

Hospital Community Benefit Accountability

National Jewish Health

July 28, 2023

Submitted to: Department of Health Care Policy & Financing



COLORADO
Department of Health Care
Policy & Financing

Hospital Community Benefit Accountability Annual Report (CY 2023)

| | |
|----------------|--|
| Hospital Name: | National Jewish Health |
| Date: | 7/28/2023 |
| Submitted to: | Department of Health Care Policy & Financing |

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IMPORTANT NOTES:

Do not use an old version of this survey. Only use the latest version provided to you through the portal. Old versions will be rejected by the portal.

Do not drag and drop contents of cells. This will cause issues, and you will be asked to resubmit your survey.

Hospital Community Benefit Accountability Report

I. Overview

House Bill 19- 1320 requires non-profit tax-exempt general hospitals, Denver Health Medical Center, and University of Colorado Hospital to complete a community health needs assessment every three years and an annual community benefit implementation plan every year¹. Each reporting hospital is required to convene a public meeting at least once per year to seek feedback on the hospital's community benefit activities and implementation plans. These hospitals are required to submit a report to the Department of Health Care Policy & Financing (the Department) that includes but not limited to the following:

- * Information on the public meeting held within the year
- * The most recent Community Health Needs Assessment
- * The most recent Community Benefit Implementation Plan
- * The most recent submitted IRS form 990 including Schedule H
- * A description of investments included in Schedule H
- * Expenses included on form 990

More information can be found on the Hospital Community Benefit Accountability webpage at:
[Hospital Community Benefit Accountability Webpage](#)

Please direct any questions to the following email address:
[hcpf_hospitalcommunity@state.co.us?subject=Hospital Community Benefit Accountability](mailto:hcpf_hospitalcommunity@state.co.us?subject=Hospital%20Community%20Benefit%20Accountability)

¹ Long Term Care and Critical Access hospitals are not required to report.

Hospital Community Benefit Accountability Report

II. Checklist

A. Sections within this report

| Sections | |
|----------|---|
| x | Public meeting reporting section completed |
| x | Investment and expenses reporting section completed |
| x | URL of the page on the hospital's website where this report will be posted |
| | https://www.nationaljewish.org/about/community-health-needs-assessment |

B. Attachments submitted with report

| Attachments | |
|-------------|--|
| x | Most recent Community Health Needs Assessment |
| x | Most recent Community Benefit Implementation Plan |
| x | List of individuals and organizations invited to the public meeting |
| x | List of public meeting attendees and organizations represented |
| x | Public meeting agenda |
| x | Summary of the public meeting discussion |
| x | Most recent submitted form 990 including Schedule H or equivalent |
| x | Available evidence that shows how the investment improves Community health outcomes (Attachment is optional if description of evidence is provided within this report) |

Hospital Community Benefit Accountability Report

III. Public Meeting Reporting

Provide the following information on the public meeting held during the previous twelve months:

| | |
|-------|-----------|
| Date: | 23-May-23 |
| Time: | 4 p.m. |

Location (place meeting held and city or if virtual, note platform):

| |
|---|
| The public meeting was a virtual event, via Zoom. |
|---|

Describe your outreach efforts for the public meeting being reported:

Please enter responses below using a new row for each item.

| | |
|---|---|
| 1 | Direct Outreach: Direct invitations via email were sent to a list that had been kept from the previous year and updated over the past year. It was sent to 151 people and 96 companies or organizations. The email list included the organizations required in the HCPF Hospital Community Benefit Accountability program guidance, as well as organizations and individuals who had requested to be notified or with whom we had worked over the past year. The email invitation was sent three times in the month prior to the meeting and a reminder was sent the morning of the afternoon meeting to all who had registered for the event. National Jewish Health outreach staff followed up directly with some individuals to confirm email addresses and reached out to other staff members who work with people from broad community programs that could align with these efforts. |
|---|---|

| | |
|---|--|
| 2 | Web and Social Media: We used social media tools to reach the public broadly. We created a Facebook post and pinned it to our website starting 10 days before the meeting. We supplemented this approach with posts on social media (Facebook and Twitter) on the days leading up to the event. We placed information directly on the website 7 days before the meeting. |
|---|--|

| | |
|---|--|
| 3 | Advertising: We placed a paid advertisement in the Denver Post on Friday, May 5, 2023 and also on Wednesday, May 17, 2023. Each ad was placed in the front section of the paper, pages 5 and 9 respectively, and each was a 4-color ad sized at 5x7.5. The ad design was consistent with other materials used for the meeting so as to be identifiable for this meeting. |
|---|--|

Describe the actions taken as a result of feedback from meeting participants:

Please enter responses below using a new row for each item.

| | |
|---|---|
| 1 | We appreciate the time and insights that community providers and attendees shared in the meeting and responses. |
|---|---|

2

Feedback from attendees came in the form of information requests and questions, many of which were added to content for the presentation and/or answered during the presentation Q&A period.

3

Online/email Surveys. As follow-up, we sent a survey after the meeting to people who were unable to attend but had indicated an interest, and also to those who attended to solicit additional questions, comments and input. The survey asked for more input on topics such as perceptions on health care priorities and also gathered data to help us understand who we were reaching. Part of what we are currently assessing is the best way to stay in contact with organizations and individuals so as to gather information and create more dialogue throughout the year.

4

In person/phone surveys. In the same time frame as the meeting, we also conducted a series of interviews by phone with several organizations to more fully discuss their opinions and ideas. Those results are currently being reviewed and assessed along with those from the meeting. We appreciate the time and insights that community providers shared in their survey responses. There are some comments and ideas that we can respond to quickly and others that need time and research to address. Organizations reached included: Every Child Pediatrics, Denver Health Family Medicine, Clinical Tepeyac, Stride, Colorado Coalition for the Homeless, Inner City Health, Salud Family Health, 2040 Partners for Health.

Early results include a combined agreement that one of the challenges faced is in addressing patient adherence to treatment plans and the need for patient education. We have an education program that we can open up with additional access to tools to reinforce adherence.

5

In preparation for the community meeting, we received several questions which were answered/discussed during the meeting. We saw some of these themes come through in our email surveys as well as through our phone surveys and these areas -- though answered here, have also come into our planning conversations for further consideration.

6

Question/Meeting Input: What examples of services or programs have you invested in or plan to invest in (related to social needs like food, transportation, house support)? A. Among other programs, we provide social needs screening on all inpatients (adult & peds) and coordinate the follow-up with the RAE (regional accountable entity) for patients with positive screens. Another example is recent investment in developing transportation options for the students who attend our Morgridge Academy, which is our free school for K-8th grade kids with chronic and serious illness. We also provide a free lunch program for the kids at the school and kept this going even during the pandemic when the kids were all doing virtual learning from home (we delivered meals to the families.)

7

Question/Meeting Input: Would you talk about Innovations to tie your work with breathing/asthma/COPD in with behavioral health therapies for managing anxiety, depression and lack of school success for kids. Answer. We have addressed behavioral health for kids through both our pediatric program and with special programs through our school. We have a behavioral health program within our pediatrics department that helps kids and their families manage stress around their illness as well as to address specific problems. We have licensed social workers on staff again to extend their efforts to adults and pediatric patients and their families. This is one of the areas that we are exploring to see how these services might be expanded.

8

Question/Meeting Input: Have you considered partnering with and compensating community based organizations to help build partnership and build health solutions? Answer. We have partnered with a number of community organizations on specific projects and programs. We generally build collaborations and not paid or hired partners. We are always open to ideas and one of the reasons we continue to do the outreach survey is to gather this type of input which can lead to good collaborations.

9

Question/Meeting Input: Can you talk about what you are doing regarding end of life support for families losing a member to breathing disorders? Answer. We offer palliative care for patients and families that focuses on the physical, emotional, social, intellectual, and spiritual needs of people who have a serious illness, including those with cancer, end-stage organ failure and other illnesses. Palliative care resources include board-certified hospice and palliative care providers, social workers and clinical dieticians. We received other input from community members saying they were glad to hear that there is a specific program that looks at end of life.

10

Question/Meeting Input: We had questions about community programs such as yoga and others that might help people avert or move through their breathing related illnesses. Answer. We had several programs such as the one referenced for community exercise that had to be paused during the pandemic. We have not resumed these, but will continue to assess if we are able to offer them again. We do have a number of programs that support our patients as they address their breathing issues and we host support groups for many chronic medical conditions. In addition, we have supported and guided the local Walk with a Doc program for the past 13 years and have it on our list for ideas that may be expanded or enhanced.

Hospital Community Benefit Accountability Report

IV. Investment and Expenses Reporting

Provide the following information on the expenses included on submitted form 990:

Amount

| | |
|--|-------------------|
| Total expenses included on Line 18 of Section 1 of submitted form 990 | \$ 346,514,824.00 |
| Revenue less expenses included on Line 19 of Section 1 of submitted form 990 | \$ 11,761,948.00 |

Reporting Hospitals not required to complete the form 990 shall provide the above information as described on Lines 18 and 19 of form 990.

In the table below provide a brief description of each investment made that was included in Parts I, II, and III of Schedule H and include the following:

- Cost of the investment. For this reporting purpose, “investment” means the hospital’s expense net of offsetting revenue for financial assistance and means-tested government programs, other community benefits such as community health improvement services and community benefit operations, and/or community building activities. See the IRS instructions for Parts I, II, and III of Schedule H of Form 990 at www.irs.gov/pub/irs-pdf/i990sh.pdf.
- For each Schedule H investment that addressed a Community Identified Health Need identify the following categories:
 - ✓ Free or Discounted Health Care Services
 - ✓ Programs that Address Health Behaviors or Risk
 - ✓ Programs that Address the Social Determinants of Health

See Appendix A for definitions.

[Appendix A - Definitions](#)

See Appendix B for a Schedule H Crosswalk.

[Appendix B - Sch H Crosswalk](#)

- For each investment that addressed a Community Identified Health Need briefly describe available evidence that shows how the investment improves Community health outcomes or provide the evidence as an attachment.

| Categories | Schedule H Amounts | All or part a community identified need (Y/N) | Amount for free or discounted health services | Amount for health behaviors or risk | Amount for social determinants of health | Amount for other community identified need category | Does the Total match the sum of its parts? |
|------------------|--------------------|---|---|-------------------------------------|--|---|--|
| Totals (Formula) | \$ 67,484,694.00 | N/A | \$ 42,421,777.00 | \$ - | \$ 23,702,661.00 | \$ 1,360,256.00 | Yes |

| Schedule H Categories | Schedule H Amounts | All or part a community identified need (Y/N) | Amount for free or discounted health services | Amount for health behaviors or risk | Amount for social determinants of health | Amount for other community identified need category | Name and description of investments | Available supporting evidence |
|-----------------------|---|---|---|-------------------------------------|--|---|--|-------------------------------|
| Sch H-Category 1 | Financial Assistance at cost \$ 106,261.00 | Y | \$ 106,261.00 | | | | Health care services provided for free or at reduced prices to low income patients. | |
| Sch H-Category 2 | Unreimbursed Medicaid \$ 9,195,571.00 | Y | \$ 9,195,571.00 | | | | Government sponsored means-tested health care programs and services. | |
| Sch H-Category 3 | Unreimbursed costs of other means-tested government programs \$ 584,322.00 | Y | \$ 584,322.00 | | | | Government sponsored means-tested health care programs and services for those not eligible for Medicaid. | |
| Sch H-Category 4 | Unreimbursed costs of other means-tested government programs \$ 9,833.00 | Y | \$ 9,833.00 | | | | Costs for programs to develop testing and provide free vaccine in support of efforts related to the COVID-19 pandemic. | |
| Sch H-Category 5 | Community Health Education \$ 865,186.00 | Y | | | \$ 865,186.00 | | Operation of Morgridge Academy, a free K-8 school for chronically ill children located on the main campus at National Jewish Health. The school is focused on providing well-rounded education for students as well as education on managing their illness (extended to families and student's home support network.) | |
| Sch H-Category 6 | Community-based clinical services \$ 2,829,846.00 | Y | | | \$ 2,829,846.00 | | Operation of a pediatric asthma program with extended clinic hours, Immediate Care services provide 8 a.m. - 8 p.m. access to specialty care, including expansion of programs through safety-net clinics for respiratory care, amyotrophic lateral sclerosis patients, pulmonary, and scleroderma programs as well as behavioral health and specialized day programs for the most severe patients. | |
| Sch H-Category 7 | Community benefit operations \$ 816,494.00 | Y | | | \$ 816,494.00 | | Participation in community coalitions and collaborative efforts with the community, including costs associated with conducting the community health needs assessment, as well as research and collaboration with other community hospitals, Denver Department of Public Health and Environment, and Community Health Clinics-Family Medicine and Pediatrics. | |

| | | | | | | | | |
|--------------------------|--|------------------|---|------------------|--|------------------|-----------------|--|
| Sch H- Category 8 | Education for Health Professionals | \$ 3,163,338.00 | Y | | | \$ 3,163,338.00 | | Costs related to the residency program (clinical training,fellowships) at National Jewish Health; costs related to clinical training and licensing for nurses, pharmacy students, radiology students and respiratory students. Costs related to maintaining and providing access to the National Jewish Health Medical Library. |
| Sch H- Category 9 | Community Health | \$ 251,834.00 | Y | | | \$ 251,834.00 | | Programs to help meet the medical needs of the underserved, including subsidizing an inner city asthma program in Denver Public Schools, distribution of an asthma toolkit program in Colorado, and offering a free asthma care and teaching program in lower income Colorado communities and clinics for miners with lung disease throughout the state. Staffing for a nurse advisory line for physicians and other providers. |
| Sch H- Category 10 | Research commitment | \$ 15,775,963.00 | Y | | | \$ 15,775,963.00 | | National Jewish Health has an ongoing commitment to discovery and research. For example, during the pandemic, more than 80 research studies were designed and launched, including studies to help define basic elements of the disease, to those focused on new treatments, to clinical trials of potential drugs and therapies. There is ongoing engagement with residents of low-income, industrialized communities within Denver to collect and interpret air quality data. National Jewish Health researchers are leading a study that seeks to follow children in Puerto Rico from birth through 3-years-of-age to help understand the root causes of asthma. Finally there is ongoing leadership of a national long-term study on COPD to help understand causes as well as the differences in how the disease is experienced by varying groups of people. |
| Sch H- Category 11 | Bad Debt | \$ 1,360,256.00 | Y | | | | \$ 1,360,256.00 | Other costs |
| Sch H- Category 12 | Medicare | \$ 32,525,790.00 | Y | \$ 32,525,790.00 | | | | Discounted government program |
| Sch H- Category 13 | | | | | | | | |
| Sch H- Category 14 | | | | | | | | |
| Sch H- Category 15 | | | | | | | | |

V. Additional Information

Hospital Community Benefit Accountability Report

V. Additional Information

Please provide any additional information you feel is relevant to the items being reported on.
Enter responses below using a new row for each new note.

| | Additional Information |
|---------|-------------------------|
| Note 1 | See attached narrative. |
| Note 2 | |
| Note 3 | |
| Note 4 | |
| Note 5 | |
| Note 6 | |
| Note 7 | |
| Note 8 | |
| Note 9 | |
| Note 10 | |

Hospital Community Benefit Accountability Report

VII. Report Certification

I certify that the information in this report is provided according to all requirements set forth by the Department's regulations found in the Code of Colorado Regulations (CCR) at 10 CCR 2505-10, Section 8.5000.

I agree to provide additional explanation or documentation at the Department's requests within 10 business days of the request.

| | |
|----------------|-------------------------------|
| Hospital Name: | National Jewish Health |
| Name: | Lauren Green-Caldwell |
| Title: | Vice President Communications |
| Phone Number: | 303.728.6561 |
| Email Address: | Green-CaldwellL@njhealth.org |

Hospital Community Benefit Accountability Report

Appendix A - Definitions

Community - the community that a hospital has defined as the community that it serves pursuant to 26 CFR § 1.501(r)-(b)(3).

Community Benefit Implementation Plan - a plan that satisfies the requirements of an implementation strategy as described in 26 CFR § 1.501(r)- 3(c).

Community Health Center - a federally qualified health center as defined in 42 U.S.C. sec. 1395x(aa)(4) or a rural health clinic as defined in 42 U.S.C. sec. 1395x (aa)(2).

Community Health Needs Assessment - a community health needs assessment that satisfies the requirements of 26 CFR § 1.501(r)-3(b).

Community Identified Health Need - a health need of a Community that is identified in a Community Health Needs Assessment.

Financial assistance policy (FAP) - a written policy that meets the requirements described in 26 CFR § 1.501(r)- 4(b)

Free or Discounted Health Care Services - health care services provided by the hospital to persons who meet the hospital's criteria for financial assistance and are unable to pay for all or a portion of the services, or physical or behavioral health care services funded by the hospital but provided without charge to patients by other organizations in the Community. Free or Discounted Health Care Services does not include the following:

1. Services reimbursed through the Colorado Indigent Care Program (CICP),
2. Bad debt or uncollectable amounts owed that the hospital recorded as revenue but wrote off due to a patient's failure to pay, or the cost of providing care to such patients,
3. The difference between the cost of care provided under Medicaid or other means-tested government programs or under Medicare and the revenue derived therefrom,
4. Self-pay or prompt pay discounts, or
5. Contractual adjustments with any third-party payers.

Examples of Free or Discounted Health Care Services

- * Charity care or financial assistance program excluding CICP
- * Free services such as vaccination clinics or examinations

Health System - a larger corporation or organizational structure that owns, contains, or operates more than one hospital.

Programs that Address Health Behaviors or Risk - programs funded by the hospital and provided by the hospital or other Community organizations that provide education, mentorship, or other supports that help people make or maintain healthy life choices or manage chronic disease, including addiction prevention and treatment programs, suicide prevention programs and mental health treatment, programs to prevent tobacco use, disease management programs, nutrition education programs, programs that support maternal health, including screening, referral and treatment for perinatal and postpartum depression and anxiety, and healthy birth outcomes, and programs that help seniors and people with disabilities live as independently as possible in the Community.

Programs that Address the Social Determinants of Health - funding or in-kind programs or services that improve social, economic, and environmental conditions that impact health in the Community. Social and economic conditions that impact health include education; employment; income; family and social support; and Community safety. Environmental conditions that impact health include air and water quality, housing,

and transit. Programs that Address the Social Determinants of Health include but are not limited to the following:

1. Job training programs,
2. Support for early childhood and elementary, middle, junior-high, and high school education,
2. Programs that increase access to nutritious food and safe housing,
3. Medical Legal Partnerships, and
4. Community-building activities that could be included in Part II of Schedule H of the Form 990.

Reporting Hospital

1. A hospital licensed as a general hospital pursuant to Part 1 of Article 3 of Title 25 of the Colorado Revised Statutes and exempt from Federal taxation pursuant to Section 501(c)(3) of the Federal Internal Revenue code, but not including a general hospital that is federally certified or undergoing federal certification as a long-term care hospital pursuant to 42 CFR § 412.23(e) or that is federally certified or undergoing federal certification as a critical access hospital pursuant to 42 CFR § 485 Subpart F,
2. A hospital established pursuant to § 25-29-103 C.R.S., or
3. A hospital established pursuant to § 23-21-503 C.R.S.

Safety Net Clinic - a Community clinic licensed or certified by the Department of Public Health and Environment pursuant to Section § 25-1.5-103 (1)(a)(I) or (1)(a)(II), C.R.S.



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Appendix B - Schedule H Crosswalk

| Schedule H Part II Categories | Description | Community Benefit Report Category (Where more than one category may apply please refer to the definitions to determine how to report) |
|-----------------------------------|---|--|
| Physical Improvements and housing | The provision or rehabilitation of housing for vulnerable populations, such as removing building materials that harm the health of the residents, neighborhood improvement or revitalization projects, provision of housing for vulnerable patients upon discharge from an inpatient facility, housing for low-income seniors, and the development or maintenance of parks and playgrounds to promote physical activity | Programs that address the social determinants of health |
| Economic development | Assisting small business development in neighborhoods with vulnerable populations and creating new employment opportunities in areas with high rates of joblessness | Programs that address the social determinants of health |

| | | |
|---|---|---|
| Community support | Child care and mentoring programs for vulnerable populations or neighborhoods, neighborhood support groups, violence prevention programs, and disaster readiness and public health emergency activities, such as community disease surveillance or readiness training beyond what is required by accrediting bodies or government entities | Programs that address health behaviors or risk; Programs that address the social determinants of health |
| Environmental improvements | Activities to address environmental hazards that affect community health, such as alleviation of water or air pollution, safe removal or treatment of garbage or other waste products, and other activities to protect the community from environmental hazards. The organization cannot include on this line or in this part expenditures made to comply with environmental laws and regulations that apply to activities of itself, its disregarded entity or entities, a joint venture in which it has an ownership interest, or a member of a group exemption included in a group return of which the organization is also a member. Similarly, the organization cannot include on this line or in this part expenditures made to reduce the environmental hazards caused by, or the environmental impact of, its own activities, or those of its disregarded entities, joint ventures, or group exemption members, unless the expenditures are for an environmental improvement activity that (i) is provided for the primary purpose of improving community health; (ii) addresses an environmental issue known to affect community health; and (iii) is subsidized by the organization at a net loss. An expenditure may not be reported on this line if the organization engages in the activity primarily for marketing purposes | Programs that address the social determinants of health |
| Leadership development and training for community members | Training in conflict resolution; civic, cultural, or language skills; and medical interpreter skills for community residents | Programs that address health behaviors or risk; Programs that address the social determinants of health |
| Coalition building | Participation in community coalitions and other collaborative efforts with the community to address health and safety issues | Programs that address health behaviors or risk; Programs that address the social determinants of health |
| Community health improvement advocacy | Efforts to support policies and programs to safeguard or improve public health, access to health care services, housing, the | Programs that address health behaviors or risk; Programs that address the social determinants of |

| | | |
|-----------------------|---|--|
| | environment, and transportation | health |
| Workforce development | Recruitment of physicians and other health professionals to medical shortage areas or other areas designated as underserved, and collaboration with educational institutions to train and recruit health professionals needed in the community (other than the health professions education activities reported in Part I, line 7f of Schedule H) | Will be considered on a case by case basis. Submit information and justification to the Department as to how it meets the Community Benefit category |
| Other | Community building activities that protect or improve the community's health or safety that aren't described in the categories listed in Part II, lines 1 through 8 of Schedule H | Programs that address health behaviors or risk; Programs that address the social determinants of health; Free or discounted health care services |

| Other categories | Description | Community Benefit Report Category |
|-----------------------------|--|---|
| Financial assistance policy | A policy describing how the organization will provide financial assistance at its hospital(s) and other facilities, if any. Financial assistance includes free or discounted health services provided to persons who meet the organization's criteria for financial assistance and are unable to pay for all or a portion of the services. Financial assistance doesn't include: bad debt or uncollectible charges that the organization recorded as revenue but wrote off due to a patient's failure to pay, or the cost of providing such care to such patients; the difference between the cost of care provided under Medicaid or other means-tested government programs or under Medicare and the revenue derived therefrom; self-pay or prompt pay discounts; or contractual adjustments with any third-party payors | Free or discounted health care services |



**Hospital Community Benefit Accountability Report Narrative
and Evidence of Investment Improvement**

National Jewish Health

July 28, 2023

About National Jewish Health

National Jewish Health is an academic, specialty care hospital that has been located in Denver, Colorado since first opening its doors in 1899. Care is provided at a variety of locations in Denver and across the state. National Jewish Health also collaborates with Saint Joseph Hospital, a part of the Intermountain Health system (formerly SCL Health) and also with the University of Colorado in Denver, Mount Sinai Hospital in New York City and Jefferson Health in Philadelphia. The main care and research campus for National Jewish Health is at 1400 Jackson Street in Denver, Colorado, 80206. National Jewish Health also provides critical care management and inpatient care at several hospitals in Denver and through critical care telemedicine for Banner Health in five western states.

National Jewish Health was founded as a not-for-profit hospital that also sought to advance research and understanding of the diseases facing our communities so as to deliver better care and solutions. Since its beginning, National Jewish Health has also been dedicated to providing health-related education for patients, families, and medical doctors and caregivers. Today, National Jewish Health continues that mission and is the only facility in the world dedicated exclusively to groundbreaking medical research and treatment of patients with heart, lung, immune and related disorders.

Description/Evidence of Investment that Address and Improve Community Health Needs

To help understand the health needs within our community, we annually survey local consumers, community providers and our own physicians. We also meet with community members and collaborate on a variety of projects. These efforts help us define community health needs where we can make a difference, including Long COVID, access to specialty care, free and discounted health services, programs that address health behaviors, risk, and social determinants of health and medical research for improvements in care and new treatments.

Long COVID

Over the course of the past three years, National Jewish Health has played a significant role in meeting community needs created by the COVID-19 global pandemic, which has continued to affect patients into 2023. During this time, National Jewish Health has invested millions of dollars to launch and maintain a variety of programs that help protect the respiratory health of adults and children throughout our community. Those efforts continue.

While COVID cases have decreased significantly from early spikes, many COVID-19 patients continue to suffer with persistent symptoms and ongoing functional impairment as they recover from the disease.

In early 2021, we established a **Center for Post-COVID Care and Recovery** to address the ongoing health needs of adult and pediatric patients recovering from COVID-19. The Center was created by combining the adult and pediatric

Respiratory Recovery Clinics that were developed at the beginning of the pandemic, when National Jewish Health physicians identified that patients would need ongoing care after the acute phase of the disease had passed. During the pandemic, long COVID, emerged in many patients who had recovered from COVID-19. Symptoms of this new disease can include shortness of breath, fatigue, brain fog and gastrointestinal problems. In addition, recognizing that recovery can be challenging for pediatric patients with asthma, the COVID-19 Assessment Program for children, also created early in the pandemic, was folded into the Center to assess and address the lingering physical and emotional impact of this disease on children and athletes.

By 2022, this unique Center was expanded to include multispecialty support from experts in pulmonology, allergy and immunology, cardiology, electrophysiology, gastroenterology, infectious disease, neurology and sleep medicine. In 2023, the Center continues to provide ongoing critical care of both existing National Jewish Health patients and those in the broader community suffering with heart and lung symptoms related to long COVID, and to conduct significant research into all aspects of the disease. Care is delivered on a first-come, first-served model.

COVID-19 Vaccination

While most Denver area COVID-19 vaccination sites shut down in March 2021, National Jewish Health continued to offer vaccines to the broader community through March 2023. Going forward, the vaccine continues to be available to patients during office visits. In 2020, once the first vaccine received Emergency Use Authorization (EUA) in December, National Jewish Health quickly developed a process and online platforms to manage and track vaccine appointments, vaccine received and timing between different doses. Attention was turned to vaccine distribution during mass events that could vaccinate 3,000 to 3,500 people each day. Vaccination events were staffed entirely by volunteer health care providers. In addition, National Jewish Health continued its partnership with the **University of Denver, providing a variety of services to help with key populations**, including underserved populations.

COVID-19 Collaborations and Community Support

National Jewish Health collaborated with several organizations such as **Clayton Early Learning** to reach more than 500 economically disadvantaged children across the metro area and to help educate parents, teachers and children about COVID-19, explore how that virus is transmitted inside and outside the classroom, how it impacts an early childhood educational setting, and to determine if there are any associations between health and later educational outcomes. Our preliminary data shows a significant decline in progression of educational milestones in the early childhood community of children from lower socioeconomic status in school children during the COVID epidemic.

National Jewish Health also partnered with the **University of Denver (DU)** to plan the safe return to campus for students and faculty, and continues to serve as the strategic health care partner for DU. These organizations also collaborate on

opportunities to generate novel research and new discoveries at the forefront of health research and health care and community sustainability. Research has included identifying novel biomarkers for long COVID, the health effects of vaping on young adults, characterizing the immunologic landscape of adolescent depressive symptoms, asthma, brain injury and partner violence, and risks of ambient air pollution in the Denver metro area.

COVID-19 Research and Education

Clinicians and researchers at National Jewish Health led or participated in more than 80 COVID related research projects aimed at increasing our understanding of COVID and long COVID, identifying the impact on body systems and overall health and developing effective treatments for acute and post-acute disease. Significant findings published include identifying the predictor of developing long COVID, discovering a cause of COVID-19, characterizing four phenotypes of COVID-19 patients and addressing long COVID in children.

Additionally, during the years of the pandemic and working throughout 2022, National Jewish Health critical care physicians discovered new COVID-19 treatments, helped weary colleagues and shared their experiences with hospitals across Colorado. Intensive care units at five Denver-area hospitals, which are managed and staffed by National Jewish Health physicians, completed an unprecedented 15 clinical trials of COVID-19 therapies. The antiviral medication Remdesivir and anti-IL-6 therapies proved effective and are now integral elements of COVID-19 care in all hospitals.

Access to Specialty Care

National Jewish Health ensures all patients have equal access to specialty care. Patients are scheduled on a first-come, first-served basis, regardless of ability to pay. Throughout the pandemic, we met the ever-changing needs of patients and the community through adjusting, adapting and innovating.

The pandemic helped National Jewish Health identify a need in the community for same-day, non-emergent care for severe respiratory and other illnesses and injuries. Opened in 2021, the Immediate Care clinic meets the needs of current adult and pediatric patients and the broader local community for sudden, urgent symptoms of unexpected illnesses and minor injuries, particularly those related to respiratory issues. The program is dedicated to getting the right care to each patient for urgent issues that don't qualify as an emergency, but require immediate attention. The clinic provides the community with diagnostic services, medical care and referrals, as needed, to other area hospitals.

Free and Discounted Health Services

National Jewish Health provided \$9.9 million of free or discounted health services to people in need in our community, as reported in the most recent 2022 Form 990. This number included care provided to Medicaid patients, participants in the Colorado Indigent Care Program, students at Morgridge Academy and our own charity care programs.

Community Garden

For more than 25 years, the hospital has set aside a portion of our campus for a community garden. The Gove Community Garden provides space for over 80 individual gardeners. The garden is managed by staff from Denver Urban Gardens who provide skills and resources for people to grow and harvest their own healthy food. The hospital maintains the grounds including access to water and security.

Programs that Address Health Behaviors or Risk

Tobacco cessation. Tobacco use continues to be a leading cause of preventable death in the U.S., and is related to one in five deaths each year. Vaping, which has contributed to nicotine use and addiction, has increased 27% among teens and young adults. National Jewish Health developed a comprehensive evidence-based tobacco-cessation program that now operates in 22 states, including Colorado, and has developed additional focused programs for at risk populations such as LGBTQ and American Indian Communities. National Jewish Health also meets changing community needs with one example being in the rapid increase in vaping among youth. We developed a teen quit line, along the lines of our tobacco cessation programs but uniquely geared toward young people. The program now operates in 24 states to meet the address the needs of teens who vape.

Physical Activity. The Walk-with-a-Doc program is now in its 13th year. Led by a National Jewish Health doctor, the program invites the public to monthly walks and health information sessions led by physicians and delivered in parks throughout Denver. The sessions are free and open to the public. As we emerge from the pandemic, these sessions help people safely resume healthy walking activities.

Air Pollution. National Jewish Health has led several initiatives to track, assess and understand the effects of air pollution on people in Denver, particularly those in living in industrialized neighborhoods. Several ongoing studies are providing insights to help understand the risks, develop options for care, and innovate ways to reduce exposures to hazardous air pollutants.

Education. An important element for patients and for caregivers, National Jewish Health provides a variety of educational opportunities that reach a variety of consumers and health professionals.

- **Morgridge Academy.** Patient education is provided for students at our Morgridge Academy, a free K-8 school for chronically ill children. These students and their families receive education about their student's health condition, treatment and self-management in addition to a solid general education for the student. This program is the only one of its kind in the country. This past year, the organization identified a need to help students with transportation. This grew into testing a model similar to an "uber" approach to help families and children reach the school. (An additional discussion of the school is included in the next section of this report.)
- National Jewish Health hosts, organizes and leads several community support groups for people suffering from various health issues, including diabetes,

chronic obstructive pulmonary disease, interstitial lung disease and insomnia. Due to the concerns around COVID-19, some support groups were temporarily suspended, and others became and continue to be offered virtually until it is safe to resume an in-person format. Several programs are now being brought back to be both virtual and in person. Input from the community has reinforced the need for this type of programming and is on our list for further development into this next year.

- **Health Content.** National Jewish Health provides a robust library of health content, authored exclusively by experts at National Jewish Health, and provided both in print and online. The educational material produced ranges from more than 200 MedFacts, TestFacts and Understanding booklets to dozens of instructional videos on topics such as inhaler technique and “What is COPD?” In early 2020, we launched one of the nation’s first COVID-19 websites to provide helpful, authoritative and factual information related to the SARS-CoV-2 virus and COVID-19, the disease it causes. The COVID-19 information brought nearly 4 million visitors who viewed more than 7.1 million pages. Dedication to ongoing publication of educational health-related information continues with new topics for the upcoming year. The National Jewish Health website is certified by the Health on the Net Foundation Code of Conduct (HONcode) as a trustworthy site for health information.
- Professional education is offered as academic training through fellowship programs for medical students, interns, residents, and postgraduate fellows, in continuing medical education seminars that are offered virtually and live in cities across the U.S. and via our community provider outreach efforts that include a series of educational initiatives aimed at increasing health care providers’ ability to assess and manage asthma and COPD. These outreach programs have so far trained caregivers in 170 primary care practices that serve medically underserved populations in eastern Colorado, southern Colorado and the Denver metro area and the Navajo Nation in Arizona.

Programs that Address the Social Determinants of Health

Research for the most recent Community Health Needs Assessment identified a variety of environmental, social and economic factors, including poverty, education, air pollution, access to care and insurance coverage, which contribute to poor health in our communities. National Jewish Health provides programs to help address these concerns including the key examples that follow.

Morgridge Academy. The Morgridge Academy is a free K-8 school for children whose chronic disease impedes their ability to attend and succeed in school. Housed wholly on the National Jewish Health campus and managed and run by the hospital, most of the children who attend the school come from low-income families and are eligible for free and reduced-cost lunch programs. Many suffer from asthma or a variety of respiratory or other illnesses such as diabetes, cystic fibrosis, allergies and others. By providing a situation to address their immediate health needs and a safe, nurturing environment for learning, the Morgridge Academy delivers an education that greatly improves not only their health, but also economic and social opportunities for the students. In addition, nurses and staff teach both the students and their family members how to care for themselves,

avoid behaviors that worsen their disease and manage exacerbations of disease, thus reducing the burden of disease.

During the pandemic, the school moved mostly to remote learning which was important in continuing to monitor the health of the children and the needs of the families. The teachers of the school worked to deliver daily weekday meals for the children and their families to keep them on track with their health. This care has continued into 2023 as National Jewish Health and its staff – teachers and caregivers – continue to support these children and provide the education that will help move them successfully toward their futures.

During the summer of 2022, National Jewish Health focused on remodeling parts of the school, upgrading some of the infrastructure such as elevators and restrooms as well as enhancing the way the school facility enhances and serves the learning environment for the children.

Pediatric Asthma Tune Up and Wellness Program. With one in 12 children impacted by asthma and that number likely as high as 38% in underrepresented communities, National Jewish Health has worked to address the toll of childhood asthma. National Jewish Health created the Asthma Tune Up and Wellness Program to improve asthma knowledge, inhaler technique and self- management through a variety of interactive educational tools and one-on-one practice with an asthma educator. The program also helps children and families implement and maintain lifestyle changes.

The Miners Clinic of Colorado. This program is in its 20th year providing nationally recognized medical screening, diagnosis, treatment, pulmonary rehabilitation, education and counseling and prevention services through free screening programs held at various locations around the state. This program was paused during the early stages of the pandemic, but has now been resumed. Recently our physician-scientists published findings indicating that there's been a major resurgence in progressive massive fibrosis or black lung disease in coal miners whose job duties weren't previously considered high risk. This is one of the major programs that we provide to the community – both through care and ongoing focused research.

The Black Lung Clinic. This program provides care with appointments year-round at National Jewish Health. The program also includes annual outreach clinics in partnership with local hospitals in Craig, Montrose and Pueblo. Currently, there are more than 5,000 miners who reside in Colorado.

Medical Research for Improvements in Care and New Treatments

Research is core to the work at National Jewish Health with most faculty and staff involved in clinical and basic research along with their work with patients. They conduct extensive basic, translational and clinical research on a wide variety of respiratory, immune and related diseases, which helps prevent these diseases, and deliver new treatments and medications that benefit our Colorado and national communities.

In the most recent reporting year, National Jewish Health invested \$15.7 million in research in addition to receiving more than \$53 million in grant funding, mostly from

the National Institutes of Health (NIH). As an NIH-funded Clinical and Translational Research Center, the center provides an infrastructure for community-based research in collaboration with the University of Colorado.

In recent years, research findings have included measuring changes in emphysema over more than 10 years, identifying an emerging treatment for children with long COVID and recurrent fever, discovering biomarkers that could predict future allergic conditions, developing a chronic obstructive pulmonary disease (COPD) screening tool and creating an antibiogram for making informed treatment decisions for patients with nontuberculous mycobacteria.

Currently, National Jewish Health researchers participate in national research networks to understand, prevent and treat asthma, COPD idiopathic pulmonary disease, cystic fibrosis, food allergy, eczema, and how best to treat critically ill patients in intensive care. Among other studies, the following are examples:

- National Jewish Health researchers are leading COPDGene®, the largest ongoing study ever done to investigate underlying genetic factors of COPD and increase understanding of the causes, progression and prevention of chronic obstructive pulmonary disease.
- We are conducting a variety of studies on air pollution and vulnerable populations to understand the risks, options for care and improvement in Denver, including the Globeville, Elyria and Swansea neighborhoods.
- National Jewish Health is conducting several investigations of electronic cigarettes and their impact on lung health.
- We continue to study asthma and its relationship (prevalence and treatment response) to vulnerable population groups.

National Jewish Health

2023 Community Health Benefits Discussion

May 23, 2023

Agenda

Overview and Our Commitment to Our Communities

– Michael Salem, M.D., President and CEO

Community Benefit Profile

– Chris Forkner, Executive Vice President, Corporate Affairs

Our Clinical Approach and Ongoing COVID-19 Work

– Steve Frankel, M.D., Executive Vice President, Clinical Affairs

Hospital Transformation Program

– Carrie Horn, M.D., Chief Medical Officer

Research Mission and Community Program Highlights

– Michael Salem, M.D., President and CEO

Next Steps, Questions & Answers

– Lauren Green-Caldwell, Vice President Communications
and all presenters

The virtual meeting is posted on our website.

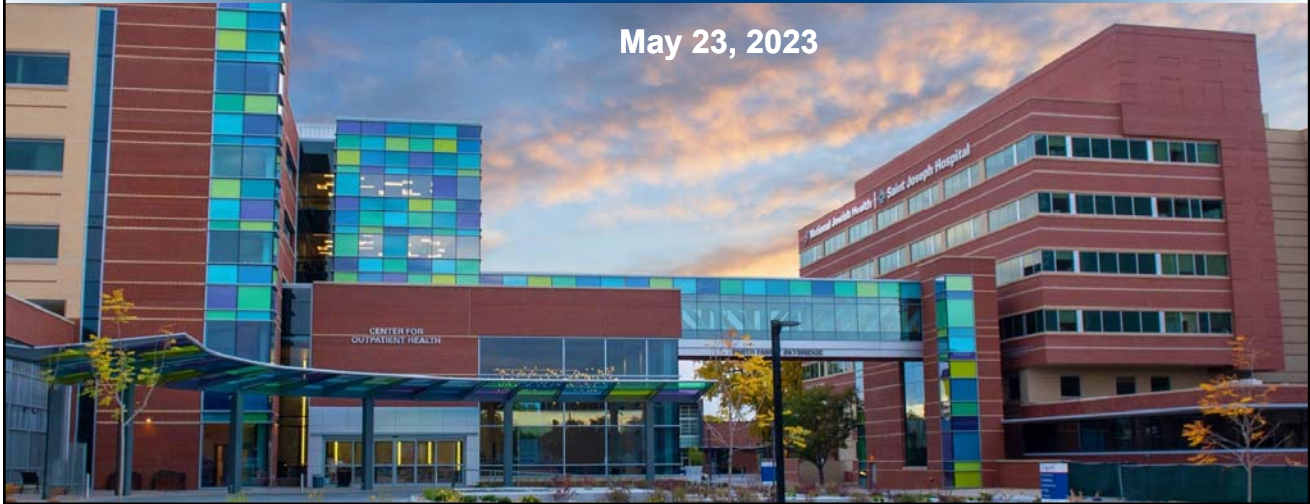
<https://www.nationaljewish.org/about/community-health-needs-assessment>



Welcome

Community Health Benefits Discussion

May 23, 2023



Welcome and Session Details

- Your microphone has been muted to help reduce background noise.
- You may type your questions into the Q&A box at the bottom of your screen. We will answer questions at the end of the session, as time allows, including questions submitted before the meeting.
- This zoom session is being recorded and will be available on our website beginning in *July*.

Thank you for joining us!

Introductions and Today's Agenda

Overview and Our Commitment to Our Communities

– Michael Salem, M.D., President and CEO

Community Benefit Profile

– Chris Forkner, Executive Vice President, Corporate Affairs

Our Research Mission

– Brian Day, Ph.D., Vice President Research & Office of Research Innovation

Hospital Transformation Program

– Carrie Horn, M.D., Chief Medical Officer

Our Clinical Approach

– Steve Frankel, M.D., Executive Vice President, Clinical Affairs

Our Community Programs – Examples

– Michael Salem, M.D., President and CEO

Questions & Answers

– Lauren Green-Caldwell, Vice President Communications

National Jewish Hospital 1899: To Help and to Heal



The hospital opened as National Jewish Hospital for Treatment of Consumptives with a capacity of 60 patients and the goal of treating 150 patients a year.

The original hospital opened in 1899.

B'nai B'rith continued to support National Jewish until the early 1950s. Until 1968, the institution only accepted patients without health insurance and all care was free, emphasizing the charitable history of National Jewish Health.

Efforts were advanced by creating the first self-contained facility for treating children with active TB, working on anti-TB drugs and creating treatment protocols.

National Jewish erected its first building dedicated to the study of TB, and the first research facility in U.S. not in a medical school setting, that would be dedicated to research on the disease.

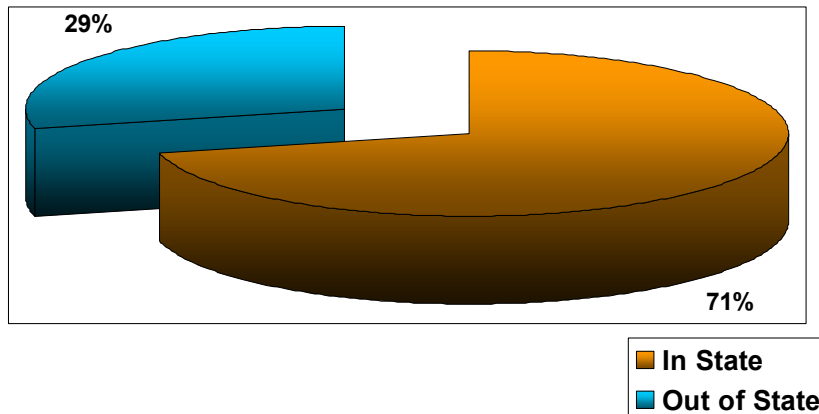
“For many years I have been familiar with the wonderful work done by your hospital in providing medical care for the needy. I extend my best wishes to you for continued public service in the fine tradition you have established.”

Lyndon B. Johnson

Dr. Hurst came to National Jewish in 1945, and looked into enhancing the surgery and cardio-pulmonary testing programs through Thoracoplasty, which was used before chemo-therapy was available.



National Impact – But Rooted in the Colorado Community



Mission & Vision

Mission

Our Mission since 1899 is to heal, to discover, and to educate as a preeminent health care institution. We serve by providing the best integrated and innovative care for patients and their families; by understanding and finding cures for the diseases we research; and, by educating and training the next generation of health care professionals to be leaders in medicine and science.

Vision

Our vision is to strengthen and enhance our role as the global leader in the treatment and research of respiratory, cardiovascular, rheumatologic, autoimmune, inflammatory and immunologic diseases. We pursue this vision by pioneering personalized health and medicine programs which embrace the paradigm shift from reactive medicine to proactive and preventive health delivery. Through our efforts, we pursue the discovery of cures for patients who seek treatment, and to bring new knowledge and innovation to help people worldwide.

Specialty Areas of Care – Adults

- Asthma, COPD, Pulmonary Medicine
- Allergy
- Sleep-related Breathing Disorders
- Respiratory Infections
- Rheumatology
- Cardiology
- Gastroenterology
- Oncology
- Critical Care
- E-ICU (Banner Health)
- Cystic Fibrosis



Specialty Areas of Care – Pediatrics

- Allergy & Asthma Treatment
- Atopic Dermatitis Program
- Behavioral Sleep Services
- Child Psychiatry Consultation
- Food Allergy Program
- Immunodeficiency and Immune System Evaluation Program
- Pediatric Day Program
- Exercise Tolerance Center
- Neuropsychology Services



- Pulmonary Diagnostic Center
- Pediatric Rehabilitation Services
- Pediatric Severe Asthma Clinic
- Psychosocial Programs



Strong Collaborations

Collaboration to spark innovation, deliver quality care

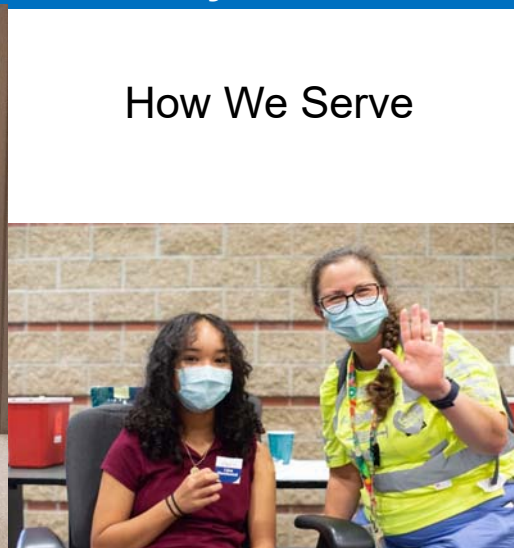
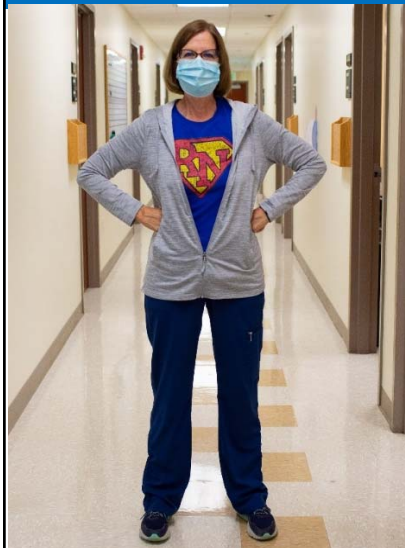


MOUNT SINAI - NATIONAL JEWISH HEALTH
Respiratory Institute

Jane and Leonard Korman
Respiratory Institute™



Community Benefit Profile



How We Serve

What is Community Benefit?

Programs, services and activities that are focused on addressing community health needs regardless of source or availability of payment, that provide measureable improvement in health status and that increase access to health care resources.

- Improve **access** to health services
- Enhance **public health**
- Advance increased **general knowledge**
- **Relieve or reduce a health burden** to improve health

Organization Profile – by the Numbers

| | |
|------------------------|---------|
| Total Patient Visits: | 138,069 |
| Outpatient Visits: | 104,600 |
| Total Staff/Employees: | 1,678 |
| Colorado Locations: | 20 |
| Number of Physicians: | 225 |



Community Benefit by the Numbers

National Jewish Health provides significant benefits to our communities in Denver, across the State and the Country.

In 2022, **10.2%** of unrestricted annual revenue was reinvested into our local communities.

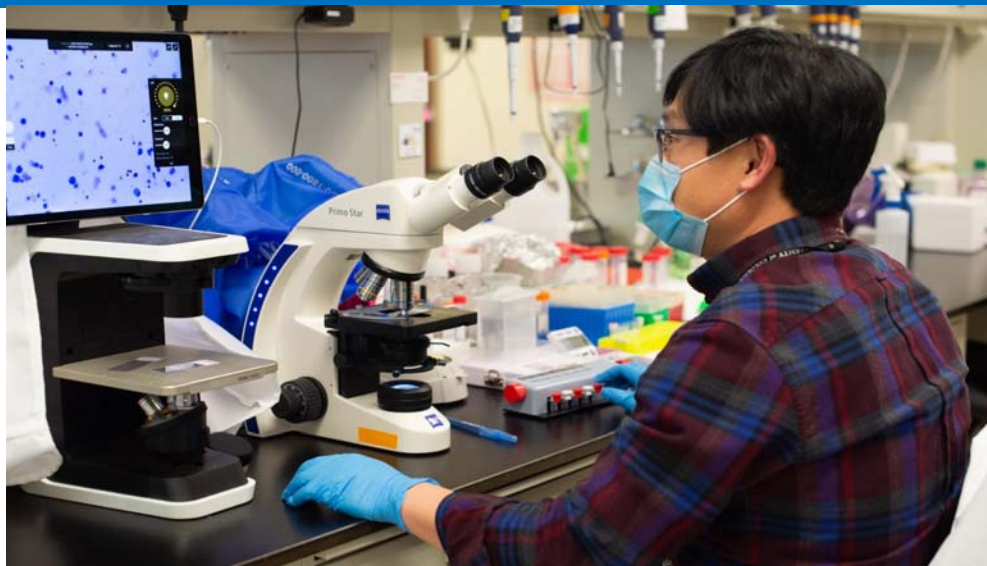


FY 2022

| | |
|---|----------|
| Charity Care and program shortfalls | \$ 9.9M |
| Health Professionals Education | \$ 3.2M |
| * Community Outreach, Benefit Programs/others | \$ 1.05M |
| Morgridge Academy | \$.9M |
| Subsidized Health Services | \$ 2.8M |
| Research Net | \$15.8M |

**Includes wide variety of programs – recycling, foodbank process, asthma management programs, black lung clinics, nurse advisory line, and more.*

Research Mission



NJH Research Priorities 2022 – 2023

Disease Focused

Airways Disease
Asthma and COPD

Allergic & Immunological
Diseases

ARDS/Critical
Care

Diffuse/Fibrotic Lung
Disease

Occupational Lung
Disease

Lung Cancer

Mechanism Focused

Allergy

Immunology

Lung Injury
Repair, and
Fibrosis

Lung Cell
Biology

Mucosal
Inflammation

**Environmental, Genomic,
and Immunologic
Basis of Respiratory and
Allergic Diseases
Discovery Science and
Innovative Treatments**

Genomics Data Sciences Precision Medicine Stem Cells and Regenerative Medicine Epidemiology/Outcomes

Center for Genes
Environment and Health

Programs and Centers

Center for Environment,
Climate, and Health



Research – Changing Lives Now and Future

Developing New Treatments – Sample of Published Work

- Study published in April looks at the association of traffic-related air pollution to severe atopic dermatitis
- Study published in April identified new treatment approach for children suffering from long-COVID, including those with periodic fever syndrome
- Study published in the fall shows heightened correlation between e-cigarette vapor and harmful inflammatory response in Influenza A
- Study published in May shows increased monitoring needed for wide variety of coal miners
- New tool developed to help identify cystic fibrosis in people of color



Community Health-Focused Research Programs

Sample Studies in Progress

- **AsthmaNet** – National Trials to address asthma in vulnerable populations
- **COPDGene®** – One of largest ongoing national studies ever to investigate underlying genetic factors in COPD. This study is led by doctors at National Jewish Health and continues into the next decade



- **Warfighters Lung Disease** – Led by doctors at National Jewish Health to help understand the illnesses suffered by soldiers returning home from Southwest Asia
- **Air pollution and vulnerable populations** – Variety of studies over many years to further understand risks, options for care and improvement

Hospital Transformation Program (HTP)

| Focus Area | Measure ID | Measure Name |
|--|------------|--|
| Reducing Avoidable Hospitalization Utilization | RAH1 | Follow up appointment with a clinician made before discharge and notification to the Regional Accountable Entities (RAE) within one business day |
| | RAH3 | Home Management Plan of Care (HMPC) Document given to pediatric asthma Patient/caregiver (eCQM) |
| Core Population | SW-CP1 | Social needs screening and notification to RAE |
| | CP7 | Increase access to specialty care |
| Behavioral Health/Substance Use Disorder | SW-BH2 | Pediatric screening for depression in inpatient and ED, including suicide risk (age 12 +) |
| Clinical and Operational Efficiencies | SW-COE1 | Hospital Index |
| | COE1 | Increase successful transmission of a summary of care record to a patient's primary care physician (PCP) or other health care professional within one business day of discharge from an inpatient facility to home |
| | COE3 | Implementation/expansion of e-consults |

Community Program Highlights



Community Outreach Programs

- **Clinical and Translational Research Center.** Provides infrastructure for community-based research
- **Lung Line.** A free information service for health care consumers, staffed by registered nurses
- **Miners Clinic of Colorado.** Provides medical screening, diagnosis, treatment, pulmonary rehabilitation and education through free screening programs
- **Asthma Toolkit.** A program of outreach to communities throughout the state to provide training of health centers, school programs that reach low-income and areas with low access to care

Ongoing COVID Care and Research

- COVID – Recently removed from pandemic status but still a critical need for care and research, particularly for those with long-COVID.
- National Jewish Health Center for Post-COVID Care and Recovery
 - More than 3,200 patients (children and adults) treated
 - Ongoing research focus with significant studies continuing



Immediate Care

- Meeting the needs of current patients and broader local community when experiencing sudden, urgent symptoms, seven days a week
- Need identified during COVID. Now expanded, running 7 days a week



Morgridge Academy

K–8 Free Day School for Children with Chronic Illnesses

- Serves 70-90 chronically-ill children grades K-8, each school year
- Addresses medical and social issues to help children succeed
- Learning includes school curriculum and a focus on managing illness
- Families included in outreach to help create better understanding of the needs of their child
- Meals included, special efforts during pandemic to ensure meals for children and families, ongoing support



Morgridge Academy

Ongoing Focus for Facility, Resources and Learning

- 2022 Renovation – expanded library and resource center, upgraded elevator and restroom facilities, new playground equipment and other furnishings
- School curriculum focus on experiential learning and problem solving



Vaping and Tobacco Use – Research and Quitline

- Tobacco use – leading cause of preventable disease and death in the United States – 1 out of 5 deaths every year
- 7 studies related to tobacco use and vaping published over past year with others still in progress
- **Quitline** – has helped nearly 2½ million with their quit attempts
- Focused programs developed for at risk populations such as LGBTQ and American Indian Communities
- Serving 21 states, including Colorado, & 24 states for quit vaping

My Life, My Quit™

- Vaping – e-cigarette use risen to 27% among teens, young adults
- Introduced in 2019 for teens, collaborative approach to finding answers and also an area of focus for ongoing research studies



National Jewish Health – Areas of Focus

Pediatric Asthma

- Continuing high rates of asthma and ER visits by children in local community, plus effects of pandemic, indicate unmet need. Focus continues for research, diagnosis and treatment.

Education

- Educating doctors, patients and community members through access to targeted programming, library of patient education and professional education programs. Providing care and education for children and families of chronically ill children through our Morgridge Academy.

Access to Specialty Care

- Expanding and adding programs that bring care and education to underserved populations. Focusing on specialty areas such as our Center for Post-COVID Care and Recovery.

Questions?

Please use the Q&A button
to submit a question.

Thank you!

2023 Community Meeting Registrations

| | Contact Name | County | Organization |
|----|----------------------|-----------------------------|--|
| 1 | Shay Lyon | El Paso | Community |
| 2 | Betty Trampe | Denver | Community |
| 3 | AJ Diamontopoulos | Denver | Denver Regional Council on Governments |
| 4 | Saphia Elfituri | Boulder, Broomfield, Jeffco | Colorado Community Health Alliance |
| 5 | James Johnston | Denver | Community |
| 6 | Angela Klawitter | Denver | National Jewish Health |
| 7 | Ann Marie Stein | USA | National Jewish Health |
| 8 | Evelien Van West | Israel | Other |
| 9 | Jessica Berry | Douglas | National Jewish Health |
| 10 | Michael Hill | Douglas | Douglas County Health Department |
| 11 | Emily Biniki | Douglas | Community |
| 12 | Lisa Barker | Denver | Community |
| 13 | Ryan Mockabee | Adams | Clinica Colorado |
| 14 | Andrew Grimm | Denver | Colorado Coalition for the Homeless |
| 15 | Santos Vera | Denver | Estes Street Community Clinic |
| 16 | Ann Parrish | Arapahoe | Community |
| 17 | Vida Paic | CO | Community |
| 18 | Mandy Ashley | Arapahoe | Aurora Health Alliance |
| 19 | Michelle Wolins | Jefferson | Community |
| 20 | Marian Langer | CA | Community |
| 21 | James Johnston | Denver | HCPF |
| 22 | Rich Mauro | Denver | Denver Regional Council on Governments |
| 23 | Molly Markert | CO | Colorado Access |
| 24 | Karen Shimamoto | Denver | Office of Saving People Money on Health Care |
| 25 | Steff Lebsack | Arapahoe | Community |
| 26 | CJ Erickson Mitchell | Jefferson | Community |

Invited Organizations List-Invitations via email-Initial invitations and 2 reminders.

| Organization |
|---|
| 2040 Partners for Health |
| Adams County Health Alliance |
| Arapahoe Health Alliance |
| Aurora Chamber of Commerce |
| Aurora Health Alliance |
| Bruner Family Medicine Clinic |
| Seton Women's Center |
| Uptown Community Health Center, Inc. |
| Caritas Clinic |
| CDPHE Center for Health and Environmental Data |
| CDPHE Colorado Health Assessment and Planning System |
| CDPHE Health Facilities and Emergency Medical Services |
| CDPHE Office of Health Equity |
| CHARG Resource Center /Heartland Clinic |
| Child & Family Services at North Federal |
| Clinica Colorado |
| Clinica Tepeyac |
| Colorado Access |
| Colorado Association of School Executives |
| Colorado Association of School Nurses |
| Colorado Asthma & Allergy |
| Colorado Center for Law & Policy |
| Colorado Coalition for the Homeless |
| Colorado Commission on Higher Education |
| Colorado Community Health Network |
| Colorado Consumer Health Initiative |
| Colorado Department of Human Services |
| Colorado Department of Public Health |
| Colorado Mental Wellness Network |
| Colorado Department Public Health & Environment |
| Colorado Human Services Directors Association |
| Colorado Office of Suicide Prevention |
| Colorado Rural Health Center |
| Community Health Association of Mountain/Plains States |
| Community Health Provider Alliance |
| Denver Adolescent Therapy Group & Stevenson Therapy Group |
| Denver Chamber of Commerce |
| Denver Children's Home |
| Denver City Council |
| Denver Health Community Health Clinics, Family Medicine |

Denver Health Community Health Clinics, Pediatrics
Denver Regional Council on Governments
Department of Saving People Money in Healthcare
Disability Law Colorado
East Side Family Health Center
Emerson St. for Teens & Young Adults
Estes Street Community Clinic
Every Child Pediatrics
Food Bank of The Rockies
Valley Wide Health System
Greater Englewood Chamber of Commerce
HCPF
Healthier Colorado
Adams County Health Department
Healthier Colorado
High Plains Community Health Center
Inner City Health
JeffCo Public Health Department
Jefferson County Public Health Clinic
LACASA-QUIGG-NEWTON
Lowry Pediatrics
MCPN
Wellpower
Mile High Health Alliance
Mountain Family Health Centers
Peak Vista Community Health Centers
People's Clinic HCH Outreach
Centura St. Elizabeth Hospital
Porter Hospital- Mental Health
Project Angel Heart
Pueblo Community Health Center, Inc.
Resolute Youth Services
Rocky Mountain Crisis Partners
Roundup River Ranch
Safe2Tell
Salud Clinic Health Centers
Second Wind Fund
Seton Women's Center at SJH
South Metro Denver Chamber of Commerce
Regional Accountable Entity (RAE)
State Representatives
Stride Community Health Center
Sunrise Community Health

Adams County Health Department
Uncompahgre Medical Center
Valley-Wide Health Systems, Inc.
West Metro Chamber of Commerce
Rocky Mountain Health Plans
Northeast Health Partners
Colorado Access
Colorado Community Health Alliance
CDPHE Public Health Practice, Planning, and Local Partnerships
Department of Human Services
Office of Saving People Money on Health Care
Division of Insurance with the Department of Regulatory Agencies
DPS School District 1
Adams County School District 14
Westminster Public Schools
Aurora Public Schools

BOULDER

CU to offer Ph.D. in engineering education starting in 2024-25

By Olivia Doak
Daily Camera

BOULDER—A new Ph.D. program in engineering education will be offered at the University of Colorado beginning in the 2024-25 academic school year, allowing students to pursue research and learning opportunities while strengthening the undergraduate engineering program.

The CU regents voted to approve a new doctorate degree in engineering education at the Boulder campus. Angela Bielefeldt, a professor in civil, environmental and architectural engineering, was part of the group that spearheaded the program.

Bielefeldt said graduate students with a passion for engineering education — including teaching, policy, directing programs — will soon have the flexibil-

ity to create a program that matches their interests.

The existing path to pursue research in engineering education requires doctoral students to complete separate coursework and exams in another engineering discipline before returning to their desired research area. The Ph.D. program in engineering education would remove the barriers to conducting research in this field and encourage students to pursue it, according to the program proposal.

“The college views the degree program as an opportunity to improve engineering education, increase undergraduate student retention and attract a diverse graduate student population and faculty who will contribute to the research and evaluation of engineering education, while enhancing the ability of faculty to actively attract fund-

ing through research and programmatic grants,” university Chief Financial Officer Todd Haggerty said in a letter of support for the degree program.

The proposal for the degree program includes research carried out by the Office of Data Analytics that forecasts a growth in employment opportunities for graduates in the field who hold doctoral degrees. The data also shows the number of bachelor's degrees awarded in engineering continues to grow, and according to Bielefeldt, the need for quality educators also will continue to rise.

The program will have a curriculum consisting of courses in education theory and practice in the School of Education and the College of Arts and Sciences, in addition to the College of Engineering and Applied Science.

College

FROM PAGE 2

Here are four other highlights from the report.

Some student groups still less likely to go to college

In the last six years, college enrollment among all ethnicities has dropped.

The trend continued in 2021, with Black, Hispanic, and American Indian students going at much lower rates.

In 2021, American Indian students went to college at the lowest rate, at about 34% of the group's graduating students. Hispanic students had the second lowest rate at 38% and were the second largest demographic group next to white students. About 47.6% of Black graduating students went to college.

In comparison, about 55% of white high school graduates went to college in 2021.

Students who are low income also are less likely to go to college than their peers. About 35% of those students who graduated in 2021 went to college, compared with about 55% of students who don't qualify for free or reduced price lunch, a proxy for income level.

What about the students who delayed college?

At the end of the 2019-

20 school year, as the pandemic limited public interaction, students reevaluated their college options. Many students said they would take time off before going to college.

Overall, about 58% of the students who graduated in 2020 ended up in college a year later. The rate is about 4.5 percentage points lower than the 2019 class rate.

Where are graduates going?

More Colorado students than ever are going out of state to college.

From 2009 to 2021, the portion of the state's high school graduates who chose out-of-state college rose from 19.5% to 29%. That figure jumped 4 percentage points in 2021 alone.

The figures show that Colorado must do better keeping its own. Paccione of the state's higher education department said in the news release. The exodus is creating an enrollment cliff for state colleges, she said.

Arizona and California are the top choices for Colorado high school graduates, followed by Utah, Montana, and Kansas. Students are also going in high numbers to Oregon, Florida, Washington, and New York.

Colorado tuition has increased over the years, making some in-state options less competitive.

Colorado school officials have said a recent change in the law could help attract more in-state students.

A law passed this year will allow Colorado schools to enroll more out-of-state students as long as colleges provide more in-state merit scholarships for Colorado students. Schools said the tradeoff will bring in out-of-state students who pay higher tuition that will help fund scholarships for Colorado students and enable schools to compete with financial aid packages offered elsewhere.

Fewer students take developmental education classes

The number of students taking developmental classes — those that help them catch up to college level — dropped to its lowest rate in the last decade.

Just under 17% of the class of 2021 took remedial education classes. That's down from 30% the year before when colleges saw a slight spike in students needing remedial classes.

The state said the decrease shows K-12 schools are better preparing students for college. The state also made changes that use multiple measures to assess whether a student needs developmental classes.

The state also changed policy to ensure students earn credit for taking those classes and increased support for students needing to catch up.

Chalkbeat Colorado is a nonprofit news organization covering education issues.

DENVER PUBLIC SCHOOLS

Injunction sought to block revocation of innovation zone

By Melanie Asmar
Chalkbeat Colorado

A lawsuit filed Wednesday has the potential to test the strength of school autonomy in Denver Public Schools, a former stronghold of school reform that has since reversed course.

The nonprofit organization Beacon Network Schools, one of three innovation zones in DPS, is suing the district to stop the revocation of the zone. The Denver school board voted April 10 to revoke the zone, which is made up of two middle schools: Kepner Beacon and Grant Beacon.

Under the zone, the leaders of Kepner and Grant are overseen by a nonprofit board of directors and not by DPS, which gives the schools increased autonomy. Revoking the zone returns Kepner and Grant to district control.

The lawsuit argues that revocation causes “irreparable harm” to students, families, and teachers.

“Beacon Zone students and families face uncertainty regarding the type of educational environment in which they will participate and will face a degraded school experience next year without the support of the Beacon Zone,” the lawsuit says.

DPS did not immediately respond to a request for comment Wednesday.

Beacon Network Schools is also appealing the revocation to the State Board of Education.

The state board's ruling won't be binding. Instead, the state board can review the revocation and make a recommendation to the Denver school board, which has the final say. The appeal is the first time an innovation zone has taken advantage of a new state

law passed last year.

In its lawsuit, Beacon Network Schools claims the Denver school board illegally revoked the zone. Beacon argues that a zone can only be revoked for one reason under state law: because students at one or more schools in the zone are not making sufficient academic progress.

In this case, Superintendent Alex Marrero recommended the zone be revoked for several reasons, including inadequate financial oversight by the zone board and concerns about the zone's organizational health. He raised concerns with the unique employment arrangement of the Beacon zone's executive director, Alex Magaña. Although Magaña is a DPS employee, he answers to the Beacon zone board, not to DPS administrators.

Beacon argues that none of those are legitimate reasons to revoke a zone.

Marrero also cited low student test scores at Kepner Beacon. Only 21% of students met expectations in literacy on state tests last spring, while 6% met expectations in math.

But Beacon claims the data is limited and flawed.

DPS officials had previously said in an email to principals that academic data from last school year was “not an accurate representation of an entire student body” because “far fewer” students took the test than usually do.

Beacon officials have said they suspect Marrero's recommendation to revoke the zone was based on a disagreement with Magaña. Marrero testified at the state Capitol against the bill to allow innovation zones to appeal to the state board. Magaña testified for it.

Eliot Lewis, chair of the Beacon Network Schools board and a former Grant Beacon parent, wrote in a signed statement attached to the lawsuit that he believes the school board's decision to revoke was “based primarily on personal enmity between District personnel, specific Board members, and BNS Executive Director Alex Magaña.”

Marrero has said the bill testimony had nothing to do with the revocation.

Beacon is asking the Denver District Court to grant both a temporary restraining order and a preliminary injunction to stop DPS from taking over Kepner and Grant.

DPS has already started the process, the lawsuit says, including by suggesting that Kepner and Grant staff may be required to attend “district-mandated summer programming” as opposed to summer programming put on by the Beacon zone.

The lawsuit argues that Beacon is in a time crunch. DPS has asked Kepner and Grant to submit new school-level innovation plans that erase all references to the zone by May 10.

There are only three innovation zones in the entire state that the appeal law applies to, and all three are in DPS. Beacon is one of them. Another, the Luminary Learning Network, was renewed by the Denver school board last month.

The other zone, the Northeast Denver Innovation Zone, is regrouping after teachers at its largest school, Northfield High, voted to exit the zone in March. The board has not yet decided whether to renew the NDIZ zone or revoke it.

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AI

FROM PAGE 1

by the ingenuity of the AI system's answer. Put the eggs on the book, it said. Arrange the eggs in three rows with space between them. Make sure you don't crack them.

"Place the laptop on top of the eggs, with the screen facing down and the keyboard facing up," it wrote. "The laptop will fit snugly within the boundaries of the book and the eggs, and its flat and rigid surface will provide a stable platform for the next layer."

The clever suggestion made the researchers wonder whether they were witnessing a new kind of intelligence. In March, they published a 155-page research paper arguing that the system was a step toward artificial general intelligence, or AGI, which is shorthand for a machine that can do anything the human brain can do. The paper was published on an internet research repository.

Microsoft, the first major tech company to release a paper making such a bold claim, stirred one of the tech world's testiest debates: Is the industry building something akin to human intelligence? Or are some of the industry's brightest minds letting their imaginations get the best of them?

"I started off being very skeptical — and that evolved into a sense of frustration, annoyance, maybe even fear," said Peter Lee, who leads research at Microsoft. "You think: Where the heck is this coming from?"

Microsoft's research paper, provocatively called "Sparks of Artificial General Intelligence," goes to the heart of what technologists have been working toward — and fearing — for decades. If they build a machine that works like the human brain or even better, it could change the world. But it could also be dangerous.

And it could also be nonsense. Making AGI claims can be a reputation killer for computer scientists. What one researcher believes is a sign of intelligence can easily be explained away by another, and the debate often sounds more appropriate to a philosophy club than a computer lab. Last year, Google fired a researcher who claimed that a similar AI system was sentient, a step beyond what Microsoft has claimed. A sentient system would not just be intelligent. It would be

able to sense or feel what is happening in the world around it.

But some believe the industry has in the past year or so inched toward something that can't be explained away: a new AI system that is coming up with humanlike answers and ideas that weren't programmed into it.

Microsoft has reorganized parts of its research labs to include multiple groups dedicated to exploring the idea. One will be run by Sebastien Bubeck, who was the lead author on the Microsoft AGI paper.

About five years ago, companies like Google, Microsoft and OpenAI began building large language models, or LLMs. Those systems often spend months analyzing vast amounts of digital text, including books, Wikipedia articles and chat logs. By pinpointing patterns in that text, they learned to generate text of their own, including term papers, poetry and computer code. They can even carry on a conversation.

The technology the Microsoft researchers were working with, OpenAI's GPT-4, is considered the most powerful of those systems. Microsoft is a close partner of OpenAI and has invested \$13 billion in the San Francisco company.

The researchers included Bubeck, a 38-year-old French expatriate and former Princeton University professor. One of the first things he and his colleagues did was ask GPT-4 to write a mathematical proof showing that there were infinite prime numbers and do it in a way that rhymed.

The technology's poetic proof was so impressive — both mathematically and linguistically — that he found it hard to understand what he was chatting with.

"At that point, I was like: What is going on?" he said in March during a seminar at the Massachusetts Institute of Technology.

For several months, he and his colleagues documented complex behavior exhibited by the system and believed it demonstrated a "deep and flexible understanding" of human concepts and skills.

When people use GPT-4, they are "amazed at its ability to generate text," Lee said. "But it turns out to be way better at analyzing and synthesizing and evaluating and judging text than generating it."

When they asked the system to draw a unicorn using a programming language called TiKZ, it

instantly generated a program that could draw a unicorn. When they removed the stretch of code that drew the unicorn's horn and asked the system to modify the program so that it once again drew a unicorn, it did exactly that.

They asked it to write a program that took in a person's age, sex, weight, height and blood test results and judged whether they were at risk of diabetes. They asked it to write a letter of support for an electron as a U.S. presidential candidate, in the voice of Mahatma Gandhi, addressed to his wife. And they asked it to write a Socratic dialogue that explored the misuses and dangers of LLMs.

It did it all in a way that seemed to show an understanding of fields as disparate as politics, physics, history, computer science, medicine and philosophy while combining its knowledge.

"All of the things I thought it wouldn't be able to do? It was certainly able to do many of them — if not most of them," Bubeck said.

Some AI experts saw the Microsoft paper as an opportunistic effort to make big claims about a technology that no one quite understood. Researchers also argue that general intelligence requires a familiarity with the physical world, which GPT-4 in theory does not have.

"The 'Sparks of AGI' is an example of some of these big companies co-opting the research paper format into PR pitches," said Maarten Sap, a researcher and professor at Carnegie Mellon University. "They literally acknowledge in their paper's introduction that their approach is subjective and informal and may not satisfy the rigorous standards of scientific evaluation."

Bubeck and Lee said they were unsure how to describe the system's behavior and ultimately settled on "Sparks of AGI" because they thought it would capture the imagination of other researchers.

Because Microsoft researchers were testing an early version of GPT-4 that had not been fine-tuned to avoid hate speech, misinformation and other unwanted content, the claims made in the paper cannot be verified by outside experts. Microsoft says that the system available to the public is not as powerful as the version they tested.

There are times when systems like GPT-4 seem to mimic human reasoning, but there are also times when they seem terribly dense.

PAID ADVERTISEMENT

New Options for Denture Wearers & People Missing Teeth

One-Size-Fits-All Approach Not Always the Best

On a day to day basis, denture wearers and people missing teeth live with the embarrassment and frustration of a compromised smile. They're often forced to cope with significant pain while eating. They cover their mouths when they laugh. Many people are seeking seemingly quick and easy solutions to these problems from implant factories, which only offer "all-on-4" and snap-on dentures. In many cases, however, these are not the best solutions for restoring your dental health and the smile of your dreams.

In reality, when it comes to solving complex dental problems, every situation is different. Denture wearers are usually unhappy with their denture for one of these reasons: the way they look, the way they fit or the inability to chew and eat the foods they love. People without dentures, but that are missing teeth, may be unhappy because they also can't chew properly and are embarrassed by their smile.

When people seek their care at facilities that only offer "all-on-4," that's what they will get. In talking with Dr. Charles S. Barotz, who has been placing implants for over 25 years, he relates that "when it comes to the 'all-on-4' facilities, if all you

have is a hammer, everything looks like a nail." While this approach is correct for some patients, it is not appropriate for many others. Dr. Barotz continues, "when it comes to implant tooth replacement and anchored dentures, there is no clear choice. If you wish to renew your smile, "all-on-4" and anchored dentures are among many solutions to accomplish that, and there are many others as well."

For anyone considering implants to either lock in their dentures or replace missing teeth, it would be smart to visit a dentist with a full tool belt of solutions, so to speak. Dr. Barotz, who has been practicing in Denver for nearly 40 years, is one of the few dentists with the skills to offer a variety of solutions to complex problems, including "all-on-4" and anchored dentures. According to Dr. Barotz, complex dentistry done excellently is "not as simple as pulling every tooth and replacing with anchored dentures. All-on-4 is a good solution for some patients, but many people do not want all their teeth pulled." He continued, "most patients want to keep their natural teeth when possible. They may need some of their teeth extracted and replaced with implants, but they also may

want to save the teeth they can. This is entirely possible in many situations."

Furthermore, because implant factories see such a large volume of patients, they do not have the time to craft a custom, natural-looking smile that is unique to every individual, and many cosmetic aspects of smile restoration end up being ignored. It is a one-size-fits-all approach. Dr. Barotz states, "when you go to a dentist who is a true artist, they'll take into consideration your ethnicity, the color of your eyes, the color of your hair, your complexion and your facial features."

If you are frustrated with your dentures or have missing teeth and are considering dental implant therapy, Dr. Barotz' office in downtown Denver offers complimentary consultations where you can learn about the different solutions available to you. If you have visited an "all-on-4" facility already, you can meet with Dr. Barotz for a complimentary second opinion consultation to review your treatment plan and discuss alternatives. To learn more about these options, call 720-259-9959 or visit DenverDentist.com.

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