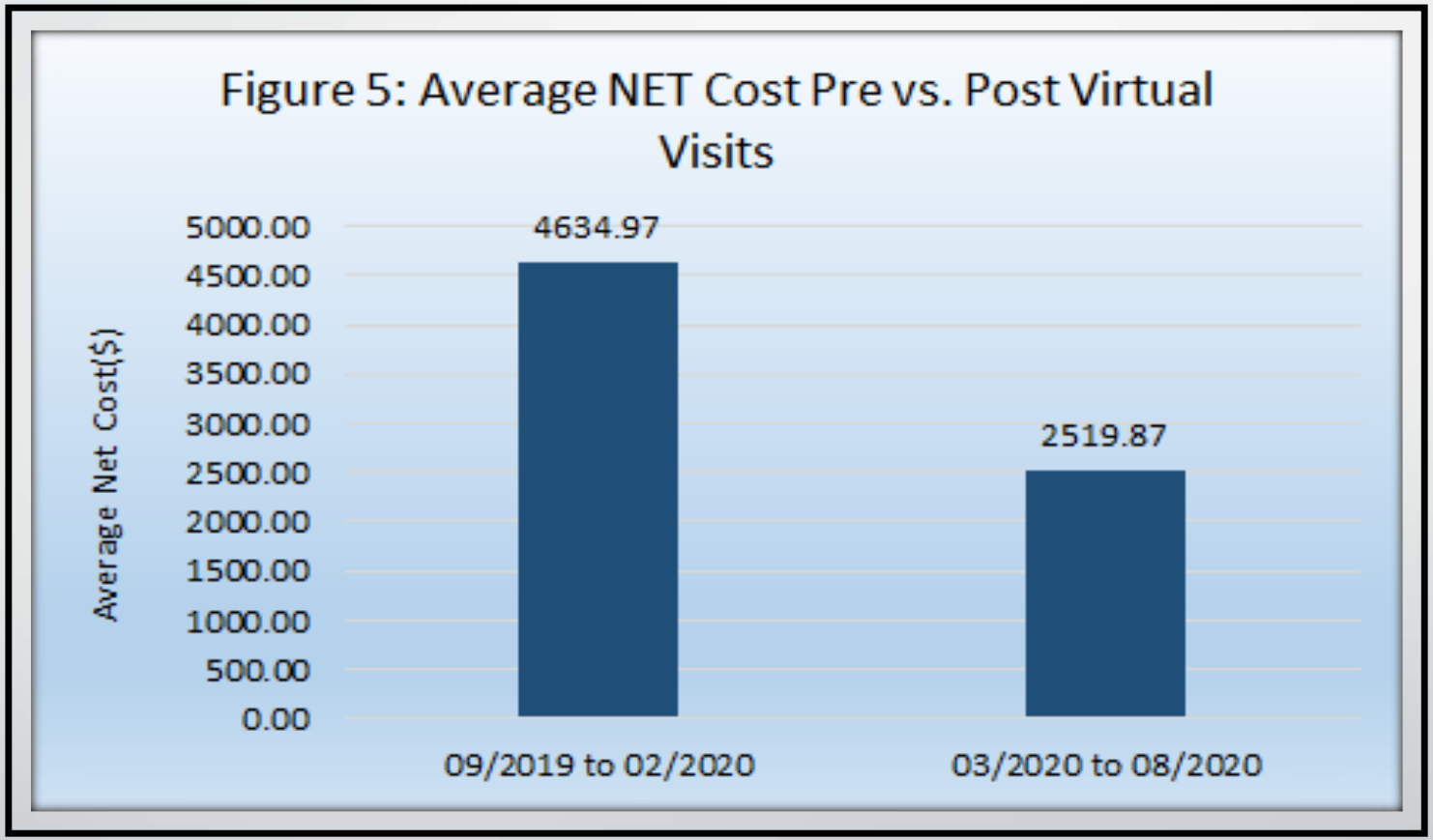

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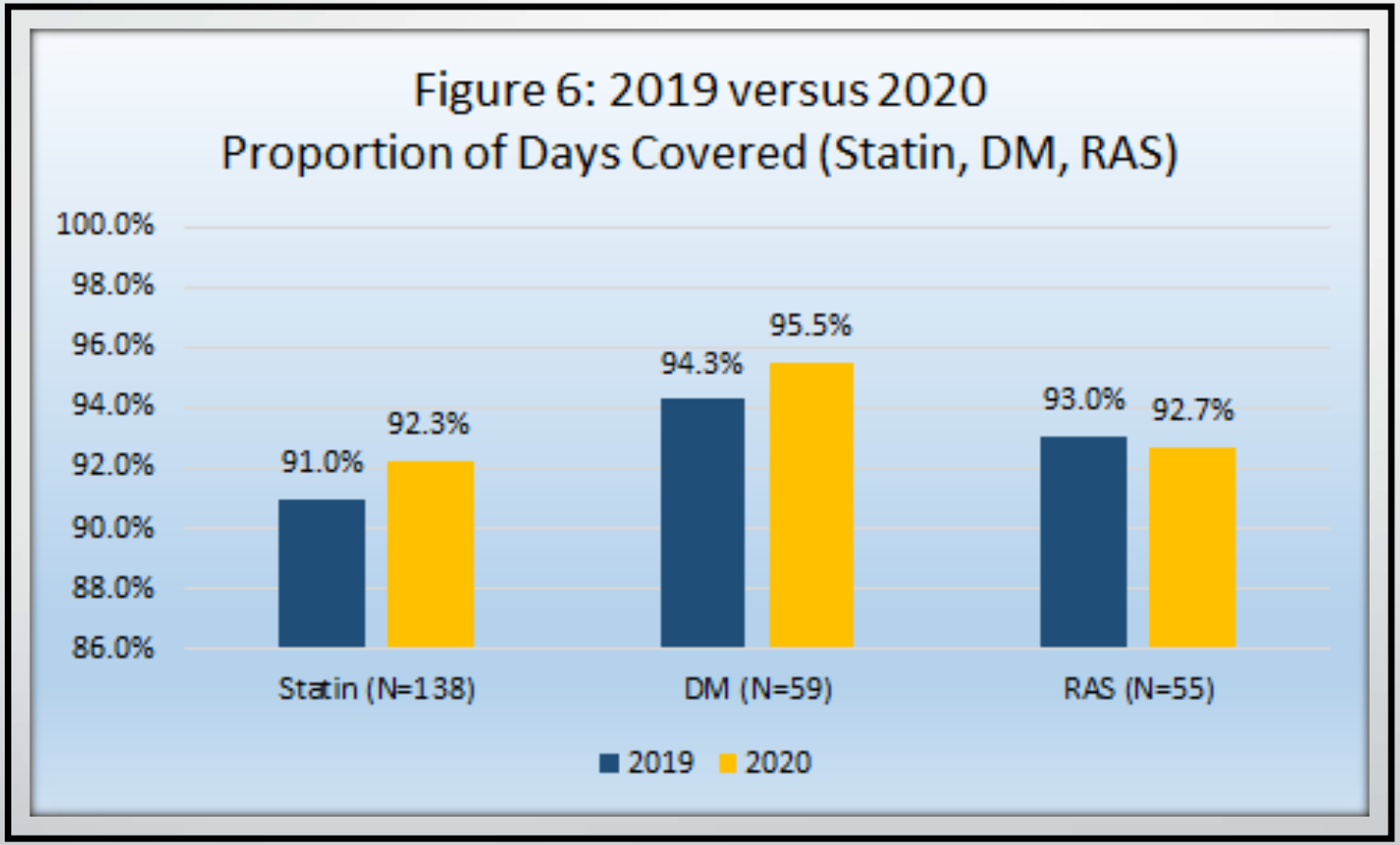

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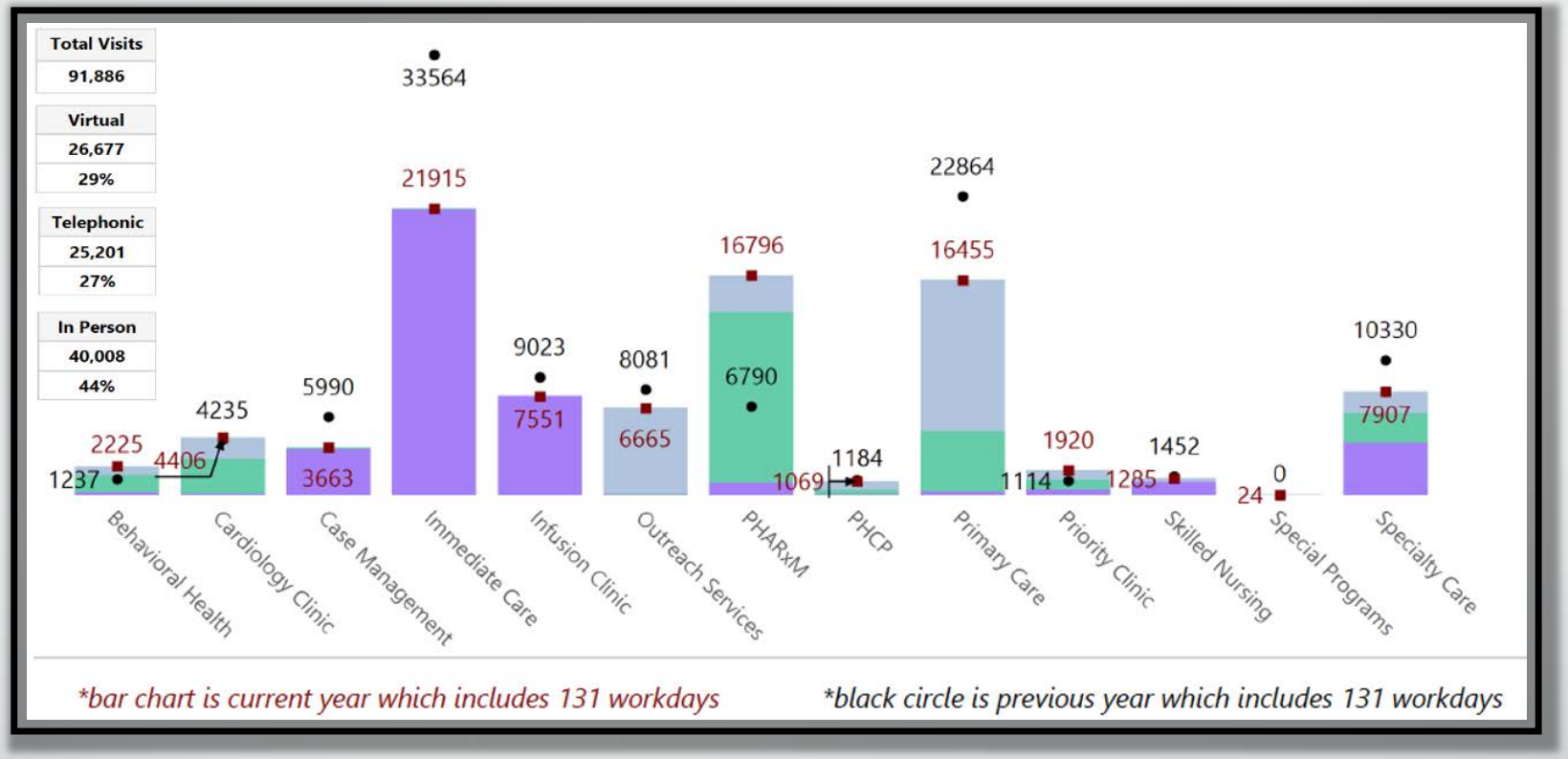

Implementation of Virtual Visit
Year over year comparison
(04/01/2020-09/30/2020 vs. 04/01/2019-09/30/2019)

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Discussion:

- During the ongoing COVID-19 pandemic, telehealth services became a necessity to provide continuum of care for patients with chronic diseases such as T2DM. DOHC implemented safe and secure virtual platforms that decreased unnecessary exposure to COVID-19.
- The expansion of telehealth services that DOHC implemented proved to be noninferior and in some metrics even better regarding the management of cardiometabolic patients.
- To control for the potential of confounders associated with decreased lab use and healthcare consumption during COVID-19, we analyzed patients that had all relevant clinical markers in pre and post period time frame.

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Discussion Cont:

- In the post period, patients had fewer clinical values due to a decrease in PCP visits.
- Another possible limitation is related to the inherent dynamic nature of enrollment into the Cardio-Metabolic Program – the highest risk patients are enrolled while the healthiest patients are discharged in terms of HgA1C control. We mitigated this variable by evaluating the same patient population in a cross over design to assess the effective differences of virtual visits.

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Discussion Cont:

- The survey response rate was 27% (3,712/13,605). The average responses on the survey were, (1)-4.8, (2)-4.9, (3)-4.8.
- The pandemic allowed us to create ways to evaluate patient satisfactory for each visit rather than just visits with primary doctors in the past.
- Lastly, DOHC is still working to generate patient engagement data for specific clinic. Overall, VV provides pharmacists with more chances to engage with patients this year who might have transportation as their barriers before.

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Conclusion:

We found that providing care through, TeleHealth service through virtual visits is a safe, cost-effective and well received strategy to optimize positive clinical outcomes and medication adherence in patients.

Access to ambulatory care pharmacy services was successfully maintained by DOHC through the structural change to TeleHealth services without affecting the quality of care Providers should continue to approach patient care with creative and safe methods that can help achieve the quadruple aim in healthcare.

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Disclosures and Acknowledgements:

- All presenters declare nothing to disclose as per policy
- Special acknowledgements to Brian Hodgkins, PharmD, FCSHP, FASHP, Lindsey Valenzuela, PharmD, APh, BCACP, and Jade Le, PharmD, BCACP

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