
Dow Entrepreneurial Network (DEN): *A Presidential Initiative to Catalyze Physician-Led Innovation and Leadership Among Dowites*

Ehsan, A¹., Rao, S²

¹Corresponding Author: Aamir Ehsan, MD, President 2025, DOGANA, 7 Grand Terrace, San Antonio, Texas, USA. Email: aamirehsan@aol.com

²Sohail Rao, MD, MA, DPhil. HBond Foundation, 6918 Camp Bullis Road, San Antonio, Texas, USA. Email: srao@hbond.org

ABSTRACT

Background: Physician leadership and entrepreneurship are increasingly recognized as essential for transforming health systems, yet most medical training still prioritizes individual clinical competence over system thinking, innovation, and venture creation. Diaspora alumni associations represent an underused platform for cultivating these capabilities at scale.

Objective: This narrative review describes the design and early implementation of the Dow Entrepreneurial Network (DEN), a 2025 presidential initiative of the Dow Graduates Association of North America (DOGANA). DEN aims to connect alumni and students at Dow Medical College and Dow International Medical College (Dowites) who are interested in entrepreneurship and leadership through a structured series of virtual and in-person events, mentorship, and peer networking.

Methods: We synthesized internal planning documents and program descriptions for the DEN activities in 2025 and interpreted them in light of published literature on physician leadership development and entrepreneurship education in medicine. The analysis focuses on program aims, structure, educational strategies, and anticipated benefits for participants and the wider Dow community.

Results: DEN is organized around four core objectives: (1) fostering a global network of Dow alumni entrepreneurs; (2) providing a forum for dialogue on innovation, business models, and physician-led ventures; (3) educating students and alumni about entrepreneurial pathways; and (4) exploring programs that create jobs and opportunities for Dowites in North America, Pakistan, and globally. The initial implementation in 2025 includes a three-part virtual webinar series showcasing Dow alumni founders across clinical and non-clinical sectors, and an in-person DEN session at the DOGANA 2025 annual retreat featuring a health-system CEO as the keynote speaker. These activities are explicitly framed as a voluntary, non-commercial alumni platform with clear disclaimers regarding legal and financial liability.

Discussion: DEN aligns closely with evidence that structured leadership and innovation programs improve physicians' self-efficacy, broaden career trajectories, and can contribute to organizational performance when embedded in supportive ecosystems. By leveraging the Dow diaspora and DOGANA's organizational infrastructure, DEN offers a low-cost, scalable model for seeding entrepreneurial mindsets, strengthening

professional networks, and creating bidirectional pipelines between North American and Pakistan-based initiatives.

Conclusion: DEN illustrates how an alumni-led initiative can operationalize physician entrepreneurship and leadership development without creating new degree programs or corporate structures. Future work should evaluate DEN's impact on participant behavior, venture creation, and contributions to health and social outcomes.

KEYWORDS: *Entrepreneurship, Physician Leadership, Alumni Networks, Innovation, Medical Education, Dow Medical College, Dow International Medical College, DUHS, Dow University of Health Sciences, Dow Graduates Association of North America, DOGANA, Dowites*

INTRODUCTION

Health systems worldwide increasingly depend on clinicians who can lead teams, redesign care pathways, and translate innovations into practice. Systematic reviews show that leadership development programs for physicians are associated with improved self-assessed competencies and, in some cases, better organizational outcomes (Debets *et al.*, 2023; Frich *et al.*, 2015; Lyons *et al.*, 2021; Phillipson *et al.*, 2025).

At the same time, a growing body of work highlights the importance of innovation and entrepreneurship education for medical students and trainees. Traditional curricula rarely address commercialization, digital health, or new care delivery models, whereas dedicated innovation tracks, electives, and co-curricular initiatives have been linked to improvements in creativity, opportunity recognition, and confidence in pursuing non-traditional careers (Niccum *et al.*, 2017; Pan *et al.*, 2025; Preiksaitis *et al.*, 2023; Wu *et al.*, 2025; You *et al.*, 2024).

Medical entrepreneurship encompasses activities such as founding health-technology start-ups, building novel service lines, creating social enterprises, and leading intrapreneurial initiatives within hospitals or academic centers. Qualitative and survey-based studies suggest that physicians who pursue entrepreneurial paths are motivated by perceived gaps in care, a desire for autonomy, and opportunities to scale impact, but they frequently

report limited business training, risk-sharing mentorship, and supportive networks (Hoang *et al.*, 2023; Yashiro *et al.*, 2021).

Alumni and professional networks offer a complementary route for the development of leadership and entrepreneurship. When deliberately structured, alumni platforms can support mentoring, knowledge exchange, and co-founder matching, while also serving as vehicles for the diffusion of innovation and cross-border collaboration (AlumnForce, 2022). Yet relatively few reports describe alumni-driven entrepreneurial ecosystems within international medical graduate communities.

Dow Medical College (DMC) and Dow International Medical College (DIMC), the two constituent medical colleges of Dow University of Health Sciences (DUHS), have produced thousands of physicians practicing in Pakistan, North America, and globally. DOGANA provides an existing infrastructure for continuing education, philanthropy, and alumni engagement. In 2025, DOGANA leadership launched DEN as a presidential initiative to intentionally harness the entrepreneurial energy of Dow alumni and students, as evidenced by the inaugural DEN session and subsequent webinars.

The purpose of this manuscript is to (1) describe the rationale, design, and early implementation of DEN; (2) situate the initiative within the broader literature on physician leadership and entrepreneurship; and

(3) outline anticipated benefits and evaluation priorities for similar alumni-based networks.

METHODS:

Study Design

This work is a narrative, program-description review rather than a formal evaluation study. The primary aim is to document DEN's conceptual foundations, organizational structure, and early activities as a case example of an alumni-based entrepreneurial network in medicine. The focus is on describing what DEN is, how it has been implemented to date, and how its design aligns with existing evidence on physician leadership and entrepreneurship, rather than on measuring outcomes quantitatively at this stage.

Data Sources

Data for this review were drawn from three primary sources. First, we examined the DEN-organized events in 2025. These included the inaugural session in the DOGANA 2025 Annual Retreat in Chicago on May 17th, 2025, which featured a health-system CEO speaking on physician leadership and innovation (Figure 1), as well as webinars held in subsequent months. The latter webinars each highlighted Dow alumni entrepreneurs across diverse sectors, including clinical practice, digital health, research and innovation, fashion and design, and global health. Collectively, these occurrences provided core descriptive information on event themes, panelists, moderators, timing, and target audiences.

Second, we reviewed published literature on leadership and entrepreneurship in medicine. Targeted searches in PubMed and Google Scholar were used to identify systematic reviews, empirical studies, and conceptual papers related to physician leadership development, innovation, and entrepreneurship education in medical training, alumni networks, and diaspora engagement (e.g., Debets *et al.*, 2023; Frich *et al.*, 2015; Niccum *et al.*, 2017; Wu *et al.*, 2025; You *et al.*, 2024; AlumnForce, 2022). These sources provided the

broader conceptual and evidentiary context for situating DEN.

Figure 1: Dow Entrepreneurial Network Inaugural Session: Delivering Excellence: From the ICU to the Boardroom.

Dow Graduates Association of North America

DOW ENTREPRENEURIAL NETWORK (DEN)

A DOGANA 2025 Presidential Initiative

Connecting Minds, Creating Leaders!

Delivering Excellence: From the ICU to the Boardroom

SPEAKER

Dr. Omar B. Lateef
President and CEO, Rush University System for Health
CEO, Rush University Medical Center

Dr. Omar B. Lateef is the President and CEO of Rush University System for Health and CEO of Rush University Medical Center. A nationally recognized leader in academic medicine, he is known for pioneering efforts in quality improvement, patient safety, and digital transformation. Board-certified in pulmonary and critical care medicine, Dr. Lateef has guided Rush through historic challenges, including the COVID-19 pandemic, with a focus on resilience, transparency, and health equity. Under his leadership, Rush has consistently ranked among the top hospitals in the nation for quality and innovation. Dr. Lateef is a vocal advocate for integrating artificial intelligence and data science into patient care to improve outcomes and streamline clinical operations.

Learn more about speaker: <https://www.rush.edu/about-us/system-leadership/dr-omar-b-lateef>

OBJECTIVES:

- To share leadership insights gained from guiding Rush University Medical Center through complex healthcare challenges.
- To explore the role of innovation and digital transformation—particularly artificial intelligence and data analytics—in improving clinical outcomes and system efficiency.
- To discuss strategies for building resilient, equitable health systems that prioritize quality, safety, and access.
- To illustrate how academic medical centers can drive change through interdisciplinary collaboration, adaptive leadership, and patient-centered care.
- To inspire current and future healthcare leaders to embrace disruption, challenge traditional models, and lead with integrity and compassion.

MODERATOR

Sahali Rao, MD, MA, DPhil
Chair, Communication and Publication Committee
DOGANA 2025

Learn More and Get Involved!

www.dogana.org
info@dogana.org

Aamir Ehsan, MD
President DOGANA 2025

Third, we incorporated relevant conceptual frameworks and commentaries. Additional commentaries and thought pieces on physician entrepreneurship, diaspora engagement, and alumni networks were reviewed to contextualize DEN within broader trends in global health and professional networking (Hoang *et al.*, 2023; Yashiro *et al.*, 2021). These materials helped interpret DEN not only as a set of events, but as part of a larger movement toward clinician-led innovation supported by diaspora and alumni structures.

Analytic Strategy

A descriptive, thematic approach was used to synthesize the information. Content from the published DEN events, empirical literature, and conceptual pieces was reviewed and coded across several recurring domains: program goals and objectives; target populations and governance structures; educational content and modalities; the framing of entrepreneurship and leadership; and anticipated benefits and risks.

These domains were then mapped to key findings from the leadership and entrepreneurship literature, including characteristics of effective leadership development programs and documented outcomes of innovation and entrepreneurship initiatives in medical education (Debets *et al.*, 2023; Niccum *et al.*, 2017; Wu *et al.*, 2025). This mapping allowed us to identify areas of alignment between DEN's design and existing evidence, as well as gaps and future opportunities. Because DEN is still in early implementation, no quantitative participation or outcome data were available, and no formal statistical analyses were undertaken.

RESULTS:

Program Rationale and Objectives

DEN arises from recognition that many Dow alumni and students are already engaged in entrepreneurial ventures or aspire to do so, but lack a shared platform for mentorship, collaboration, and structured learning. Across the 2025 events, DEN is consistently presented as a DOGANA 2025 presidential initiative designed to “connect minds” and “create leaders” by equipping alumni and students with insights, frameworks, and networks that translate clinical experience into scalable ventures (Figures 1-4). Within this framing, four overarching objectives emerge from the program descriptions. First, DEN seeks to foster a strong entrepreneurial network that links established Dow alumni entrepreneurs with students and early-career physicians. Second, it aims to provide a forum for

dialogue and support around existing and emerging ventures, including discussion of opportunities, challenges, and lessons learned. Third, DEN aspires to educate and inspire future healthcare entrepreneurs by highlighting real-world pathways from clinical training to diverse entrepreneurial roles. Finally, it seeks to explore programs that create jobs and opportunities for Dowites in North America, Pakistan, and globally, including potential pipelines for internships, fellowships, and co-founded ventures. Participation is voluntary; the December event explicitly notes that the series aims to offer “practical playbooks, clear paths to funding and pilots, and lessons from founders who’ve done it,” underscoring the educational rather than commercial nature of the initiative (Figure 4).

Governance and Target Population

DEN is framed as a 2025 DOGANA presidential initiative, which provides leadership visibility, institutional backing, and direct access to the association's communication channels. The events organized by DEN serve a broad target audience, including Dow alumni and friends, residents, fellows, and medical students interested in entrepreneurship, leadership, innovation, and career diversification. Operationally, DEN events feature a consistent team of moderators. These Dow graduates with backgrounds in medical education, research, digital health, and diagnostics provide continuity of tone and structure across sessions. The panels themselves rotate, bringing in Dowite entrepreneurs and leaders from multiple specialties, practice settings, and geographies, thereby exposing participants to a wide range of entrepreneurial trajectories and contexts.

Educational Content and Modalities

The educational content of DEN's early activities is delivered through a blend of in-person and virtual formats, designed to be accessible to a geographically dispersed alumni community while maintaining depth and interactivity.

At the DOGANA 2025 annual retreat in Chicago, DEN hosted an in-person flagship session titled “*Delivering Excellence: From the ICU to the Boardroom*” featuring the president and CEO of a major academic medical center (Figure 1). The session’s objectives include sharing leadership insights gained from guiding a university medical center through complex challenges; exploring the role of innovation and digital transformation particularly data and artificial intelligence in improving clinical outcomes; discussing strategies for building resilient, equitable health systems that prioritize quality, safety, and access; and inspiring current and future healthcare leaders to embrace disruption while leading with integrity and compassion. These aims mirror evidence from leadership-development literature that emphasizes experiential learning, systems thinking, and alignment with real organizational challenges as hallmarks of effective programs (Frich *et al.*, 2015; Lyons *et al.*, 2021; Phillipson *et al.*, 2025).

Complementing the in-person session, the three-part virtual webinar series held in October, November, and December 2025 uses moderated panel discussions with Dow alumni who have founded or led ventures in emergency medicine, hospital leadership, health-technology platforms, research and innovation, diagnostics, fashion and design businesses, and global health initiatives. The October 5, 2025, webinar featured a panel of physician leaders in community health systems, anesthesiology and critical-care research, and lifestyle/digital health, with the stated aim of “connecting minds” and “creating leaders” among Dowites (Figure 2). The November 16, 2025, webinar highlighted entrepreneurs in pathology diagnostics, hospital leadership, and international diplomacy, emphasizing physicians’ entrepreneurial journeys and lessons in building organizations (Figure 3). The December 14, 2025, session, titled “*Healing, Leading, Innovating: Physicians’ Entrepreneurial Journey*,” focused on transforming clinical insights into scalable ventures, including clear pathways to funding, pilots, and collaborations (Figure 4).

Figure 2: Dow Entrepreneurial Network Session 2: Reimagining Care Models: Dowite Leaders at the Intersection of Medicine and Innovation

DOW ENTREPRENEURIAL NETWORK (DEN)
A DOGANA 2025 Presidential Initiative
Dr. Aamir Ehsan – President 2025
Connecting Minds, Creating Leaders!

PANELIST

October 5, 2025
1 PM EST / Noon CST
10 AM PST / 10 PM PKT

MODERATORS

DR. KHALID SIDDIQUI
Chief Medical Officer
Altus Community Health
President Austin Emergency Physicians

HINA FAISAL, MD, MBBS, MS, MRCS
Anesthesiologist | Surgical Intensivist-Scientist
Director, Surgery Critical Care Research,
Houston Methodist Hospital
Founder, ReCognitionVR Software

M. ILYAS YAMANI, MD, MMM, MCSC
Chief Medical Officer,
Lifestyle Prescription University,
Co-Founder, Dawn Health,
Founder and Managing Director,
Allcare Medical consultants, FI

AIMAN TOHID, MD, MPH
Residency: Keck Medicine
School of USC
Medical Director Makom
Clinic, Rockville, MD

ADEEL AHMAD, MD, MBA, FCAP
Managing Partner, Advantage Health
Co-Founder, DXPath.AI &
MedRevSystems

Zoom link : <https://bit.ly/register>

Sponsored by: Wall Street Alliance Group

Learn More and Get Involved! www.dogana.org info@dogana.org

Across all sessions, panels are moderated by Dow graduates with experience in psychiatry, digital health, and diagnostics, who guide discussions on problem identification, team formation, capital, regulatory issues, and the balance between clinical work and entrepreneurship. This format aligns with evidence that exposure to near-peer and senior entrepreneurial role models can enhance entrepreneurial self-efficacy and intent among clinicians and trainees (Hoang *et al.*, 2023; Niccum *et al.*, 2017; Wu *et al.*, 2025).

Figure 3: Dow Entrepreneurial Network Session 3: Leading Beyond Borders: Dow Physicians as Builders of Systems and Societies.

DOW ENTREPRENEURIAL NETWORK (DEN)
DOGANA Presidential Initiative
By Dr. Aamir Ehsan - President DOGANA 2025
Healing, Leading, Innovating: Physicians Entrepreneurial Journey

Our objective is to equip Dow alumni and friends to turn clinical insight into scalable ventures by delivering practical playbooks, clear paths to funding and pilots, and lessons from founders who've done it. The session will connect clinician-innovators with mentors, investors, and operators; teach actionable frameworks for problem validation, business models, and regulatory/clinical pathways; and catalyze collaborations across DOGANA and Dowites.

PANELIST

November 16, 2025
12 Noon EST / 11 AM CST
10 AM PST / 10 PM PKT

MODERATORS

AIMAN TOHID, MD, MPH
Residency: Keck Medicine School of USC
Medical Director Makom Clinic, Rockville, MD

ADEEL AHMAD, MD, MBA, FCAP
Managing Partner, Advantage Health
Co-Founder, Medocs.AI & DXPath.AI

DR. M. NASAR QURESHI
Founder
QDx Pathology Services
President & Chief Medical Officer 2006-2024

DR. NADIA ZIA
Vice President & Chief Medical Officer
Barnes Jewish St Peter's & Progress West Hospitals
BJC HealthCare

DR. SHAHZAD ARSHAD
Hon Consul of The Kingdom of Lesotho; Life member SAARC, CACCI and FPCCI.
F. Chairman- PCFAMEA

REGISTRATION
Zoom link : <https://bit.ly/den-network> Register in advance for this webinar using the link below or Scan QR code

After registering, you will receive a confirmation email containing information about joining the webinar.

Learn More and Get Involved!
www.dogana.org info@dogana.org

Anticipated Benefits for Participants and the Dow Community

Based on DEN's design and insights from the broader literature, several anticipated benefits can be articulated for both individual participants and the wider Dow community. First, DEN is expected to enhance leadership and entrepreneurial self-efficacy. By exposing participants to role models, narratives of both success and failure, and structured discussions of concrete tools such as business models, customer discovery, and regulatory strategies, the program is likely to strengthen confidence in pursuing leadership roles and

ventures. Innovation and entrepreneurship tracks in medical schools have reported increases in perceived skills and intent to innovate following similar experiences (Niccum *et al.*, 2017; Pan *et al.*, 2025; Wu *et al.*, 2025; You *et al.*, 2024).

Figure 4: Dow Entrepreneurial Network Session 4: Healing, Leading, Creating: Dow Alumni at the Edge of Innovation.

DOW ENTREPRENEURIAL NETWORK (DEN)
DOGANA Presidential Initiative
By Dr. Aamir Ehsan - President DOGANA 2025
Healing, Leading, Innovating: Physicians Entrepreneurial Journey

Our objective is to equip Dow alumni and friends to turn clinical insight into scalable ventures by delivering practical playbooks, clear paths to funding and pilots, and lessons from founders who've done it. The session will connect clinician-innovators with mentors, investors, and operators; teach actionable frameworks for problem validation, business models, and regulatory/clinical pathways; and catalyze collaborations across DOGANA and Dowites.

PANELISTS

Sunday, December 14, 2025
1 PM EST / Noon CST
10 AM PST / 11 PM PKT
9 PM Qatar Time

MODERATORS

AIMAN TOHID, MD, MPH
Residency: Keck Medicine School of USC
Medical Director Makom Clinic, Rockville, MD

DR. S RAFE ZAIDI
Family Medicine Physician
Managing Medical Director for Multispecialty at OSF HealthCare in Illinois

SOHAIL RAO, MD, MA, DPHIL
President & CEO, INNOVACORE, Center for Research & Biotechnology

DR SOHAILA CHEEMA
Assistant Dean for the Institute for Population Health
Associate Professor of Clinical Population Health Sciences
Weill Cornell Medicine - Qatar

DR AHMAD HAROON
Bridal Designer
Karachi, Pakistan.

REGISTRATION
Zoom link : <https://bit.ly/den-dec14> Register in advance for this webinar using the link below or Scan QR code

After registering, you will receive a confirmation email containing information about joining the webinar.

Learn More and Get Involved!
www.dogana.org info@dogana.org

Second, the networked structure of DEN is likely to expand professional and mentoring relationships. Because the initiative connects students and early-career clinicians in Karachi with alumni in North America, Europe, and worldwide, it can serve as a cross-cohort, cross-geographic platform for opportunity sharing, co-founder matching, and knowledge diffusion. Evidence from other settings suggests that alumni networks can play a catalytic

role in building innovation ecosystems through precisely these mechanisms (AlumnForce, 2022).

Third, DEN has the potential to facilitate bidirectional flows of knowledge and resources between North America and Pakistan. By intentionally including entrepreneurs based in Pakistan and the Dow diaspora, the initiative can support collaborations on clinical trials, digital-health pilots, and social enterprises that address local health needs while leveraging global expertise and capital (Hoang *et al.*, 2023; Yashiro *et al.*, 2021).

Fourth, DEN offers a low-cost, scalable model for leadership development. Rather than relying on formal degree programs or standalone incubators, it leverages existing DOGANA infrastructure, volunteer faculty, and virtual platforms. This approach is consistent with recommendations that leadership development be embedded within real professional networks and organizational contexts, rather than isolated classroom experiences (Debets *et al.*, 2023; Frich *et al.*, 2015; Lyons *et al.*, 2021).

Finally, the initiative may contribute to identity formation beyond traditional career paths. By consistently framing physicians as innovators, founders, and intrapreneurs, DEN can broaden trainees' and alumni's sense of what constitutes a successful career in medicine. This kind of reframing has been documented in other innovation-focused educational initiatives and is associated with greater openness to non-linear, impact-oriented professional trajectories (Preiksaitis *et al.*, 2023; Wu *et al.*, 2025).

DISCUSSION:

DEN represents an alumni-driven response to several converging trends: the growing recognition that physicians require leadership and systems-thinking capabilities; the rise of medical innovation and entrepreneurship education; and the unrealized potential of diaspora networks to drive bidirectional health innovation. Table 1 summarizes how key features of DEN align with evidence-based

characteristics of effective physician leadership and entrepreneurship programs. Systematic reviews suggest that effective leadership development programs incorporate experiential learning, multimodal pedagogy, longitudinal engagement, and clear links to organizational priorities (Debets *et al.*, 2023; Frich *et al.*, 2015; Lyons *et al.*, 2021; Phillipson *et al.*, 2025). DEN's design reflects many of these elements. Experiential narratives from practicing entrepreneurs provide context-rich cases that move beyond abstract theory. Interactive panel formats and live question-and-answer segments allow participants to engage directly with speakers, mirroring the "action learning" approaches recommended in the leadership literature (Frich *et al.*, 2015; Lyons *et al.*, 2021). Organizational anchoring within DOGANA ensures that DEN activities remain aligned with the broader mission of serving Dow graduates and advancing healthcare in Pakistan and the diaspora.

Innovation and entrepreneurship programs in medical schools have likewise demonstrated benefits when they integrate mentorship, project-based work, and exposure to interdisciplinary teams (Niccum *et al.*, 2017; Pan *et al.*, 2025; Preiksaitis *et al.*, 2023; Wu *et al.*, 2025; You *et al.*, 2024). While DEN does not yet offer formal project-based incubator components, it functions as an initial "front door" into the entrepreneurial landscape for Dow graduates and students, with clear potential to evolve toward more structured mentorship, pitch sessions, and collaborative ventures.

Several features distinguish DEN from school-based initiatives. Alumni networks naturally span multiple generations of clinicians, allowing early-career physicians to learn from mid-career and senior entrepreneurs, and vice versa. This kind of lifelong, cross-cohort engagement aligns with calls for leadership development that extends beyond early training into ongoing professional life (Frich *et al.*, 2015; Lyons *et al.*, 2021).

Table 1: Alignment of the Dow Entrepreneurial Network (DEN) with evidence-based features of physician leadership and entrepreneurship programs

Domain from Literature	Evidence-based Feature	Example in DEN Design
Experiential Learning & Narratives	Programs are more effective when they use real cases, stories, and reflective discussion rather than abstract theory (Frich <i>et al.</i> , 2015; Lyons <i>et al.</i> , 2021).	Flagship session “Delivering Excellence: From the ICU to the Boardroom” featuring a health-system CEO, plus webinar panels where Dowite entrepreneurs describe real ventures, failures, and lessons learned.
Role Models & Mentoring	Exposure to senior and near-peer role models improves leadership and entrepreneurial self-efficacy (Niccum <i>et al.</i> , 2017; Wu <i>et al.</i> , 2025).	Panels intentionally include Dow alumni at different career stages (hospital leadership, diagnostics, digital health, diplomacy), providing visible role models for students and early-career physicians.
Multimodal, Longitudinal Engagement	Repeated contact via mixed formats (in-person, virtual, small/large groups) deepens impact compared with one-off events (Debets <i>et al.</i> , 2023; Phillipson <i>et al.</i> , 2025).	Combination of an in-person retreat session plus a three-part virtual webinar series over several months, with consistent moderators and rotating panelists.
Organizational Anchoring	Programs tied to real institutional priorities and governance are more likely to be sustained and impactful (Frich <i>et al.</i> , 2015; Lyons <i>et al.</i> , 2021).	DEN is a 2025 DOGANA presidential initiative, using DOGANA’s communication channels, sponsorship, and governance structures rather than operating as a stand-alone project.
Network Building & Peer Learning	Alumni and interdisciplinary networks support opportunity sharing, co-founder matching, and diffusion of innovation (AlumnForce, 2022; Hoang <i>et al.</i> , 2023).	DEN events link students and residents in Karachi with Dow alumni in North America, Europe, and the Gulf, explicitly framed as a platform to “connect minds” and “create leaders.”
Low-cost, Scalable Models	Sustainable initiatives often leverage existing infrastructure and volunteers instead of creating new degree programs (Debets <i>et al.</i> , 2023).	DEN uses DOGANA’s existing retreat, webinar platforms, and volunteer faculty, avoiding tuition-based programs or new legal entities while still providing structured content.
Global/Diaspora Engagement	Diaspora networks can facilitate bidirectional innovation and resource flows between high- and low/middle-income settings (Yashiro <i>et al.</i> , 2021).	DEN explicitly highlights collaboration between Dow alumni in Pakistan and the diaspora, with sessions featuring speakers from both contexts and emphasizing South–North and North–South linkages.

Because Dow graduates practice worldwide, DEN also provides a platform for South–North collaboration in health innovation, potentially addressing local needs in Pakistan while enabling access to capital, technology, and regulatory expertise from high-income settings (Hoang *et al.*, 2023; Yashiro *et al.*, 2021). In addition, DEN, as a presidential initiative of DOGANA, is supported by sponsors but not structured as a legal entity or investment vehicle. This non-commercial, trust-based framing helps manage expectations, minimize conflicts of interest, and preserve an ethos of mutual support and professional growth rather than transactional deal-making.

At the same time, several challenges and risks warrant attention. *Alumni initiatives often rely on a small group of champions; sustaining momentum will therefore require precise succession planning and integration into DOGANA’s formal governance structures.* Ensuring equity and inclusivity is also critical; opportunities for mentorship, visibility, and introductions should be distributed across gender, geography, and career stage to avoid reinforcing existing hierarchies. Moreover, consistent with critiques of leadership-development research, DEN will need to move beyond satisfaction surveys toward tracking behavioral and organizational outcomes, such as new ventures launched, collaborations formed, and significant career transitions (Debets *et al.*, 2023; Lyons *et al.*, 2021; Phillipson *et al.*, 2025). As DEN matures, enhancements could include a structured mentorship and coaching program, project-based components such as innovation challenges or small-grant competitions, and formal partnerships with incubators, investors, and academic institutions in Pakistan and abroad. Systematic evaluation using pre- and post-participation surveys of entrepreneurial self-efficacy, longitudinal tracking of venture formation, and qualitative case studies will be essential for documenting impact and guiding iterative improvement.

CONCLUSION:

DEN is an emerging example of how an alumni association can operationalize physician leadership and entrepreneurship development without creating new degree programs or commercial entities. Rooted in DOGANA's 2025 presidential agenda and articulated through a series of in-person and virtual events, DEN leverages storytelling, peer networking, and diaspora linkages to connect Dow graduates and students who aspire to lead and innovate.

By articulating clear objectives, maintaining a voluntary, non-commercial structure, and aligning with evidence-based principles of leadership and entrepreneurship education, DEN offers a scalable model that other diaspora and alumni organizations can adapt. Future research should evaluate DEN's long-term effects on participant trajectories, venture creation, and contributions to health systems in Pakistan, North America, and beyond.

REFERENCES

1. AlumnForce. (2022). *Alumni relations, a springboard to innovation and entrepreneurship*. AlumnForce. <https://www.alumnforce.com/en/alumni-relations-a-springboard-to-innovation-and-entrepreneurship/>
2. Debets, E., de Jong, M. A. W., Bongers, I. M. B., et al. (2023). Linking leadership development programs for physicians with organization-level outcomes: A realist review. *BMC Health Services Research*, 23, 783. <https://doi.org/10.1186/s12913-023-09687-8>
3. Frich, J. C., Brewster, A. L., Cherlin, E. J., & Bradley, E. H. (2015). Leadership development programs for physicians: A systematic review. *Journal of General Internal Medicine*, 30(5), 656–674. <https://doi.org/10.1007/s11606-014-3141-1>
4. Hoang, D., Sun, J., Schulte, F., et al. (2023). Physician entrepreneurship: Motivations, barriers, and the role of organizational context. *Social Science & Medicine*, 323, 115862. <https://doi.org/10.1016/j.socscimed.2023.115862>
5. Lyons, O., George, R., Galante, J. R., et al. (2021). Evidence-based medical leadership development: A systematic review. *BMJ Leader*, 5(3), 206–213. <https://doi.org/10.1136/leader-2020-000360>
6. Niccum, B. A., Sarker, A., Wolf, S. J., & Trowbridge, M. J. (2017). Innovation and entrepreneurship programs in US allopathic medical schools: A new paradigm. *BMC Medical Education*, 17, 259. <https://doi.org/10.1186/s12909-017-1090-4>
7. Pan, X., Chen, J., Fu, C., et al. (2025). Mechanism of innovation and entrepreneurship education boosting the innovation and entrepreneurship ability of medical students: A serial multiple mediation model. *Frontiers in Medicine*, 12, 1548275. <https://doi.org/10.3389/fmed.2025.1630168>
8. Phillipson, J., Pinto, A. C., Kingsley-Smith, H., Krachler, N., McGivern, G., & Lyons, O. (2025). Leadership training in healthcare: a systematic umbrella review. *BMJ Leader*, leader-2025-001269. Advance online publication. <https://doi.org/10.1136/leader-2025-001269>
9. Preiksaitis, A., Avila, H., Cachay, R., et al. (2023). Positive and negative impacts of hackathons using design thinking in health education settings: A scoping review. *JMIR Medical Education*, 9, e40130. <https://doi.org/10.2196/40130>
10. Wu, X., Zhan, F., Zhang, X., & Wang, T. (2025). Innovation and entrepreneurship education for medical students: a global bibliometric analysis (2000-2024). *Medical Education Online*, 30(1), 2515385. <https://doi.org/10.1080/10872981.2025.2515385>
11. Yashiro, N., Hosono, K., & Murayama, A. (2021). Facilitators and barriers to physician entrepreneurship: A qualitative study. *BMJ Open*, 11, e047653. <https://doi.org/10.1136/bmjopen-2020-047653>
12. You, X., & Wu, W. (2024). Assessing the impact of Medical Education's Innovation & Entrepreneurship Program in China. *BMC Medical Education*, 24(1), 519. <https://doi.org/10.1186/s12909-024-05467-2>