2022 KOOP Award Application

Name of Program: Healthy Horizons

Company: DENSO International America

Number of Employees: 11,293

Address: 24777 Denso Drive, Southfield MI 48086

Contact Person: Brandy Cooper

Telephone: 423-649-1806 (Eastern Time)

Email: brandy.cooper@na.denso.com

Vendor(s): HBD International, Behavioral Health Systems, Premise Health, Livongo (by Teledoc Health), and Hinge Health

Full Word Count: 6951

Application Preparation:
Preparation assistance from HBD International (vendor, specifically Andrew Stephenson) and Alliant (consultant, specifically Nicole Rioux) helped prepare this application and have had primary roles in providing program outcome evaluation using data supplied by Blue Cross Blue Shield of MI and other vendors (HBD International, Livongo, Hinge Health, Behavioral Health Systems, and Premise).

Executive Summary: (463 words)

DENSO is an automotive component manufacturer with approximately 11,200 employees across nine main facilities in Michigan, Tennessee, North Carolina, Arkansas, and California as well as a handful of satellite locations.

Prior to the current program (up until 2016), DENSO primarily utilized a web and mobile points-based self-directed wellness program and were achieving outcomes in line with industry averages. In 2016, 73% of employees completed annual screenings to earn a premium discount incentive, but only 41% engaged beyond screenings and less than 16% of the employee population engaged with health coaches during the year.

DENSO established goals to increase employee engagement in health education and encourage employees to take greater personal responsibility for managing their health. By doing so, they hoped to reduce medical spending, reduce disability claims, and improve employee engagement and productivity.

Piloted with approximately 2000 employees in 2017 and launched fully in 2018, DENSO adopted a program by HBD International underpinned by an onsite roaming coaching model. With 60% of the employee population being production and 40% office, it was hoped that a shift away from the previously tech and web-based program to a program that had greater visibility and was more integrated into daily plant operations would significantly increase engagement.

A premium discount incentive was retained for completion of the annual biometric screening and brief HRA, but engagement with coaches was not incentivized in order to allow for more natural engagement via a mix of small groups and individual, allowing coaches to adapt and engage based on individual readiness. Disease management programs have also been added since 2018 to provide more targeted management of chronic employees where relevant.

Key challenges during implementation were to get buy in from safety and production management to allow free-roaming health coaches and employee health coaching and engagement to occur in manufacturing plants without disrupting production or creating a safety risk. Close implementation support and a model of coaching based on opportunistic engagement at pre-shift meetings, during work breaks, entry and exit, and gaining team leader support for momentarily performing a worker's job task while they rotate off production to engage with coaches allowed the program to progressively build consistent engagement and become fully integrated into plant operations.

From 2018 – 2021 an average of 75.5% of the total eligible employee population (average eligible 2018-2021 = 11,293) are engaged by health coaches every coaching cycle. An average of 93% of the total population are engaged annually, and an average 69.5% of the total population are engaged four or more times annually. 10,846 individual employees have reported positive health behavior change and 5,209 employees have achieved a measured health risk reduction.

DENSO has successfully achieved a decreasing medical cost trend and the estimated program ROI for medical spending with claim costs through 2020 is greater than 3:1.

Section 2: Narrative Description of Program

A) Organization Description (word count: 420)

DENSO is a Japanese owned automotive component manufacturer operating in the United States since 1966. After establishing their first local manufacturing facility in Battle Creek, MI in 1984 the company now consists of a group of fully and partially owned affiliates throughout North America. Considering its core fully owned and operated affiliates in the United States, DENSO currently manages nine main facilities and 11,180 employees in Michigan (3,584 employees), Tennessee (5,690), North Carolina (890), Arkansas (474), and California (542).

Until approximately a decade ago, most of the local subsidiaries operated autonomously and reported independently back to Japan. Merging these local affiliates and centralizing management, benefits, and aligning their individual culture and practices was a significant challenge, but it paved the way for implementing a more consolidated population health management strategy.

DENSO has three onsite or near-site clinics providing primary care medical services, nurses, and in some locations a pharmacy and physical therapy. These facilities are in Battle Creek, MI (servicing plants with 2,460 employees), Maryville, TN (servicing plants with 4,194 employees), and Athens, TN (servicing plants with 1,414 employees).

In 2018 along with the launch of the Healthy Horizons onsite program DENSO also increased Standard and Preferred medical premiums by 3% for two of the plan options and increased Standard premiums by 3% only for the HDHP plan option. No other major plan changes occurred during the program period other than the addition of some disease management programs. Livongo diabetes management was implemented in March, 2020, and Hinge Health chronic pain and rehab program was implemented in March, 2021.

As the program targeted, and was inclusive of the total employee population, the number of eligible participants varies monthly with the company census. During the program period Jan 2018- Dec 2021, the eligible population ranged from a low in 2018 of 10,493 employees up to a high of 12,469 employees in 2020. A total of 16,591 indivduals have been engaged by coaches between 2018-2021, but for general purposes, we refer to DENSO's eligible population as the average monthly eligible population during the program period, which is 11,293. All cohort health data presented in this report are from a cohort of employees who were present and for whom we have screening data in 2018 and 2021 (5,398 biometric screening cohort participants and 6,725 HRA cohort participants representing 48.3% and 60.2% of the current total eligible employee population respectively).

DENSO's current employee population (11,180) is 72% male and 28% female. The program targets all employees but does not include spouses or dependents.

B) **Health Improvement Efforts and Strategy** (word count: 798)

1. **Organization's health and well-being goals:**
   The primary business goal is to control medical spending. The organization also wants to show employees that they care about their wellbeing, and it is hoped that other business benefits such as decreased turnover, reduced absences, improved employee engagement and improved productivity are also achieved, although these items were not specifically measured as baseline data was not available. Therefore, the primary measure of success has been to monitor sustained program engagement and medical spending trends.

2. **How did the organization develop these goals?**
   Cost management strategies were primarily developed by analyzing medical and prescription claim utilization and spend. It was determined that conditions driving costs were often lifestyle related, such as obesity, hypertension, diabetes, and orthopedic problems.

3. **Scientific principles**
   Frequency of contact, stage or behavioral readiness, making engagement easy, and principles from motivational interviewing were critical principles driving the development of this program's methodology.

   One of the biggest challenges for health promotion programs is getting employees to engage. According to industry reports by Willis Towers Watson (2016) and Price Waterhouse Cooper (2020), engagement in health coaching remains pretty stagnant; somewhere between 12-17% of an average work population. By integrating coaching presence and contact into normal workflow it made it easier for all employees to engage and removed the proactive "opt-in" barrier that burdens most coaching initiatives. While coach interactions remained voluntary (were not incentivized), we discovered that employees across the population were mostly happy to engage with health coaches in the workplace and it allowed contact and health education with people at far earlier stages of behavioral readiness who wouldn't otherwise participate in a traditional "opt-in" coaching model.

   With broad individual level contact, coaches could assess individual's needs, interests, and stage of readiness, and adapt information to ensure relevance and personal involvement in goal setting and action planning.

   Memory degradation theory and learning theories related to spaced learning and repetition were key considerations in determining frequency of contact. The program was initially structured in 2018 with the goal for coach contact approximately every 4-6 weeks. This is based on memory degradation theory and the assumption that if

frequency of contact was too low, subsequent points of contact wouldn't be progressive or effectively reinforce previous contact to influence progressive education and sustainable action.

Due to program budget restraints leading into 2020, the frequency of contact for coaching cycles was reduced, spacing average points of contact out to 8-10 weeks. We did not observe a significant drop in outcomes, and we theorize that this is because the program routine and coach relationships were established in the first two years under higher frequency of contact, allowing lower frequency of contact in subsequent years to still be progressive. An observation related to this theory is the lower outcomes so far observed at the North Carolina locations, which were only added to the program (through acquisition) in 2020, meaning they started with, and have only ever had, the model with a lower frequency of contact. Engagement rates at the North Carolina locations remain lower than for the legacy sites (see Table 3 below). Although, this may not only be a function of the revised model, one cannot understate the impact that the pandemic had in 2020 in disrupting the initial launch of the program in those locations. The lag in engagement in that group may be more related to the disrupted launch and initial restrictions in the coach's abilities to engage with employees in the workplace. This is discussed a little further in the engagement section below.

4. **What is the organization doing to achieve its health and well-being goals?**

a) Individual-level efforts

- Promote and educate employees on the importance of creating and maintaining a PCP relationship and incentivizing annual physicals / wellness checkups.
- Provide educational materials, tools and support through interaction with onsite health coaches, access to an online wellness portal, and materials displayed in the workplace.
- Provide access to Benefits Advocates who can help employees understand and utilize their benefits.
- Offer lower medical premiums as an incentive for participating in annual health assessment and biometric screenings.

b) Organization-level efforts

- Provide year-around promotion and education on health benefit offerings through a multi-channel communication approach.
- Management has been educated about the Healthy Horizons program and senior leaders encourage managers within the plants to work with health coaches and allow or provide access to coaching within their workflow.

- Conduct local activities and community-based events to promote engagement.
- Allocate funds in the annual budget (per employee) to support health initiatives and ongoing marketing of the wellness program.
- Coordinate with the three onsite health centers to support integration with the wellness program.
- Encourage vendor cooperation and cross referrals between health coaches, onsite health centers, EAP and disease management programs to unite all initiatives under the Healthy Horizons program banner.

Section 3: Evaluation Methodology and Results (word count:3980)

The basic program structure consists of a series of annual educational coaching cycles. In 2018 and 2019, there were eight, six-week coaching cycles. In 2020 and 2021, the number of cycles was reduced to 5, ten-week cycles.

In each of these coaching cycles there is a population health topic (educational timeline) being promoted to the total population via a web-portal, onsite hard copy and electronically displayed materials, as well as by onsite health coaches.

The goal for the health coaches is to try to proactively engage with all employees during each coaching cycle. While the goal is to engage or target the entire population, we know it won't always be possible to engage everyone in each cycle, so we set performance goals to engage 70-80% of the population each cycle.

Most coaching encounters occur in-person during work, but when coaches aren't able to engage with employees at work or there is additional information that a person needs, coaches will utilize phone, text, email or video calls to contact employees or send additional educational information.

The goal for coach interactions is:

- To engage individuals in a way that matches their behavioral readiness
- To explain personal risks with reference to annual biometric and HRA data
- To adapt or explain generic educational timeline content in a way that is perceived to be more relevant to the individual and their personal risks or interests
- To encourage small self-directed actions and behavioral change
- To identify employees who may qualify for disease management or other programs and to actively refer and assist those individuals with engagement and compliance with those programs

While the consistent coach presence and interactions are the core foundation of the program, the coaching touchpoints are supported and supplemented with:

- Annual biometric screenings and short Health Risk Assessment, incentivized by premium discount for annual completion (note the screenings were waived in 2020 due to challenges with the pandemic)
- Challenges – some challenges involved the total population and others were regionalized or location specific. Challenges were driven by coaches, local HR, or local employee health committees and promoted or supported by health coaches. They were not specifically incentivized, other than local participation based prize drawings
- General education and resources (e.g. recipes, exercise tips, mental health tips, topical videos etc) – via web portal, onsite print materials, onsite electronic displays, and coach handouts

- Disease management programs were also available or added during the 2018-21 program years. DM vendors utilized their normal member outreach and promotion but were also supported by active health coach promotion and referrals

Coaches utilize in-person conversation, interactive games and demonstrations, handout and educational materials, as well as ad-hoc health goal re-measurements to create varied and dynamic engagement points largely within the participants normal workflow.

A. <u>Participation:</u>

The eligible population is defined as employees on DENSO's medical plan. It did not include spouses or dependents. Actual eligibility changed month to month with the natural flow of the company census, as well as an acquisition and addition of North Carolina locations in 2020. The average eligible population 2018-2021 was 11,293.

The aim of the program is meaningful engagement. That is, not just downloading an app, registering for a program, logging in to a website once in a while or simple compliance to receive an incentive. The goal is to consistently engage employees long-term and progressively educate them about healthy lifestyle behaviors and proactive risk or condition management.

With consistent, good quality, personal, and behaviorally oriented engagement, it was anticipated that behavior change and then measurable health outcomes would follow. Therefore, measurement of participation follows this same logic, aiming to observe quantity, frequency, and quality.

Engagement is manually recorded by health coaches, individually checking each participant as engaged in our electronic system following a point of interaction or employee contact.

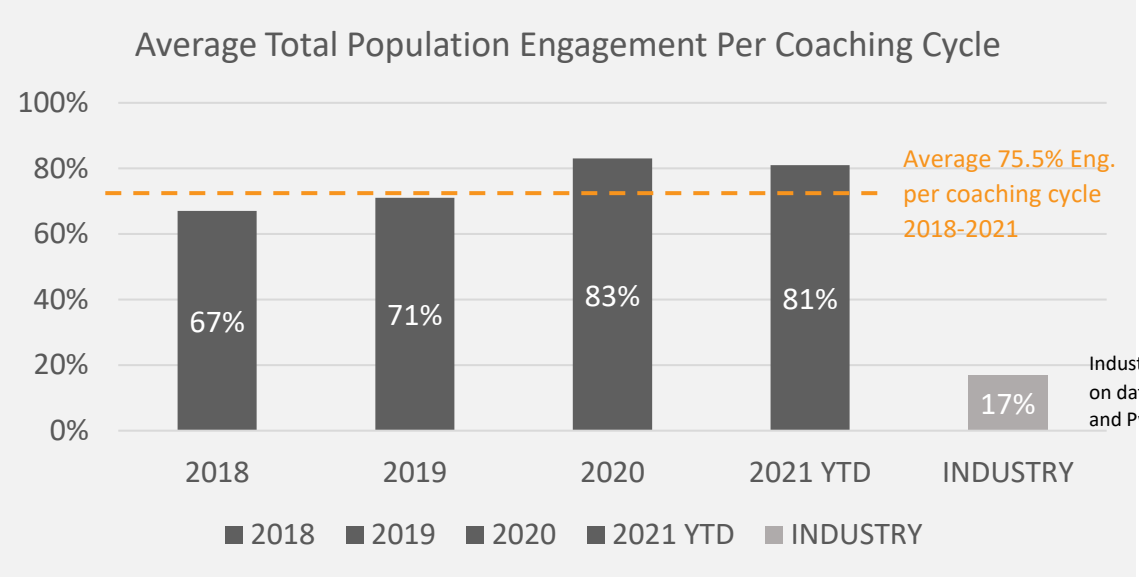
For insight into engagement levels and quality of contact, we define and record engagement in two ways (recorded according to coach discretion):

A. Engaged – Interactive (Engaged Level 1): This refers to engagement in which an employee actively participates in a conversation or education activity. It is most commonly individual in nature and specifically targeted to an individual's personal health risks or goals, relevant to their individual stage of readiness.
B. Engaged – Receiving Education (Engaged Level 2): This refers to engagement in which an employee is present when coaches deliver health information to a group or have received education via attempts at personal remote contact but who did not actively participate or engage with the health coach in individual goal setting.

Participation Part 1: Quantity

The first measure of engagement observes penetration across the eligible population. Engagement is measured as a total percentage of the eligible population engaged at either level during each coaching cycle.

Figure 1. Average percentage of the total population engaged per coaching cycle 2018-2021



Industry comparison based on data from WTW, 2016 and PwC 2019.

Figure 1. Average percentage of the total eligible population engaged by health coaches per coaching cycle 2018-2021. Average eligible population size: 11,293. Total number of individuals engaged by coaches at least once: 16,591. Rolling average engagement 75.5% of the total population.

Participation Part 2: Frequency

For engagement to be effective and to enhance the chances of behavior change it needs to meaningful engagement and consistent enough to ensure there is progressive education and active reinforcement.

As overall engagement was high, it's logical to assume that large portions of the population were engaged on a consistent basis.

Table 1 provides evidence that a significant percentage of the total population was engaged by health coaches multiple times per year, with sustained engagement improving as the program matured and employees became accustomed to the routine of seeing and interacting with coaches in the workplace.

Table 1. The percentage of the total population engaged by coaches at least 4 or more times annually.

Program Year	Number of coaching cycles within that year's program structure	% of the total eligible population engaged by coaches 4 or more times
2018	8 (6-week cycles)	48%
2019	8 (6-week cycles)	72%
2020	5 (10-week cycles)	70%
2021	5 (10-week cycles)	88%

Participation Part 3: Quality

Simple delivery of health content or basic health awareness is rarely the issue. It's engaging individuals with a high degree of perceived relevance and personalization that is most effective for improving health knowledge and initiating behavioral change.

In targeting a total population versus opt-in coaching, we encounter and aim to include individuals at all stages of behavioral readiness as opposed to only engaging with the few people who are otherwise proactive enough to seek out or opt-in to health coaching.

Naturally, the level of interest and interaction from individual employees ranges based on their perceived interest and stage of readiness. By having health coaches proactively initiate contact in the workplace and by including or routinely exposing individuals who aren't engaging with coaches one-on-one via small group or work-team meetings, we are able to ensure everyone feels welcome and included. The regular presence and contact through a mix of group and personal level interactions allows coaches to progressively educate and try to shift individuals at the early stages of readiness to a point where they become more actively engaged.

Strategically utilizing the incentive for annual completion of the HRA also provided coaches an opportunity to engage with employees at early stages of readiness one-on-one by offering to help them complete the HRA. This gave coaches an immediate snapshot of health behaviors and often opened the door to more engaged coaching with individuals who would not have opted in naturally.

Using the definitions above (page 7), Table 2 shows the average breakdown of Level 1 (interactive) versus Level 2 (education) engagement type per coaching cycle in each region over the 2018-2021 period. A higher ratio of Level 1 compared to Level 2 is considered optimal as Level 1 engagement is more likely to influence positive behavior change. But all levels of engagement are productive and progressive, with variances in stage of readiness a large determining factor in the level of coach engagement.

Table 2. Average Level of Engagement per Coaching Cycle 2018-2021

Location	Avg. Eligible Population (N)	Avg. % of population engaged per cycle	Avg. % Engaged L1 (Interactive) per cycle	Avg. % Engaged L2 (Education) per cycle
Michigan	3,727	74.3	35.0	39.3
Tennessee	5,759	78.4	49.9	28.5
Arkansas	452	74.1	42.9	31.1
California	565	77.6	41.4	36.8
*Nth. Carolina	790	59.8	28.5	31.1

**North Carolina locations were only added to the program in 2020.*

Impact of the Pandemic.

It's important to note that the primary basis of this program at implementation was onsite contact during work. The pandemic created a significant disruption to this. In the Spring of 2020 DENSO shutdown operations for approximately 6 weeks. There were reduced employee hours and staggered production for significant periods and vastly reduced coach access for much of 2020. The program continued throughout and transitioned to remote contact when onsite contact wasn't possible. But as remote contact was out of routine for many, particularly individuals at early stages of readiness, this did significantly affect the ratio of Level 1 and Level 2 engagement in 2020 and into 2021 as many more members of the eligible population now work from home (e.g. the Southfield MI location with approximately 1100 eligible employees has remained remote and had no onsite coach visits since March 2020). This disruption also coincided with the launch of the program in North Carolina which significantly slowed the initial uptake in engagement at the North Carolina locations as coaches attempted to remotely engage employees as a first-attempt at engagement without the advantage of having established face-to-face contact first as had occurred in other locations.

We have not adjusted the engagement data and have included all 2020 data within the averages presented.

Despite this major disruption in 2020 and carrying over to 2021, the program has still significantly outperformed industry standards for wellness program engagement and (as presented below) has still achieved significant positive outcomes.

Participation in Disease Management and clinical support initiatives:

The Healthy Horizons program is centered on the health coaches aiming to achieve significant population behavior change and health risk prevention. However, as with any population, there are members who have significant existing, non-modifiable, or chronic risks and conditions. DENSO has implemented several disease management (DM) programs to better assist the management of these individuals.

Disease management programs are only effective if they get chronic members to engage and be compliant. An added benefit of the health coaching structure and the ability for this program to engage members at earlier stages of readiness has enhanced the effectiveness of DENSO's DM programs (DM vendors report higher uptake in DENSO's population compared to their book of business) as coaches actively help identify and refer members into these programs as well as assisting with compliance behaviors.

Clinical support and DM programs include:

- Onsite / near site clinics (Family medicine) managed by Premise Health are located in Battle Creek, MI (servicing plants with 2,460 employees), Maryville, TN (servicing plants with 4,194 employees), and Athens, TN (servicing plants with 1,414 employees). The Battle Creek and Maryville locations also have pharmacy services, but Athens does not.
- Employee Assistance Program (EAP) provided by Behavioral Health Systems (BHS) has been in place for the whole program period 2018-2021.
- Livongo Diabetes Management (by Teledoc Health) was implemented in March 2020, eligible only to medical plan members with a diabetes diagnosis.
- Hinge Health exercise therapy for chronic pain was implemented in March 2021 for members reporting at least 12 weeks of chronic pain in knee, hips, back, neck, and shoulder

Table 3. Engagement in Clinical Support or Disease Management Programs

	2018	2019	2020	2021
Outpatient EAP utilization	18%	18.9%	17%	17.6%
Diabetes DM	NA	NA	600 (40%) enrolled from 1485 eligible	
MSK Pain DM	NA	NA	NA	606 eligible members applied, 454 (75%) engaged

BHS reports EAP usage is higher in DENSO's population than other comparable populations in their book of business.

Livongo's engagement of 40% of eligible members in DENSO's population is 10 percentage points higher than their average book of business engagement (30%) of eligible members.

Hinge Health and Premise Health did not provide comment as to whether utilization in their programs / use of the onsite clinics has increased or is higher than comparable populations.

B. Health Outcomes

Figure 2. Summary health and behavior change outcomes 2018-2021.

Figure 2 category definitions provided on page 13

Health outcomes are primarily determined by participant pre-and-post measurement. Participant behavior changes are recorded by health coaches who determine or validate changes people self-report via the regular coaching / check-in process. Measured changes to health or health behaviors are then captured by changes in pre-and-post participant HRA and biometric results. Overall changes in population health are determined using pre-and-post cohort HRA and screening results.

Primary behaviors or health biometrics measured via biometric screenings and HRA:

- Blood Pressure (high risk if systolic >139 or diastolic >89)
- Cholesterol (high risk if Total Cholesterol >240, HDL<40, or Triglycerides >150)
- Glucose (high risk if fasting glucose >99, or non-fasting glucose >199)
- BMI (high risk if BMI >29.9)
- Physical Activity, cardiovascular (high risk if <150min/week moderate, <75min/week vigorous or equivalent combination)
- Fruit and Vegetable intake (high risk if <5 combined servings daily)
- Alcohol (high risk if: F > 1 drink daily or >8 drinks weekly; M > 2 drinks daily or >15 drinks weekly)
- Tobacco use (any tobacco use within the last year)

Secondary behaviors which were assessed via HRA and used to determine behavior change or "measured change" (defined below), but not considered as "risk reductions" (defined below):

- Stress, Anxiety, or Depression (via PSS, GAD-2, PHQ-2)
- Water intake
- Sleep
- Support / social connection

Definitions:

Behavior change is self-reported by participants during coaching interactions and recorded on individual's records by the health coaches. Behavior changes are any action that people report and that coaches validate through conversation as to implementing changes based on coaching or health education to try and improve a health measurement or outcome.

Measured change is when we observe a positive shift in a measured item listed above. This can be an improvement in the HRA response or a physical biometric measure which is better than a previous baseline measure. These changes do not need to be considered full risk reductions (defined below) but are any positive improvement in the measured item. For example, if someone with a starting BMI of 35 is attempting to lose weight. They may implement actions (which would be recorded as behavior change) and lose a little weight, and their new BMI may be 32. This is still considered high risk, and is not a risk reduction, but it is a measured improvement. This is an example of what we record as a "measured change". Similarly, an individual may initially respond on a HRA that they eat only one serving of fruit and vegetables per day. On a subsequent HRA, they may respond they are now eating 3 servings of fruit and vegetables a day. This also would be a behavior change and a measured change, but not a risk reduction as they still are not meeting the low-risk score of 5 servings daily.

Risk Reduction is when a post measurement of a primary behavior or biometric measure (as defined above) is recorded in a lower risk category than the baseline measurement. Using the same BMI example as above, the participant continues to work on weight loss and manages to get their BMI to 28. This is now considered a risk reduction as they have improved their measurement to below 30, and therefore changed their BMI risk status. Risk reductions are only recorded for health or behavioral items with clearly established public health risk ranges, as noted in the list of "Primary behaviors and health items" above. The secondary behaviors are counted as behavior changes and measured changes, but not risk range reductions as clear risk definitions are not well established in the literature or by major health authorities for these secondary items.

High risk definitions are provided in the primary behaviors and health list above.

Pre-and-post cohort measured risk reduction.

Due to turnover and demographic changes in the population as a whole (knowing that the eligible population ranged from 10,493 to 12,469 and that over 16,500 individuals were engaged at least once) between 2018 and 2021, simply observing the prevalence of risks in the population pre-and-post may not accurately reflect program impact.

For this reason, we present data from a cohort of participants for whom we have full pre-and-post screening data in 2018 and 2021 to determine changes in those exposed to the full program period.

Data presented in Table 4 is cohort screening data for N=5,398 biometric screening participants and N=6,725 HRA participants with baseline data in 2018 or 2019 compared to results in the same individuals in 2021.

The change in high-risk prevalence is compared to indicative U.S. population data obtained via the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS). CDC data doesn't match the timeframe or demographics perfectly, but is a proxy for determining whether the program outcomes are better than what would have been expected in the general population.

Table 4: Cohort Pre and Post Biometric and HRA screening data 2018-2021

Item	2018-19 % of cohort at High Risk	2021 % of cohort at High Risk	Change (% points)	U.S. Population Change estimated via CDC (% points)
High Risk BP	38.24%	18.57%	-19.67	0
High Risk Lipids	44.95%	38.97%	-5.98	+0.1
High Risk Glucose	3.11%	3.53%	+0.42	No norms (ADA est. +0.6)
High Risk BMI	45.74%	48.95%	+3.21	+1 (+2.6 in MI and TN)
Low Physical Activity	42%	33%	-9	-0.3
Fruit & Vegetable	83%	79%	-4	-2.3
Low Water Intake	18%	13%	-5	No norms found
Poor Sleep	53%	51%	-2	No norms found
Poor Comm. / Support	44%	33%	-11	No norms found
Tobacco Use	21%	17%	-4	-1.5
High Alcohol	20%	17%	-3	-0.5
High Risk Stress*	Changed MHA questions			No norms found

** Mental health questions on the HRA were changed in 2021 so are not comparable.*

Biometric screening cohort N=5,398 (48.3% of the current eligible population)
Health Risk Assessment cohort N=6,725 (60.2% of the current eligible population)

Cohort screening results suggest improvements in health behaviors and measured biometric risk reductions mostly greater than would be expected in the general population.

Comorbid Risks.

Figure 2 above shows the number of individuals with at least one behavior change or health improvement, but does not account for people who have achieved multiple changes or improvements to risk. It is well established that health costs and burden follow health risks and comorbidities. Complex and chronic individuals have higher costs and poorer outcomes than those with isolated risk factors.

Using definitions similar to those used by Edington in *Zero Trends* (2009), we wanted to monitor the shift in this population's risk status considering individuals with multiple risk factors.

From this population, we have a cohort of N=5,398 participants for whom we have full biometric and HRA data in 2018 and 2021. Using 2018 as a pre measure and 2021 as a post measure, we have sorted the cohort into low, moderate, and high-risk groups based on the number of high risk items they have from a select group of 8 primary health and behavioral risks.

In *Zero Trends*, Edington presents data that suggests that without intervention, over time, most people accumulate risks as they age, and as they age and accumulate risks, their health costs increase. His data suggests that there is approximately a 2-3% migration towards high risk every 3 years without effective health promotion interventions.

His definition of low risk is someone with 0-2 risks, moderate risk is 3-4 risks, and someone with 5 or more risks is considered high risk. We used a similar concept to observe whether members of our cohort shifted towards or away from high risk, or to put it another way, using the cohort as a proxy for participants in this population, were people mostly accumulating health risks, reducing health risks, or staying the same during this 2018-2021 program period?

Table 5. Shift in Risk Status Considering Individuals with Multiple Risk Clusters

	0-2 Risks (Low Risk)	3-4 Risks (Moderate Risk)	5+ Risks (High Risk)
Proportion of cohort in 2018	24.1%	47.5%	28.4%
Proportion of cohort in 2021	31.4%	49.9%	18.7%
Change in proportion 2018-2021	+7.3	+2.4	-9.7

Table 5: 2018-2021 cohort of 5398 participants with enough screening data to assess clusters of risks across 8 defined risk areas (Blood pressure, Lipids, Glucose, BMI, Tobacco use, High risk alcohol, Low cardiovascular exercise, Low fruit and vegetable intake).

This cohort, representing 48.3% of the current eligible population, shows a significant shift away from the high-risk group towards low risk, indicating that members of the 4-year cohort have reduced comorbid risks which is likely to significantly reduce their complexity and costs.

C. Organizational and Financial Outcomes and Financial Analysis:

DENSO's primary assessment of organizational outcomes, as determined by their original goals, are high sustained engagement in the wellness program and a shift in medical cost trends.

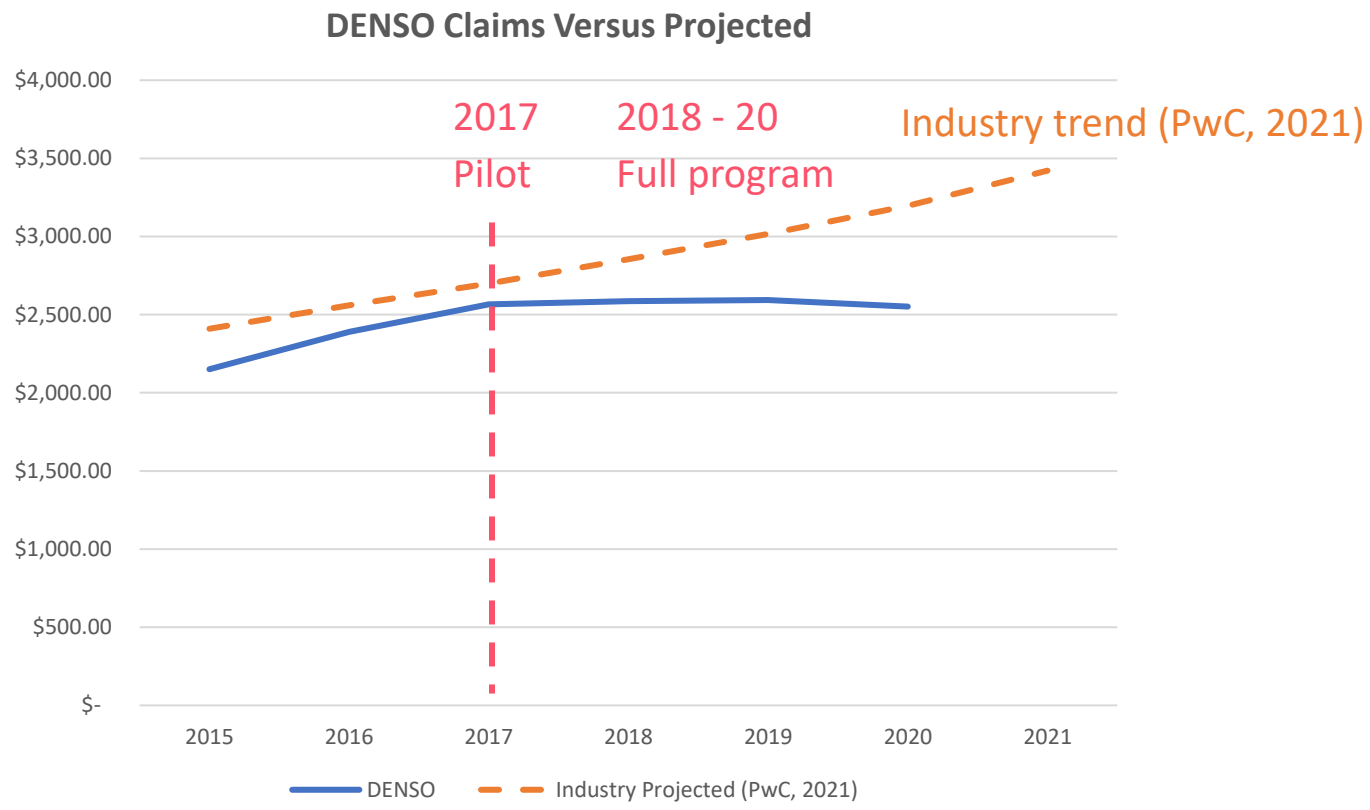
High employee engagement in the wellness program has been achieved and presented above.

For medical cost analysis, we have compared DENSO's average individual annual medical claims data provided by their plan administrator, Blue Cross Blue Shield of MI for 3 years prior to program (2014-2016) through implementation (pilot in 2017) and three full years of programming (2018-2020). At the time of submission, 2021 claim data had not been fully analyzed and added.

The highest claimants (those with annual claims more than 3 standard deviations greater than the mean, representing approximately the top 1% of claimants) have been removed as they heavily skew the data (e.g. in 2020 the top 0.9% of claimants accounted for 29% of total claims incurred). Aside from this, claims have otherwise not been filtered.

Figure 3 presents DENSO's average individual claims against the industry trend (obtained from Price Waterhouse Cooper, 2021). Prior to the program implementation DENSO's claims were lower than, but trending with the industry. Following implementation there is a clear deviation and decreasing trend compared to reported industry trends. BCBS confirms that DENSO's trends are lower than comparable populations.

Figure 3: DENSO's Average Individual Claims Compared to Industry Expectations Pre-and-Post Program Implementation



DENSO's medical ROI is estimated by comparing the total cost of the Healthy Horizons program 2018-2020 to their projected medical claim savings over the same time period.

The medical claim savings are estimated by comparing DENSO's actual claims in 2018 - 2020 to their predicted claims had they maintained their projected trend in line with the 2014-2016 claims and as experienced by the industry.

DENSO's estimated three year (2018-2020) medical ROI calculated by this method is $3.35:1.

The Healthy Horizons program ROI is expected to continue to grow year on year as the program costs remain relatively fixed, whereas the cumulative savings for health risks avoided and health risks reversed continue to grow as DENSO's medical trend continues to distance itself from the industry trend.

While difficult to measure, health risks avoided are particularly interesting, considering that this program has demonstrated a sustained ability to engage individuals at earlier stages of behavioral readiness compared to most total population programs.

While other organizational outcomes were not able to be accurately measured due to a lack of baseline data, there is anecdotal evidence reported by managers within the organization that the program has helped achieve other desired outcomes, such as improved engagement, reduced injuries, and improved productivity.

There is a significant body of research estimating the value of effective health risk reduction for improving organizational costs through reduced presenteeism, disability, workers compensation, absences and productivity to be at least 2-3 times healthcare cost savings. By conservatively using 2.5 times cost savings, DENSO estimates its total value of investment in the Healthy Horizons program through 2020 to exceed 8:1.

Section IV. Innovation and Other Important Factors (word count 685)

This program is a wonderful equalizer, as it openly aims to include all employees equally in the same manner, from workers on night shift on the factory floor right through to affiliate presidents; coaches aim to approach and engage all employees the same way. In some of DENSO's more rural locations where access to wellness services is more limited, being able to provide health education at work and to improve awareness of the resources that are available locally has helped to address some aspects of health equity. Where possible, health coaches are sourced and trained locally so that they are attuned to local culture and possess good awareness for local community health resources. Diversity amongst the health coaching team also helps to make them approachable to DENSO's diverse work population.

As health coaches are now fully integrated into plant operations, they have the ability to constantly assess the evolving needs of the population, and the educational timeline and health education content can be constantly adapted to ensure it remains relevant and addresses the most pressing health needs of the population.

This was severely tested by the COVID-19 pandemic, where coach contact had to immediately pivot from in-person to remote, and a balance for ongoing hybrid contact needed to be established. Simultaneously, the needs of the population quickly shifted away from education around traditional lifestyle behaviors towards a much heavier educational focus on mental resilience, home workspace ergonomics, and how to adapt health behaviors to account for spending more time at home and without access to normal community resources. In the early days of the pandemic education content switched to hygiene, COVID-19 facts versus fiction, recipes for eating at home, and simple home workouts. They progressed over time to provide education around mental health and the effects of isolation and encouraged employees to remain socially connected and to practice health behaviors that support good mental wellbeing.

Many organizations talk about a goal for creating a "culture of health". With the way this program has become integrated into the daily workflow of the organization, including having health coaches present at, and introducing the program at new hire orientations, employees are truly presented with a work environment that promotes a culture of health.

In conjunction with the program, DENSO, with some assistance from HBD International, have also worked progressively with food vendors of the onsite cafeterias, and onsite food and beverage vending to provide more healthy options. This progress has been slow, but significant and was initially met with pushback and skepticism from vendors. However, with coaches assisting to promote and drive demand for healthier food and beverage options, trials by vendors were often successful and has resulted in progressive improvement over time.

With the prolonged impact of pandemic fatigue and widespread reports of burnout and resignations across the country, we have recently added an innovative layer to the program to try to assist senior managers with better managing their own stress, but also to help reduce the transference of stress from leaders down to their teams. By leveraging emerging science and

understanding of neuroscience and brain chemistry, we have implemented a specific neuroscience for leadership track within the Healthy Horizons program. This program aims to help leaders better understand the human stress response, and more specifically, to better understand their own stress response and the natural tendency behaviors they may revert to when under stress. This element of the program includes leadership group education (workshops / webinars) along with optional individual brain chemistry profiling to help individuals fully understand their own natural tendencies, and to better understand how changes in health and lifestyle behaviors can help them improve their health, stress management, and performance. Beyond the individual benefits, the improved understanding of how different people respond to stress, and knowledge of natural tendency stress behaviors which can transfer stress on to others, managers can help to reduce top-down stress exerted on their teams that can then disseminate down through the organization. Initial trials and pilots for this initiative have been well received, and we will continue to expand this neuroscience for leadership program in the coming year.

Section V: Supplementary Documentation

We wanted to include some sample direct quotes / comments from senior leaders in response to their experience with the Healthy Horizons program:

"I have found the onsite health coaching valuable from both my position as president as well as personally. As president, feedback from coaches is a key input to understand the general stress and health concerns of our team. I found this particularly true during the pandemic. With this information, I have been able to adjust activity and target communication towards addressing issues."
Marty Deschenes, President, DENSO Manufacturing Athens, TN.

"My initial concern regarding the risk of having coaches in warehouse and production areas is not an issue. They are knowledgeable and respectful. Their aura hangs around my co-workers for days after each visit. My colleagues discuss changes they want to make in their lifestyles relating to nutrition, grocery lists, exercises… I'm not sure they realize the connection between their conversations with the program, but it's very valuable to an organization like ours."
Steve Karington, Safety, Health, and Environment Manager, DENSO Products and Services America (CA)

"Giving employees resources to improve health and lifestyle is critical for self-insured employers. We soon learned it's one thing to offer a good wellness program, but it's another to offer a program that truly engages the workforce. People will go through the motions to gain incentives, but simply going through the motions doesn't lead to sustainable results.

The one-on-one approach to employee wellness through the new Healthy Horizons program was completely different, and it didn't come without some reservations from our production team. HBD understood each manufacturing environment is unique and anticipated our concerns. During implementation, they took the time to meet with management and ease their concerns. The flexibility and adaptability of the model made it possible to overcome any perceived obstacles quickly.

Not only have we seen results and real change, but the program now basically manages itself. The coaches have developed relationships with line leaders meaning there's very little involvement needed from the HR staff. This program has been a breath of fresh air for our organization at a time when we needed it!"
Brandy Cooper, Regional Benefits Manager

"I love the consistent natural engagement. We had other models in the past where coaches were available by phone, but people just didn't use them like they do with this program."
Manufacturing team leader, DENSO Manufacturing Michigan.

"We worked with coaches to implement stretching in the warehouse. It's become an important aspect of our morning meetings. One unanticipated benefit I've observed is the sense of 'community' that has developed in each of the groups. That can only add benefit to their teamwork throughout the day."
Warehouse manager, DENSO Products and Services America (CA).

References:

Zero Trends: Health as a Serious Economic Strategy, D. Edington, 2009

Staying at Work report Willis Towers Watson, 2016

Medical Cost Trend: Behind the Numbers 2020, PwC Health Research Institute, 2019

Medical Cost Trend: Behind the Numbers 2022, PwC Health Research Institute, 2021