BUSINESS CASE STUDY:
The Dow Chemical Company

Company Overview

Sector: Manufacturing (chemicals)
Number of Employees: 54,000 people worldwide
Headquarters: Midland, Michigan
Revenues: $57 Billion

Initiative Overview: Partnership with the Michigan Health Improvement Alliance
Department: Corporate Health Services and Community and Government Relations
Geography: 14 counties in the central Michigan Region
Time Frame: 2007-present
Background

The Dow Chemical Company (Dow) portfolio of specialty chemical, advanced materials, agrosciences, and plastics businesses delivers a range of technology-based products and solutions to customers in approximately 180 countries and in sectors such as packaging, electronics, water, coatings, and agriculture. Dow’s more than 6,000 products are manufactured at 201 sites in 35 countries across the globe. Dow is headquartered in Midland, Michigan, also the site of its first manufacturing facility built in 1897.

Vision & Goals

- Dow recognizes that health of employees and dependents impacts employee engagement, talent attraction, and company reputation in communities where Dow has a manufacturing or administrative presence.
- The business focus at each manufacturing site is to identify and address the most relevant needs of the community while developing and fostering new relationships with key stakeholders. Through this process, Dow aims to synergize efforts to elevate community and employee health.

Extending Corporate Health Strategy

Dow has a leadership role in the Michigan Health Improvement Alliance (MiHIA), a multi-sectorial coalition and a U.S. Agency for Healthcare Research and Quality (AHRQ) Chartered Value Exchange to improve healthcare delivery in central Michigan. Dow also extends its Diabetes Prevention Program (DPP), offered to employees, to the larger community.

- **Workforce Health**: Dow aligns its community engagement efforts with the understanding that healthier communities impact the health of employees, and thereby their productivity, healthcare costs, engagement and job satisfaction, as measured by the Global Employee Opinion and Action Survey (GEOAS).
- **Sustainability**: Alongside its workforce health promotion efforts, Dow implements sustainability initiatives and encourages employee volunteerism as a part of its corporate social responsibility strategy.
- **Business Stakeholders**: U.S. Regional Health Directors, Public Affairs, Government Affairs, Human Resources Benefits & Compensation Leadership, Community Advisory Panels (CAP’s), Health Services US Prevention Team (on-site health facilities), and the Global Health Promotion Leader (responsible for corporate well-being and productivity management).

Community Choice Driven By:

- **Where Employees Live and Work**: Dow’s human resources department identifies counties where at least 20% of local site employees reside. Dow extends its corporate health strategy in those communities and supports local organizations with funding.
- **Community Perception**: Dow surveys individuals living around its plants to gauge both how the company is perceived in terms of improving local quality of life and what are important issues facing residents. One of the goals of the company’s community engagement efforts is to improve local perception.

Assessing Community Risk & Disease Burden

- **Objectives**: Develop action plans to address community needs identified in the perception survey, inform philanthropic initiatives, advise Dow leaders serving on Community Organization Boards, share information with Local Community Advisory Panels (CAPs), and inform the company’s health services staff whose goal is to improve employee health.
- **Deliverables**: For Dow’s largest sites, Dow collects and interprets community risk data based on public data sources described below. It generates a report for each community outlining the disease burden and how it compares to other counties in the state by quartile. The company then engages community partners to develop a
Community Success plan, an action plan to address those needs and those identified through the community perception survey.

Table 1: Data Collected in Community Risk and Disease Burden Assessment

<table>
<thead>
<tr>
<th>Source</th>
<th>Data</th>
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</thead>
<tbody>
<tr>
<td><strong>Health Outcomes</strong></td>
<td><strong>Clinical Care</strong></td>
</tr>
<tr>
<td>Robert Wood Johnson Foundation</td>
<td>• Premature death</td>
</tr>
<tr>
<td>County Health Rankings</td>
<td>• Poor or fair health</td>
</tr>
<tr>
<td>By county</td>
<td>• Poor physical health days</td>
</tr>
<tr>
<td></td>
<td>• Poor mental health days</td>
</tr>
<tr>
<td></td>
<td>• Low birth weight</td>
</tr>
<tr>
<td><strong>Healthy Behaviors</strong></td>
<td><strong>Social and Economic Factors</strong></td>
</tr>
<tr>
<td></td>
<td>• Adult smoking</td>
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<tr>
<td></td>
<td>• Adult obesity</td>
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<tr>
<td></td>
<td>• Physical inactivity</td>
</tr>
<tr>
<td></td>
<td>• Excessive drinking</td>
</tr>
<tr>
<td></td>
<td>• Motor vehicle death rate</td>
</tr>
<tr>
<td></td>
<td>• Sexually transmitted infections</td>
</tr>
<tr>
<td></td>
<td>• Teen birth rate</td>
</tr>
<tr>
<td><strong>Physical Environment</strong></td>
<td><strong>Well-BeingIndex.com</strong></td>
</tr>
<tr>
<td></td>
<td>• Daily fine particulate matter</td>
</tr>
<tr>
<td></td>
<td>• Drinking water safety</td>
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<tr>
<td></td>
<td>• Access to recreational facilities</td>
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<tr>
<td></td>
<td>• Limited access to healthy foods</td>
</tr>
<tr>
<td></td>
<td>• Fast food restaurants</td>
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<tr>
<td><strong>Well-BeingIndex.com</strong></td>
<td><strong>Life Evaluation</strong>: includes a self-evaluation of two items (present life situation and anticipated life situation five years from now) using the Cantril Self-Anchoring Striving Scale with steps from 0 to 10, where &quot;0&quot; represents the worst possible life and &quot;10&quot; represents the best possible life. Taken together, respondents are then classified as &quot;thriving,&quot; &quot;struggling,&quot; or &quot;suffering,&quot; with &quot;thriving&quot; respondents evaluating their current state as a &quot;7&quot; or higher and their future state as a &quot;8&quot; or higher, while &quot;suffering&quot; respondents provide a &quot;4&quot; or lower to both evaluations</td>
</tr>
<tr>
<td>By Congressional District</td>
<td><strong>Emotional Health</strong>: self-reported happiness, anger, being treated with respect, worry, stress, and learning or doing something interesting</td>
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<td></td>
<td><strong>Physical Health</strong>: includes sick days, feeling well-rested, disease burden, obesity, energy, and colds</td>
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<td></td>
<td><strong>Healthy Behavior</strong>: includes smoking, weekly consumption of fruits and vegetables, eating healthy, weekly exercise frequency</td>
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<td><strong>Work Environment</strong>: job satisfaction, supervisor’s treatment, ability to use one’s strengths at work</td>
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<td></td>
<td><strong>Basic Access</strong>: satisfaction with community or area, clean water, safe place to exercise, feel safe walking alone at night, etc.</td>
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Beyond the Four Walls
Why Community is Critical to Workforce Health

[Table 1 Continued]

<table>
<thead>
<tr>
<th>Source</th>
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<tr>
<td>The Commonwealth Fund Scorecard</td>
<td>Access (%)</td>
</tr>
</tbody>
</table>
| By hospital referral region, which represents regional health care markets for tertiary medical care that generally requires the services of a major referral center. | - Adults ages 18-64 insured  
- Children ages 0-17 insured  
- Adults reported no cost-related problem seeing a doctor when needed within the past year  
- At-risk adults visited a doctor for routine checkup in the past two years  
- Adults visited a dentist, dental hygienist, or dental clinic within the past year |
| Prevention & Treatment (%)                 | - Adults with a usual source of care  
- Adults age 50 and older received recommended screening and preventive care  
- Adult diabetics received recommended preventive care  
- Patients hospitalized for heart failure received recommended care  
- Surgical patients received appropriate care to prevent complications  
- Medicare dependents with a diagnosis of cancer without any hospice or who enrolled in hospice during the last three days of life |
| Potentially Avoidable Hospital Use - Medicare only | - Hospital admissions among Medicare beneficiaries for ambulatory care-sensitive conditions, per 100,000 beneficiaries  
- Readmissions within 30 days of discharge as percent of all admissions among Medicare beneficiaries  
- Potentially avoidable emergency department visits among Medicare beneficiaries, per 1,000 beneficiaries |
| Healthy Lives                               | - Potentially preventable mortality, deaths per 100,000 population  
- Breast cancer deaths per 100,000 female population  
- Colorectal cancer deaths per 100,000 population  
- Infant mortality, deaths per 1,000 live births  
- Suicide deaths per 100,000 population  
- Percent of adults who smoke  
- Percent of adults ages 18-64 who are obese (BMI >= 30)  
- Percent of adults ages 18-64 report fair/poor health, 14 or more bad mental health days, or activity limitations |
| WhyNotTheBest.org                           | Includes process-of-care measures, patient satisfaction measures (from the Hospital Consumer Assessment of Healthcare Providers and Systems), readmission rates, mortality rates, and average reimbursement rates  
- All of these performance measures are publicly reported on the Centers for Medicare and Medicaid Services Web site, Hospital Compare, and include data from nearly all U.S. hospitals |
| By hospital                                 | - Which program and policy interventions have been proven effective?  
- Are there effective interventions that are right for my community?  
- What might effective interventions cost; what is the likely return on investment? |
Beyond the Four Walls
Why Community is Critical to Workforce Health

[Table 1 Continued]

<table>
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</table>
| Leap Frog Group                       | • The Hospital Safety Score encourages hospitals to comply with nationally recognized standards of safe care practices in an effort to reduce harm and promote safety for patients
• The Hospital Safety Score is an A, B, C, D, or F letter grade reflecting how safe hospitals are for patients |
| By hospital                           | Community Perception Surveys¹                                                                                         Respondents are asked the following:
• Cite three issues facing residents of their community. The question is open-ended, and typically includes responses in environmental, educational, economic, and municipal domains
• Rate their overall impression of Dow, using a scale of one to seven, where one means not at all favorable, four means favorable, and seven means completely favorable on the following critical measures:
  o Employees take part in the community
  o Manages its operations safely
  o Managers are actively involved
  o Is a Good Citizen
  o Contributes to Economic Prosperity
  o Invests in the Future
  o Being a Good Neighbor
  o Produces Products of Value to Society
  o Informs about Operations
  o Informs Community about its Efforts
  o Responsible/Sensitive to community concerns
  o Responsible Practices to safeguard health
  o Generally open and honest
• Whether their opinion of Dow has improved, worsened or remained the same in the past twelve months |

Program Planning & Implementation

• Criteria for Prioritizing Interventions
  o Dow identifies potential evidence-based interventions to address health issues corresponding with the greatest local risk/burden of disease, identified by the needs assessment process using external data sources.
  o The company surveys the community to see which issues the community perceives as high need and high priority for action.
  o Dow examines both its own analysis of publicly available data and the feedback it receives from community perception surveys.

¹http://msdssearch.dow.com/PublishedLiteratureDOWCOM/dh_0035/0901b80380035c2b.pdf
Criteria for Selecting Interventions: Based on its own analysis and the community’s feedback, Dow decides which intervention to implement based on the following criteria: the population affected, number of people affected, greatest opportunities for improvement, expected effects, time required to meet goals, its own lessons learned from past efforts, and potential barriers to success. Dow also determines what programs to take part in considering its level of expertise on the given subject and the resources and financial support required to undertake the project.

The Dow Chemical Company and Dow Corning Corporation (a joint-venture with Dow Chemical) Play a Role in Program Implementation.

- The company consults its human resources department to identify employees eligible for DPP, and supports local organizations’ outreach efforts to recruit Dow employees as participants for the DPP. For example, the MiHIA partners with Viridian Health Management for the design and implementation of the MiHIA Diabetes Prevention Program (MiHIA DPP) project.
- Establishes referral linkages for ongoing patient care for DPP participants.
- Acts as a site for DPP to take place.
- Trains existing personnel.
- Donates or contributes HgA1c tests for DPP participants at wholesale.

Program Reach

- Employees: Engaged through skill-based volunteering, the company’s wellness program, and community-based volunteer efforts (with organizations such as Habitat for Humanity). Dow has 58 manufacturing facilities and about 24,000 employees in 22 states, in addition to its global locations. In its Michigan operations, more than 15% of its employees volunteer annually.²

- Dependents/Families: Retirees and the dependents of current employees are reached via Dow-sponsored community-based DPPs and are provided with health education materials on the risks associated with tobacco use, inactivity, obesity and stress.

- Broader Community: Near its largest manufacturing site in Midland, Michigan, Dow extends its sponsorship of the DPP to the broader community and partners with the Michigan Health Information Alliance to improve healthcare delivery in the Great Lakes Bay Region, Harbor Beach, Hillsdale, and Auburn Hills.

Engaging Community Stakeholders

- Types of Stakeholders Engaged: Health coalitions, city and county government entities, hospitals, religious organizations, health value exchanges, public health departments, United Ways and other non-profit organizations.
  - Examples of stakeholders near Michigan plant, in partnership with MiHIA: Economic development directors, county medical societies, regional public health directors, executive leadership of health systems, regional colleges and universities – including colleges of health professions, civic leaders, chamber of commerce, employers, collaborative health councils, regional health related non-profits, community mental health system, payers, Federal Qualified Health Plan, Physician organizations, individual physician leaders, 211, social service agencies.

- Community Advisory Panels (CAP): These groups are made up of selected Dow leaders and approximately 20 community leaders for the purposes of conducting ongoing and open communication regarding Dow’s operations, safety programs, environmental conditions, community interactions, and other aspects of the plant.
that might be of interest to the community. CAPs are active in many of the communities where Dow has operations, and meet 9 times a year.³

- **Creating a Community Success Plan**: After surveying the community about its perception of the role of Dow in the community, the company creates a “community success” plan alongside Dow site leadership (employees) and community stakeholders.

**Resource Allocation**

**Table 2**: Resources Allocated to Midland Michigan Community Health Promotion Efforts

<table>
<thead>
<tr>
<th></th>
<th>Funding</th>
<th>Human Resources</th>
<th>Strategic Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dow Chemical</strong></td>
<td>Funding to extend DPP and or other Michigan initiatives such as MiHIA</td>
<td>- Employees at Dow’s headquarters conduct community needs assessments, identify partners, develop those relationships, and monitor progress in community perception via surveys</td>
<td>- The company’s sustainability team communicates with the health strategy team on a regular basis to synergize their work at sites engaging local communities. For example, the community and public affairs team maintains a close relationship with the employee health services Team</td>
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<tr>
<td></td>
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<td>- Catherine Baase, the Global Director of Health Services for The Dow Chemical Company, also serves as the chairperson of the MiHIA board of directors</td>
<td>- Dow developed a Community Success Process Guide and instructional video to guide its sites to implement a Community Success process, which is available through their intranet to employees</td>
</tr>
<tr>
<td><strong>Community Partners (MiHIA)</strong></td>
<td>A $232,000 grant from the Charles J. Strosacker Foundation to support the Diabetes Prevention Program</td>
<td>- 16-weekly core sessions followed by 8-monthly post-core sessions for participants in the DPP</td>
<td>- 28 organizations partner to improve population health as part of MiHIA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Trained “DPP Lifestyle Coaches” work with participants throughout the duration of the course and follow up</td>
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</tbody>
</table>

Evaluation Framework

Table 3: Process and Outcome Data

<table>
<thead>
<tr>
<th>Needs Assessment</th>
<th>Process</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data Collected by Community Partners: Community Impact</strong></td>
<td>MiHIA collects the following process data:</td>
<td>MiHIA projected annual savings of $2,059,000 (less program costs) to impact the three counties whose residents (500) receive the DPP, Robert Wood Johnson Foundation county health ranking overall, and performance on metrics identified in needs assessment. Any improvements in quality of care using Commonwealth Fund benchmarks, such as increased access to care through insurance coverage, routine checkups, etc. as tracked by MiHIA</td>
</tr>
<tr>
<td>Dow establishes short and long term health-related targets mutually agreed upon with community partners. Local partners collect data on disease risk/burden in addition to what is included in Dow’s needs assessment. For example, the MiHIA examines CDC BRFSS data on a variety of metrics. Partners secure additional funding for MiHIA initiatives.</td>
<td>• Progress on DPP implementation in 3 Michigan counties near Dow’s headquarters, launching in April 2015 • The number of diabetes screenings • Weight loss as percentage of initial body weight of participants • Minutes of physical activity per week of senior participants in the Together We Can Initiative • Number of employers and healthcare providers reached by Choosing Wisely</td>
<td></td>
</tr>
<tr>
<td><strong>Data Collected by Dow: Business Impact</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dow measures community perception through its Communities Contributing to Success Survey (described in assessing community risk &amp; disease burden section above) at baseline and follow up every 10 years.</td>
<td>• Total healthcare expenditures associated with treating chronic disease • Implementation progress of community success plans in 10 locations globally in 2015 (5% of Dow manufacturing sites representing 70% of company output) • Extent of employee membership on community advisory panels • Volunteer hours completed • Communications support for increased consumer awareness on preventive screening and effective medical consumerism, such as the Patient Activation Measure adoption and &quot;Questions are the Answer&quot; media campaign in Midland, MI • Extent of resources available through insurance coverage for making decisions about choosing quality providers • Engagement in the dialogue led by MiHIA around enhancing integrated technology for data systems to share medical data • Ongoing support of implementation of community based preventive services and enhancement of linkages with clinical care by referring employees to the Diabetes Prevention Program</td>
<td>• Improved quality of life, measured by self-report surveys of communities in which Dow operates • The Global Employee Opinion and Action Survey (GEOAS) measures employee attitudes on important topics of engagement, satisfaction and commitment, and monitors perceptions about key strategic themes important to the company • Improved health of employees, families and retirees • Effective and efficient management of health-related costs of Dow Employees • Improved health-related performance of current Dow employees • Reduced health care costs and absenteeism of current Dow employees • Percentage of sites where Dow has a major presence that achieved their target community acceptance ratings</td>
</tr>
</tbody>
</table>
Impact

Community Impact, in Collaboration with MiHIA

- 38 employers, 795,980 consumers, and 1,700 Physicians, prescribers, and health professionals reached by Choosing Wisely campaign
- 30 Minutes of daily physical activity provided for 16,668 seniors through the Together We Can (TWC) initiative
- Since inception in 2007, 10 out of 14 MiHIA counties have elevated their rank in the county health rankings (in comparison to health outcomes of other state counties)

Table 4: Improved Self-Reported Quality of Life in 5 Communities As a Result of Dow’s Community Engagement Efforts

<table>
<thead>
<tr>
<th>Community</th>
<th>% Increase from Baseline 2007-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freeport, Texas</td>
<td>10%</td>
</tr>
<tr>
<td>Midland, Michigan</td>
<td>11%</td>
</tr>
<tr>
<td>Plaquemine, Louisiana</td>
<td>5%</td>
</tr>
<tr>
<td>Pittsburg, California</td>
<td>10%</td>
</tr>
<tr>
<td>St. Charles, Louisiana</td>
<td>6%</td>
</tr>
</tbody>
</table>

Business Impact

- Dow’s 10 largest sites have community engagement plans in place, along with many other small sites.
- In 2013, Dow spent $4.8 million less in U.S. health care costs than it would have had it experienced the industry average. Since 2004, it has seen a more than 15% increase in the percentage of its employee population at low risk for high BMI, insufficient physical activity and tobacco use and a 28% decrease in the employee population at high risk for these risk factors.
- A 2012 study conducted by Towers Watson comparing Dow’s population to peer companies adjusted for demographics and other variables found that Dow’s covered U.S. lives had a 9% better health risk profile than did populations of comparable employers and the prevalence of chronic conditions was 17% lower than in other companies, although Dow spent 17% less on chronic conditions.
- 100% of Dow’s largest sites (10 sites) improved their community acceptance ratings compared to baseline measurements.

Community Impact in Development

The DPP launching in April 2015 expects to serve 500 people, reduce participant rate of developing Type 2 Diabetes by 58%, and save over $2 million (for the three counties whose residents (500) receive the diabetes prevention program) over the duration of the program by the elimination of missed work days, avoidance of blood pressure and cholesterol medications, reduced hospital stays and savings in regional healthcare costs.

This case study was adopted from a semi-structured qualitative interview and publicly available information. To learn more about the link between workforce and community health and the strategies businesses are implementing to invest in community health, read the Vitality Institute’s report “Beyond the Four Walls: Why Community is Critical to Workforce Health.”

To access the report and additional case studies, visit www.thevitalityinstitute.org/communityhealth or look us up on social media @VitalityInst #Beyond4Walls.