DHA
Defense Health Agency ®

Sustainability Report

2023

Sustainability Vision

We are leaders in delivering world-class health care solutions with a minimal environmental footprint to support those who serve in the defense of our country. We focus on securing a sustainable and resilient future for all.

Sustainability Mission

Enhance Military Health System readiness and resiliency by safeguarding human health and the environment through the efficient use of resources and on-going process improvement.

Year At A Glance

For the 31 Medical Treatment Facilities (MTFs) that reported sustainability metrics, the following services were provided in 2022:

382,270 Inpatient Care Discharges[2]

16,183,059 Outpatient Care Encounters[3]

15,655 Births[2]

321,707 Occupied Beds[3]

782,956 Immunizations[2]

10,268,175 Prescriptions[2]

2,429,122 Radiology Services[2]

12,425,522 Laboratory Services[1]

3,552,005 Dental Services[2]

These Services Required

3,262M kBTUs of Energy at $67M[3]

11.7K tons of Municipal Solid Waste (MSW) at $1.3M[3]

630M gallons of Water at $5.1M[3]

[1] DHA A&E MTF Portfolio Site | [2] DHA Financial Operations | [3] Practice GreenHealth

The sustainability team is proud to present our first annual report as a DHA program. This report serves as an annual snapshot of the excellent work conducted across the entire Military Health System (MHS). As the DHA Sustainability Program expands to Navy and Air Force sites, it has become clear that sustainability is already part of the operating paradigm within the MHS. Frameworks and procedures to improve energy efficiency, increase recycling, and reduce the amount of solid waste generated in DHA facilities are already in place across much of the enterprise. DHA active-duty personnel, as well as civilians and contract staff, have shown a commitment to sustainability by attending monthly virtual sustainability trainings, hosting on-site DHA Sustainability Workshops, and volunteering to participate in sustainability data gathering initiatives well ahead of required timelines.

As we move into this new phase of military health care, expect to see a more balanced perspective from the Sustainability Program. Our new Navy and Air Force facilities will help us address our shared challenges through the uniqueness and strength of their operations. This year's report is based on data submitted during our annual data call for Calendar Year 2022 (CY22). We are excited to welcome Walter Reed National Military Medical Center in this year's report.

This report provides a roll-up of data on sustainability metrics for which health care specific topics such as regulated medical waste and anesthetic gas use are included. It also covers topics of overarching concern for the federal government such as building emissions, sustainable fleets, and a climate literate workforce, as laid out in Executive Order 14057. The data and stories presented in this report demonstrate the improvements in performance and resilience that can be realized through a focus on sustainability.

From the Chief Sustainability Officer

Hello,

As the first Chief Sustainability Officer of the Defense Health Agency, I'm excited to work alongside a group of individuals who are so passionate about improving the efficiency and resilience of our operations, and tackling the challenge of climate change. Through our hard work, I'm confident that we will be able to help fulfill LTG Crosland's vision of a modern, efficient health system, based on quality not quantity. Optimizing operations and waste reduction are at the heart of the DHA Strategic Plan, and the Sustainability Program is working to execute on those priorities. I look forward to leading DHA's sustainability efforts in the coming year, to drive us toward a more sustainable future, across the entire Military Health System.

Yours in Service,

COL Pamela DiPatrizio

Sustainability Performance Metrics

DHA performs an annual data call for tracking sustainability progress and compliance. This table depicts the metrics we track and their associated Focus Areas. In early 2023, DHA MTFs completed the Practice Greenhealth (PGH) Partner for Change award application for their CY22 performance metrics. Awards received by participating MTFs are shown on page 10.

Sustainability Metrics for the 31 MTFs Reporting in CY22

Total Cost Savings

38.7M

Energy Reduction

81%
of facilities more energy-efficient than PGH median*

Water Efficiency

54%
of facilities more water-efficient than PGH median*

Single Use Device Collection and Reprocessing

38 tons
single use devices diverted from waste stream

Greenhouse Gas (GHG) EmissionReduction

38.2%
reduction in scope 1 GHG emissions associated with waste anesthetic gases

MSW Reduction

4,267 tons
diverted from municipal solid waste

HW Minimization

46 tons
diverted from hazardous waste streams

Fleet Management

43%
of DHA fleet is comprised of alternative fuel vehicles

For the DHA Enterprise

Sustainability Training

751
training attendees

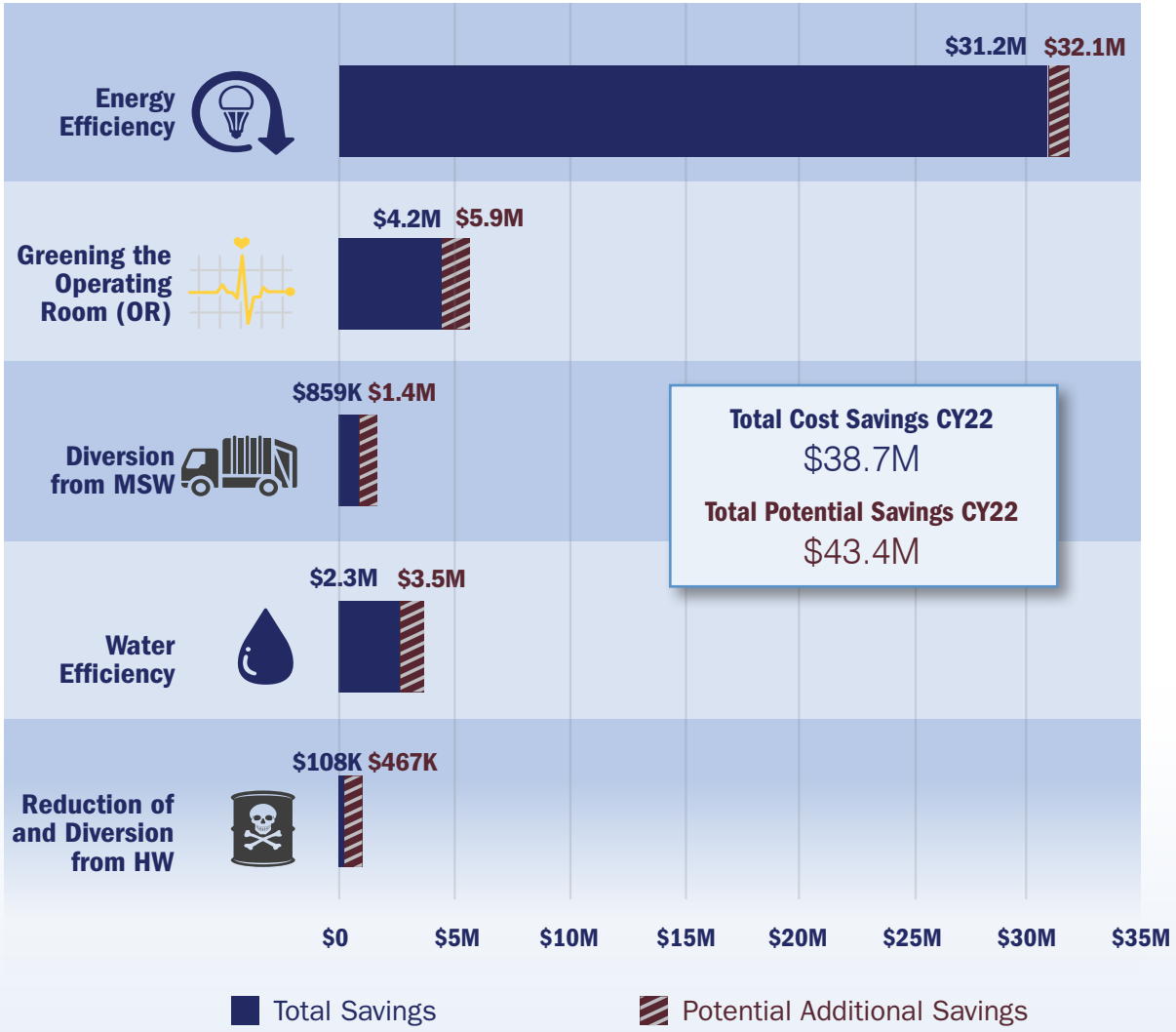
Sustainable Buildings

4.51M
Square Feet

33
Leadership in Energy and Environmental Design (LEED) Certified Buildings

*terms defined on page 12

Cost Savings



Total Cost Savings CY22
$38.7M

Total Potential Savings CY22
$43.4M

Part of the analysis we perform using our sustainability data is to estimate the cost avoidance and cost savings associated with operating more efficiently with a focus on a smaller environmental footprint. In CY22, DHA realized over $38.7 million (M) in savings, summarized by the dark blue bars in the chart, showing sustainability is smart business practice. We also extrapolate potential additional savings if the 31 participating MTFs were to perform as well as their peers within the Agency, summarized by the striped bars on the chart. DHA had the potential to realize an additional $4.7M, or a total of $43.4M in CY22, if all 31 MTFs improved their sustainability practices. (Refer to the back cover for a description of the methods applied for these calculations.)

Energy Efficiency Pays Dividends

This year, the DHA Sustainability Program increased its cost savings dramatically. These increased savings are a direct result of our focus on building performance and energy efficiency. About 80% of our facility energy use intensity (EUI) values are lower than the PGH-reported healthcare industry median. Being more efficient helped DHA offset impact of increased energy costs seen in CY22, especially in remote locations such as Hawaii.

Sustainability Successes and Best Practices

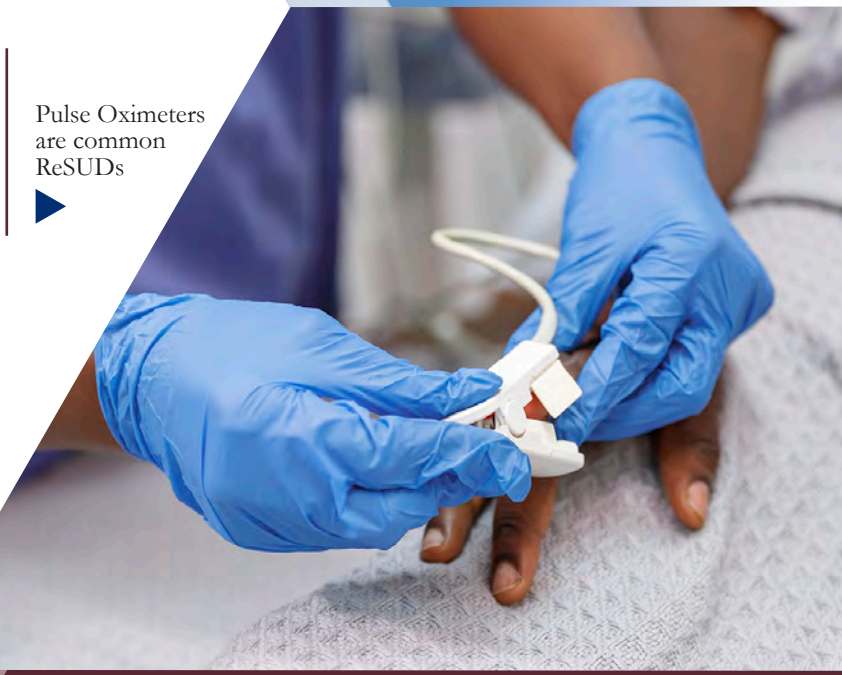
Improvement across many areas with leadership support

As MTFs emerged from the COVID-19 pandemic, many were able to focus more on sustainability initiatives, and CY22 saw big gains in the number of reported successes across most sustainability focus areas. In particular, many MTFs reported renewed or increased support from their leadership. **Ireland Army Health Clinic** and **Crawford F. Sams Army Health Clinic (CFSAHC)** are among MTFs that reported increased focus from leadership on sustainability efforts and/or creation of sustainability leadership positions to formalize the program. At **Winn Army Community Hospital**, the Sustainability team revamped the MTF's recycling policy and regulated medical waste (RMW) training. Leadership support has led to greater enforcement of the policy and a resulting decrease in waste generation.

The sustainability team at Crawford F. Sams Army Health Clinic, Japan

As is often the case with sustainability initiatives, many successes were also achieved through a bottom-up approach, with dedicated personnel at the MTFs working together to achieve mutually beneficial results. Reducing waste and use of products with negative environmental impact was a common theme observed among 2022's successes, with many MTFs leaning in to the top pillars of the waste management hierarchy (Reduce, Reuse, Recycle). **Carl R. Darnall Army Medical Center (CRDAMC)** hosted a pumpkin collection event resulting in 900 pounds of compostable material diverted from the landfill. While traditional recycling has been particularly challenging over the last few years, **Reynolds Army Health Clinic** managed to achieve a 42% increase in corrugated cardboard recycling and a 100% increase in office paper recycling – and was the top recycler for active-duty units on Fort Sill. Hazardous chemical use declined in 2022 as well, with multiple MTFs reporting increased purchasing of cleaner and greener options. Examples include: **Brooke Army Medical Center (BAMC)** maintaining 100% green cleaning chemical purchasing, and improved management processes that reduce chemical waste and prevent unnecessary expiration of chemicals at **Kenner Army Health Clinic, William Beaumont Army Medical Center** and **CFSAHC**. And **Fort Belvoir Community Hospital*** pared down the number of deliveries per week from the main medical supply warehouse, reducing waste and resulting in more accurate quantities of necessary items.

The U.S. Environmental Protection Agency's waste hierarchy graphic



Pulse Oximeters are common ReSUDs

Several MTFs also reported new or re-invigorated efforts to collect Single Use Devices (SUDs) for reprocessing, diverting these from the waste stream. MTFs also worked to procure reprocessed devices (ReSUDs) to further close the materials loop and save procurement dollars. Both well-established ReSUD programs such as those at **Womack Army Medical Center and CRDAMC** and newer efforts such as those at **Irwin Army Community Hospital (IACH)** and **Weed Army Community Hospital (WACH)** resulted in significant cost savings for the MTFs through lower waste volumes and procurement of ReSUDs.

*Renamed to Alexander T. Augusta Military Medical Center in 2023

BAMC staff serving with OZZI containers

Sustainability Successes and Best Practices

Improvement across many areas with leadership support

Automation and digitization also played a role in waste reduction. The pharmacy at **Guthrie Army Health Clinic** purchased automatic pill dispensing machines, which has greatly reduced the amount of pills spilled on the floor. At **Walter Reed National Military Medical Center (WRNMMC)**, the pharmacy provides medication guides via QR code instead of printing long medication instructions on paper.

Many MTFs reported sustainability successes in the dining facilities. Food service and food choices have an enormous impact on sustainability, affecting energy and water use, GHG emissions, and waste generation. Improvements involved redesigned menus to include more plant-based options, utilizing excess quantities of certain foods in innovative recipes to reduce waste, and implementing reusable food take-out containers through systems such as the OZZI©. At **BAMC**, 200 such containers were in circulation in 2022. At **Bassett Army Community Hospital**, the kitchen staff designed a menu that maximizes repurposing food and developed improved forecasting measures. **Blanchfield Army Community Hospital and WACH** implemented more vegetarian options in their dining facilities.

Nutrition Topic of the Month
Sustainability in our Food System

How does the way we eat effect the environment?

In honor of Earth day on 22 April, this month's Nutrition Topic is sustainability in our food systems.

Introduction

Global food production is one of the leading causes of greenhouse gas (GHG)emissions. This translates to 30% of total global emissions. Livestock generates the highest level of HG emissions, whereas fruit and vegetable production generates the lowest levels. This lead to the question: what can we as the consumer do about this? Before we look into actions we can take, let's define the problem and talk about how food production is effects climate change.

Greenhouse Gases, Climate Change/Global Warming, and Food Production

Global warming is the gradual heating of the Earth's surface, oceans, and atmosphere, primarily caused by HG emissions. These GHGs trap outgoing energy in the Earth's atmosphere, causing heat retention. This retained heat leads to changes in climate and weather patterns.

MHS Military Health System
health.mil

Lastly, MTFs made progress in energy and water conservation. Lighting was replaced with more efficient LED bulbs at **WRNMMC** and **Landstuhl Regional Medical Center,** and **WRNMMC** also installed dual-flush toilets that regulate the amount of water used. Using recycled water for irrigation and native plants that require less irrigation are standard practices at **IACH** and **WACH**. Optimization of mechanical systems at **Eisenhower Army Medical Center** led to significant decreases in energy usage despite coming out of COVID operations and bringing staff back to work, and upgrades to the Building Automation System at **Kimbrough Ambulatory Care Clinic** are expected to provide increased energy efficiency in coming years.

These successes are just a small sample of the many initiatives undertaken by DHA MTFs in CY22. The DHA Sustainability Team is grateful to MTF personnel and leadership for their efforts.

The healing garden at Irwin Army Community Hospital, Fort Riley, KS

Looking Ahead

Though we're now officially a DHA program, we're still very early in the process of rolling out to our Navy and Air Force facilities. In the next year we'll be conducting workshops and outreach to establish sustainability teams across the largest Navy and Air Force facilities. We will focus on collecting data and success stories from our partners at facilities across all three services.

We're also excited to build our program's reach by working with our chief sustainability officer (CSO) to improve visibility and guide policy development across the MHS in a more sustainable direction. We'll be working with stakeholders from other federal health systems including the Department of Health and Human Services and the Department of Veteran's Affairs to align our priorities and efforts around climate action and making a cleaner, greener health care sector.

Defense Health Agency

2023 Practice Greenhealth Awards

2023 Practice Greenhealth TOP 25 ENVIRONMENTAL EXCELLENCE AWARD

Carl R. Darnall Army Medical Center

Practice Greenhealth CIRCLES OF EXCELLENCE AWARD

Chemicals

Carl R. Darnall Army Medical Center

2023 Practice Greenhealth GREENING THE OR RECOGNITION AWARD

Blanchfield Army Community Hospital
Carl R. Darnall Army Medical Center
Eisenhower Army Medical Center
Irwin Army Community Hospital
Madigan Army Medical Center
Womack Army Medical Center

2023 Practice Greenhealth GREENHEALTH PARTNER FOR CHANGE AWARD

Bassett Army Community Hospital
BG Crawford Sams Army Health Clinic
Blanchfield Army Community Hospital
Brooke Army Medical Center
Eisenhower Army Medical Center
Evans Army Community Hospital
Fort Belvoir Community Hospital*
Guthrie Ambulatory Health Care Clinic
Ireland Army Health Clinic
Irwin Army Community Hospital
Kenner Army Health Clinic
Kimbrough Ambulatory Care Center
Landstuhl Regional Medical Center
Madigan Army Medical Center
Martin Army Community Hospital
Moncrief Army Health Clinic
Reynolds Army Health Clinic
Walter Reed National Military Medical Center
Weed Army Community Hospital
William Beaumont Army Medical Center
Winn Army Community Hospital
Womack Army Medical Center

*Renamed to Alexander T. Augusta Military Medical Center in 2023

Building on a Legacy of Success

As the DHA Sustainability Program rolls out across the entire DHA enterprise, we look forward to including data from a wide variety of new sites from the Navy and the Air Force. This map shows the locations of the sites that achieved the PGH Partner for Change Award last year, as well as the locations of the MTFs whose data will be included in our annual report for the first time next year. The new sites will report their sustainability metrics during the 2023 Annual Data Call which starts in November, and we look forward to their contributions.

Calculation Details Actual and Potential

Diversion from MSW. Actual - Cost savings are based on average cost of disposal per ton across the DHA. The DHA achieved $787K savings from diversion of waste from landfills + $72K savings from food waste diversion in CY2022. **Potential** - If all MTFs adjusted their solid waste removal Installation Service Support Agreement (ISSAs) to "right-fit" their needs, the DHA could achieve $1.19M savings. If all MTFs with dining facilities diverted food waste at the medial rate of those that reported, the DHA could achieve $1.4M savings from food diversion.

Diversion from HW. Actual - HW diversion = Universal waste (UW) cost savings (DHA saved $108K in CY2022). UW savings = Cost difference between disposal as HW and disposal as UW. **Potential** - UW: Estimated the savings (delta) of disposing of the UW as recycled UW versus HW and extrapolated to MTFs that recycled UW but did not report UW costs.

Greening the OR and Diversion of Regulated Medical Waste (RMW). Actual - Greening the OR Savings = Single Use Devices (SUDS) diversion from RMW (DHA saved $79K in CY2022) + purchasing of reprocessed SUDs vs new SUDs (DHA saved $3.2M in CY2022) + reformulating OR kits (DHA saved $327K in CY2022) + reusable sterilization containers (DHA saved $150K in CY2022) + diversion from RMW with Fluid Management Systems (DHA saved $420K in CY2022). Note: "Reformulating OR kits" is the process of customizing the kits to only include items needed, saving the purchase and disposal cost of unneeded equipment and supplies. **Potential** - All extrapolated savings based on MTFs with ORs that did not report these savings in PGH applications in 2022. 1. SUDS diversion from RMW: Extrapolated data on average weight of SUDs returned for reprocessing per OR procedure and applied facility RMW cost per ton. 2. Cost savings for purchases of reprocessed vs new SUDs based on cost difference between reprocessed vs new SUDs. 3. Reformulating OR kits: Divided total dollars saved reformulating OR kits by total OR procedures for facilities that reported savings to calculate average savings per OR procedure. Extrapolated based on number of OR procedures. 4. Reusable sterilization containers: Calculated average dollars saved based on tons of avoided waste per number of instrument trays used in reusable sterilization containers as reported by MTFs that use reusable sterilization containers instead of bluewrap; extrapolated based on total number of instrument trays used.

Energy Efficiency. Actual - By operating more efficiently than the PGH median energy use intensity (EUI), MTFs save utility dollars. Savings = Difference in energy usage costs for the 21 MTFs with lower EUIs than the PGH median EUI vs energy usage costs at the PGH median EUI. There were 5 MTFs that reported inaccurate usage information and these were therefore not included in the calculations. **Potential** - By operating less efficiently than the PGH median EUI, MTFs have the potential for savings if they reduce their EUIs. Potential Savings = Difference in energy usage costs for the 5 MTFs with higher EUIs than the PGH medial EUI vs energy usage costs at the PGH median EUI. This assumes that these facilities would be capable of reducing their EUIs to match the PGH median EUI.

Water Efficiency. Actual - By operating more efficiently than the PGH median water use intensity (WUI), MTFs save utility dollars. Savings = Difference in water consumption costs for the 14 MTFs with lower WUIs than the PGH median WUI vs water consumption costs at the PGH median WUI. There were 6 MTFs that reported inaccurate water consumption information and were therefore not included in the calculation. **Potential** - By operating less efficiently than the PGH median WUI, MTFs have the potential for savings if they reduce their WUIs. Potential Savings = Difference in water consumption costs for the 11 MTFs with higher WUIs than the PGH median WUI vs water consumption costs at the PGH median WUI. This assumes that these facilities would be capable of reducing their WUIs to match the PGH median WUI.

Definitions

Alternative Fuel Vehicles: Alternative Fuel Vehicles (AFVs) consist of low-emitting and fuel-efficient vehicles and alternate fuel vehicles as defined by Section 301 of the Energy Policy Act of 1992, as amended (4 U.S.C. 13211). Please see the following links for a list of AFVs and alternative fuels, respectively: https://practicegreenhealth.org/sites/default/files/upload-files/transportation_toolkit_definitions_0.pdf and https://afdc.energy.gov/fuels/

Scope 1 GHG Emissions: Scope 1 emissions are direct greenhouse (GHG) emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, fleet vehicles, refrigerants, and anesthetic gases).