



Results of the George Washington University cancer center's *comprehensive cancer control cancer communication mentorship program* and implications for future practice

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Abstract

Purpose The *Comprehensive Cancer Control Cancer Communication Mentorship Program* (“Mentorship Program”) was created by the George Washington University Cancer Center (GWCC) to provide technical assistance (TA) in implementing evidence-based cancer screening communication interventions and support networking for comprehensive cancer control (CCC) professionals. The Mentorship Program matched entry-to mid-level CCC professionals with health communication and/or CCC experts and offered monthly web-based discussions with academic researchers and practitioners who shared their knowledge and provided applied learning opportunities throughout mentees’ project planning, implementation and evaluation. The program objective was for mentees to improve health communication skills and apply evidence-based knowledge to reduce the burden of cancer.

Methods A mixed methods evaluation was conducted, including a qualitative description of each project and its outcomes as well as quantitative measures of satisfaction with the program and self-rated changes in competence.

Results Mentees represented the following locations: New Jersey, Arkansas, Michigan, West Virginia, and Republic of Palau. Project topics ranged from increasing *Human papillomavirus* (HPV) vaccinations to increasing screening uptake for colorectal cancer, lung cancer, cervical cancer, and breast cancer. Evaluation results from pre- and post-program communication competency self-assessments and mid- and post-program surveys revealed that the Mentorship Program advanced personal and professional goals and improved public health communication skills.

Conclusion The Mentorship Program achieved its objectives for peer networking and offering expert TA in cancer prevention and control communication, offering a promising model for others involved in supporting implementation of evidence in practice.

Keywords Mentorship · Cancer control · Cancer screening · Cancer risk reduction

Introduction

The *Comprehensive Cancer Control Cancer Communication Mentorship Program*, (hereafter referred to as the “Mentorship Program”), was created by the George Washington University Cancer Center (GWCC) in response to a 2014 needs assessment [1] among professionals involved

in comprehensive cancer control (CCC). CCC is an integrated and coordinated approach to reducing cancer incidence, morbidity, and mortality through prevention, early detection, treatment, and survivorship. The Centers for Disease Control and Prevention (CDC) provides CCC programs with funding, guidance, and technical assistance (TA) to develop cancer control plans and also supports affiliated cancer coalitions to further build CCC capacity. The assessment identified a need for mechanisms to collaborate and build relationships, as well as TA in planning and implementing evidence-based health communication interventions to increase cancer screening. These findings

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aligned with known gaps in public health workforce capacity and with the CDC priority to support broad implementation of recommended cancer screenings [2, 3]. Mentorship programs are effective strategies to address challenges in translating research into practice, improve collaborative decision-making, and strengthen public health capacity via peer networking and TA [4, 5]. Given the effectiveness of mentorship programming, GWCC, a TA provider funded by CDC to support CCC practitioners, designed the Mentorship Program to match entry-to mid-level CCC professionals with health communication and/or CCC experts to fulfill these needs. This paper describes a professional mentoring program and the benefits to CCC programs, mentors, and mentees.

Methods

Mentorship program curriculum

The Mentorship Program was adapted from the *National Cancer Institute's* (NCI) *Research2Reality* (R2R) pilot mentorship program. R2R evaluation results indicated that mentorship programs, like R2R, are effective strategies in developing evidence-based public health competencies for CCC practitioners [4–6]. GWCC conducted two interviews with NCI's former mentorship program staff to identify areas of optimal adaptation. Interview topics ranged from recruitment and curriculum to lessons learned from R2R's program evaluation. With this information, GWCC completed an *R2R Adaptation Comparison and Proposal Matrix* to cross compare R2R program implementation and experience with GWCC recommendations. To address minor gaps in R2R curriculum and the CCC needs assessment, the Mentorship Program was designed to focus on public health competencies, health communication, and evidence-based practices, with an additional financial planning/management domain. With these adaptations, mentees were to plan, implement, and begin evaluating one evidence-based health communication initiative aligned with their state, tribe, or territory's CCC or communication plan objectives related to cancer prevention and/or screening in tandem with participation in the Mentorship Program [7]. Incentives to participate in the program included modest funds to support project expenses and dissemination and subject matter expert mentoring. The first cohort of the Mentorship Program operated from 2015–2016 while the second cohort operated from 2019–2020.

While R2R piloted an 18-months long program, GWCC shortened its program to 12 months based on NCI staff feedback in an attempt to reduce the impact of inevitable changes in staffing, organizational priorities, or other contextual factors that often occur across a longer time period. Based on

feedback from Cohort One, Cohort Two participated in a two-day in-person kickoff meeting to discuss program basics, expectations, and logistics. Additionally, Cohort Two completed core learning in 12 months, but had an extension of six months for additional implementation, evaluation, and dissemination. The general program included 12 facilitated monthly virtual meetings with mentees and mentors, Ask-the-Expert discussions, and internal meetings with guest speakers [7]. Each mentorship pair was encouraged to meet between monthly meetings and travel for in-person site visits, as needed. GWCC provided travel funds for each mentorship pair to encourage in-person meetings for further experiential learning.

With these adaptations, mentees of both cohorts of the Mentorship Program focused on communication as part of their curriculum, aligning material with *Core Competencies for Public Health Professionals*, adopted by the *Council on Linkages Between Academia and Public Health Practice (2014)* [8]. Evaluation results obtained from R2R program participants indicated that the mentees found the public health core competencies framework appropriate for a variety of participants, and that the competencies were transferable to other projects and lines of work. Based on this feedback, the Mentorship Program implemented the same core competencies into its own program. In addition, Cohort Two was required to focus on cancer screening, specifically. Both cohorts utilized GWCC's *Communication Training for Comprehensive Cancer Control Professionals 102: Making Communication Campaigns Evidence-Based* [9]. The content from this training was presented as live webinars for Cohort One, while Cohort Two accessed it as asynchronous training. Both cohorts also had access to a shared online workspace for group discussion, activities, and deliverables.

Participant selection

To recruit mentees, GWCC invited applications for participation via established communication channels, including GWCC's *Technical Assistance Periodical* e-newsletter, emails to CDC's National CCC Program listserv, and GWCC's TA Steering Committee. Applicants had to be early to mid-level CCC professionals and in a position to spearhead a communications initiative. Program acceptance was based on project feasibility, levels of individual/organizational commitment, and alignment of project proposals with a mentors' experience and with state/national CCC program objectives. Selected mentees ($n = 5$) represented the following locations: New Jersey, Arkansas, Michigan, West Virginia, and Republic of Palau. Mentors, ranging from academic researchers to senior communications specialists and CCC program managers, were recruited based on their expertise in health communications, evidence-based approaches, and cancer control.

Evaluation approach

The Mentorship Program was evaluated using mixed methods, collecting process, and outcome evaluation data. Aligned with implementation science approaches, we acknowledged variations in project scope and topics and did not attempt to standardize qualitative data collection. All mentees and mentors completed mid-point and final evaluations and/or mid-point interviews with GWCC. These evaluations and interviews evaluated mentee and mentor levels of satisfaction with the program experience, areas of improvement, final summaries, and overall experiences detailing mentees' projects and changes in communication competency from *Core Competencies for Public Health Professionals* [10] (Table 1). Competency assessments measured Likert scale responses with higher scores indicating greater proficiency (i.e., None = 1 to Proficient = 4, Table 2).

Mentee Project Results

Cohorts One and Two were comprised of two and three mentee-mentor pairs, respectively. Mentees were from health departments, CCC programs, and/or coalitions while mentors were affiliated with universities and health departments. Participants (including mentees and mentors) represented a total of ten states and one Pacific Island jurisdiction.

Cohort one (2015–2016): don't forget the HPV vaccine! project

Don't Forget the HPV Vaccine! focused on improving the quality of provider recommendations for the *human papilloma virus* (HPV) vaccine through communication strategies and policies in New Jersey (NJ). NJ's overall HPV immunization rates are lower than the national average [11]. Barriers to HPV vaccination range from parental refusal and lack of health care provider (HCP) recommendations [12]. Parents are four to five times more likely to vaccinate their child

against HPV if their HCP effectively recommends it [13]. Recommendations are considered effective when offered in the same way and time as other adolescent vaccines [13].

The project was led by the Cape Atlantic Coalition for Health, a Regional Chronic Disease Coalition for Atlantic and Cape May Counties in NJ. As the Coalition Coordinator, the mentee worked with the Cape Atlantic Coalition for Health to use communication strategies to educate pediatric/family medicine practices about effectively recommending the HPV vaccine and encouraging adoption of quality improvement policies. This included creating and disseminating an HCP toolkit on HPV vaccination strategies, creating HPV vaccine resources on the NJ cancer coalition website, and conducting professional workshops for various health professionals to more effectively communicate and promote the HPV vaccine. The project also aimed to increase the number of NJ parents exposed to HPV vaccination messaging by disseminating health education information at health care practices. Long-term intended outcomes included increasing the number of HCPs who utilized the various communication techniques shared and ultimately increasing HPV vaccination rates among participating practices. According to the mentee's final report, follow-up surveys from professional education events indicated that 60% of participants found the workshops to be helpful and 40–60% of participants reported that they had shared information with staff and used the strategies discussed. Finally, two medical practices agreed to implement a policy change by creating and adopting a written policy on recommending the HPV vaccine.

Cohort one (2015–2016): reducing Arkansas' colorectal cancer burden

Reducing Arkansas' Colorectal Cancer Burden aimed to reduce the colorectal cancer (CRC) burden among African American males, ages 50 and above, who were living in a rural Arkansas county. In 2012, Arkansas ranked 46th nationally for CRC screening rates [14]. According to the

Table 1 Timeline of outcomes and evaluations collected

Outcomes	Instruments	Cohort	Time collected
Communication skills–Pre	Pre-competency assessment	1	July 2015
		2	Sept 2019
Communication skills–Post	Post-competency assessment	1	June 2016
		2	Sept–Oct 2020
Program satisfaction	Mid-program eval/interviews	1	Dec 2015
		2	Feb–Mar 2020
Overall mentee experience, post-program satisfaction	Final program evaluation	1	June 2016
		2	Dec 2020
Project results	Final project reports	1	June 2016
		2	Jan 2021

National Colorectal Cancer Roundtable (NCCRT), the top five barriers to CRC screening among African American men were (1) lack of doctor recommendation, (2) lack of trust in the healthcare system, (3) delayed screening due to lack of symptoms, (4) procrastination, and (5) affordability of screening [15].

As Director of Programs within the Arkansas Cancer Coalition, the mentee's project aimed to develop and implement a CRC communication campaign with culturally-appropriate messages tailored to an older, African American male population. To do so, the Arkansas Cancer Coalition used the NCCRT's communication toolkit [15]. The coalition plans included conducting a focus group with African American males to determine the communication channels to best reach them and implementing a pilot communication campaign to increase general awareness of CRC and ultimately improve screening rates. While the mentee was unable to complete the entirety of the project by the end of the Mentorship Program, the launch of the Arkansas Cancer Colorectal Roundtable (ACCR) at the start of the project year allowed the mentee to collaborate with ACCR to develop an awareness campaign. In addition, the coalition allocated funding for CRC screening efforts, such as focus groups, community surveys, and trainings. In addition to the launch of the ACCR, the coalition collaborated with a health sciences university to provide access to fecal immunochemical test (FIT) kits, worked with multiple partners during CRC Awareness Month, and engaged with the NCCRT to increase knowledge and build coalition capacity to address CRC screening. Due to the partnerships formed from the Mentorship Program, the Arkansas Cancer Coalition was successful in dedicating resources to address high rates of CRC in Arkansas with the assistance of various funders and partners. As of 2015–2017, CRC screening rates in Arkansas increased by 7.2% [16]. The project's continued success includes the passing of two statewide laws to increase CRC screening access [17, 18] and receiving two national awards, including #1 in Outcomes by the NCCRT and a 2021 80% in Every Community National Achievement Awards for their overall efforts.

Cohort two (2019–2020): increasing cervical cancer screening among women who are minoritized in Palau

Increasing Cervical Cancer Screening among Women who are Minoritized in Palau focused on improving cervical cancer screening rates among Filipino migrant women, who make up the largest group of women who are minoritized in Palau. According to an interview with a member of the Belau Foreign Spouses Society (BFSS), a group made up of Filipino women married to Palauan men, there are approximately 4,000 Filipino migrant workers in Palau, a majority

of them women. A 2016 survey revealed that the cervical cancer screening rate of women who are minoritized in Palau was 42% compared to 51% for Palauan women [19].

This project was spearheaded by the Palau Comprehensive Cancer Control Program (PCCCP), one of the three cancer programs within the Non-Communicable Disease Unit of the Bureau of Public Health Services in the Palau Ministry of Health. As Program Coordinator, the mentee led a project to develop small media to increase cervical cancer screening among Filipino women in Palau by increasing awareness and positive screening behaviors. The mentee worked with over 100 members of the BFSS. Project activities included engaging with local groups and establishing partnerships, developing and implementing a knowledge, attitudes, and behaviors (KAB) survey tool, conducting focus group sessions, and using the results of primary data gathered to develop key messages for small media. As a result of the project, the PCCCP established a partnership between the Filipino Association of Palau and the Filipino Women's Group. Of the 96 respondents that completed the KAB survey, 74% were willing to be screened if given information and recommendation for the Pap test. These results were used to construct focus group questions. The mentee then conducted three focus group sessions with 22 women. Findings revealed that lack of knowledge, negative emotions, and cultural and socioeconomic factors were barriers to screening, while increased knowledge, convenience, and culturally sensitive communication strategies were facilitators of screening uptake. As of Summer 2021, these focus group results are currently guiding the content and dissemination plan of small media, which will include flyers, fact sheets, and posters for bulletins and social media.

Cohort two (2019–2020): lung cancer screening in West Virginia

Lung Cancer Screening in West Virginia (WV) aimed to decrease lung cancer mortality and increase lung cancer screening in WV. Every year in WV, approximately 2,047 people are diagnosed with lung cancer and 1,460 will die from the disease [20, 21]. WV also has an adult smoking rate of 26% compared to the national rate of 17.1% [22]. Furthermore, over half of WV residents live in rural areas where they lack reliable transportation and lengthy driving times contribute to delays in health screening and follow-up care [23].

The project was executed in collaboration with the Mountains of Hope (MOH) Cancer Coalition, a group of individuals and organizations in WV who are a part of a statewide effort to reduce the impact of cancer. As Program Manager, the mentee's project aimed to increase WV provider knowledge of lung cancer screening, reduce patient barriers to finding a lung cancer facility, and increase knowledge about

lung cancer screening within counties with high lung cancer incidence rates. Using a multi-pronged formative evaluation approach, the project first assessed provider understanding of the screening guidelines. The results of the initial assessment showed significant barriers to lung cancer screening in WV, including physician knowledge, acceptability, and willingness to implement the guidelines. These results informed the creation of *The Provider's Guide to Communicating about Lung Cancer* [24]. Secondly, the project partnered with the *WV Health Connection* to utilize a geospatial mapping tool to assess potential space and transportation-based barriers [25]. Information from this map was used to target under-resourced areas as part of the Mobile Lung Cancer screening program [26]. Lastly, patient community surveys were administered to assess barriers to screening among potentially eligible individuals; individuals were asked to self-identify if they were eligible for lung cancer screening based on 2013 U.S. Preventive Services Task Force (USPSTF) lung cancer screening guidelines presented in the survey. Data from the survey was used to develop and disseminate more than 1,500 rack cards at six primary care offices during academic detailing sessions.

Of the 75 completed patient community surveys, results showed that after reviewing lung cancer screening guidelines, 51% of survey respondents were still unable to determine if they qualified for lung cancer screening. Other barriers to screening noted were cost, lack of symptoms, fear, refusal to receive treatment, and lack of transportation. Furthermore, monthly website metrics measured the reach of the public-facing geospatial map tool, which was intended to help patients and providers find accredited screening facilities close to home. The mentee submitted an abstract and poster presentations to several conferences and valuable partnerships were established as a result of the project. The findings from this project have been used to inform larger lung cancer screening programs through the *WV University Cancer Institute*.

Cohort two (2019–2020): breast & cervical cancer control navigation program (BC3NP) community outreach program

The *BC3NP Community Outreach Program* sought to increase enrollment of low-income, underinsured, and uninsured women living in Genesee County into the BC3NP. BC3NP was implemented by the *Michigan Department of Health and Human Services (MDHSS)* to coordinate with local agencies, such as hospitals and health care organizations, to connect low-income women to cancer screening services and follow-up care, including cancer treatment, if needed. As a Cancer Communication Consultant for the MDHSS, the mentee developed this project to create and build relationships with non-traditional partners, such as

food pantries and libraries, for the BC3NP to reach lower socioeconomic and other underserved groups with lower access and uptake for screenings and follow-up care due to various barriers.

For three consecutive years, Genesee County has ranked 82nd out of 83 Michigan counties for overall health outcomes [27]. In addition, the mentee reported that there is a large distrust of MDHSS in Genesee County due to the Flint Water Crisis; therefore, partnering with trusted community entities may assist with reaching populations of underinsured and uninsured women.

Short-term project objectives included improved overall awareness of the BC3NP, improved knowledge of how to navigate through screening/treatment, and increased intention to call the BC3NP helpline to check eligibility. Long-term objectives included increased enrollment into the BC3NP and increased patient completion of recommended breast and cervical cancer screenings. Following a community assessment, a communication plan was created based on the intended audience. Next steps included testing the messaging and receiving feedback from the community regarding the messaging. However, due to the COVID-19 pandemic, community testing was not able to happen. Instead of creating new messaging that was to be used at library events and within the library, the project disseminated current messaging and branding in library curbside pick-up packages. Data are being collected to elucidate where women heard about the BC3NP in order to determine if the library project increased awareness of the program or increased screening within the population of focus. To collect these data, women who call the BC3NP hotline are being asked where they first heard of the BC3NP program. The library program will be listed as one of the options once the library program is functional and MDHSS is able to attend events to fully enact the original, pre-pandemic communication plan. Lastly, as of Fall 2020, the mentee planned to meet with food banks and increase MDHSS presence at library events post-COVID-19, as well as test messaging through key-informant interviews.

Evaluation of program curriculum

We provide the average pre- and post-intervention scores for core communication competency, as well as mentee mean satisfaction scores at mid-point and end of the program. On average, mentees reported a higher rating in a majority of communication skills at the end of the program, with an average increase of 0.7 points on a 4-point scale (Table 2). Likert scale responses with higher scores indicated greater proficiency (i.e., None = 1 to Proficient = 4). However, in this case, the small sample size makes it difficult to detect genuine program effects on communication competencies.

Table 2 Mean communication competency scores for mentees

Communication skill	Total (<i>n</i> = 5)		
	Pre M	Post M	Difference (Post–Pre)
Assess the literacy of populations served (e.g., ability to obtain, interpret, and use health and other information; social media literacy)	2.3	3.3	1.0
Communicate in writing and orally with linguistic and cultural proficiency (e.g., using age-appropriate materials, incorporating images)	2.4	3.3	0.9
Solicit input from individuals and organizations (e.g., chambers of commerce, religious organizations, schools, social service organizations, hospitals, government, community-based organizations, various populations served) for improving the health of a community	2.4	3.5	1.1
Select approaches for disseminating public health data and information (e.g., social media, newspapers, newsletters, journals, town hall meetings, libraries, neighborhood gatherings)	3.5	3.4	-0.1
Convey data and information to professionals and the public using a variety of approaches (e.g., reports, presentations, email, letters, press releases)	2.9	3.7	0.8
Communicate information to influence behavior and improve health (e.g., use social marketing methods, consider behavioral theories such as the Health Belief Model or Stages of Change Model)	2.8	3.4	0.6
Facilitate communication among individuals, groups, and organizations	3.1	3.7	0.6
Communicate the roles of governmental public health, health care and other partners in improving the health of a community	2.9	3.7	0.8

Furthermore, mentors did not evaluate their mentees using the competency assessment, as the GWCC program replicated R2R evaluation methods that asked mentees to self-rate their pre-and post-program competency skills.

According to post-program evaluations, all mentees agreed that they were satisfied with the program, that they had good relationships with their mentors, and that the program gave them opportunities for networking and experiential learning. Additionally, mentors also strongly agreed or agreed they were satisfied with the Mentorship Program and that they had a good relationship with their mentees. Mentors from Cohort One reported that the program helped them expand their professional network and collaborative relationships; however, this was more difficult for Cohort Two as COVID-19 restrictions limited networking opportunities.

Among lessons learned reported by participants, the importance of partnerships and working with local community-based organizations resonated throughout the Mentorship Program. The partnerships established within the program allowed for the expansion and prioritization of professional networks and strengthened project sustainability. According to a mentee, the “benefit of this program are the resources and partnerships formed. As a junior staff, there may not be many opportunities to create partnerships across organizations and state lines. I know these partnerships have already benefited my coalition tremendously.”

Another central theme was consistent communication between mentors and mentees; mentors can coach mentees by providing project direction, keep mentees on track with deliverables, and/or mitigate barriers. Under the guidance of their mentors, mentees demonstrated flexibility and adaptation to changing interests, organizational priorities, and

community needs. Additionally, organizational priority setting and commitment within the mentee’s CCC coalition and among partners were important for project implementation at different stages.

Mentors shared that awareness of mentees’ professional environments and workplace pressures is important when planning for project implementation. Mentors also recommended deliberate relational development and regular conversation outside of programmatic meetings to enhance interpersonal support within the group. For example, Cohort Two had the benefit of a two-day in-person kickoff meeting that allowed the group to establish personal relationships with one another at the start. This also provided a foundation for mentees and mentors to begin their projects with a comprehensive understanding of health communication practices.

Lastly, a commitment to learning from and teaching fellow mentors and mentees was crucial to the success of the Mentorship Program. One mentee shared that “brainstorming and discussion with peers and mentors was the most helpful part of program as they could “run project ideas with the group and build out ideas by asking questions and offering suggestions.” The Mentorship Program provided a dedicated time and space for mentors and mentees to connect with each other and share experiences.

Discussion

Overall, the Mentorship Program demonstrated that it is a viable model to increasing access to TA via program materials, a communication infrastructure, and minimal funding

for CCC practitioners to advance their project goals. All five mentee projects were able to establish productive relationships with their mentors, conduct formative research and needs assessments, identify populations of focus and craft communication messages appropriate for their intended audience. Given their role as a CCC TA provider, GWCC was uniquely positioned to offer and facilitate key components of the program including (1) the COMM 102 training, (2) the mentor–mentee relationship, (3) regular peer-to-peer live/virtual interactions, and (4) a project that aligned with a state CCC plan. However, contextual factors and barriers, such as competing work priorities, staffing changes among mentees' workplaces, and the COVID-19 pandemic, affected implementation of some project activities and collection of evaluation data.

The competency-driven curriculum with an emphasis on evidence-based practices and an evaluation, combined with the availability of modest funding to support project fees and the provision of free asynchronous content, allowed for successful implementation of various program elements. Furthermore, the increases in self-reported communication competencies is a promising result because it can have farther reaching impacts across cancer initiatives through a state CCC coalition or health department.

Limitations. Even though the evaluation was limited by small sample sizes for each cohort, the use of mixed methods evaluation to gather both qualitative and quantitative data for both cohorts at different time periods allowed for triangulation of data. The wide variation of project goals and their topics demonstrated that the mentorship program is flexible enough to accommodate a wide variety of communication projects in different real-world settings. Should the program be replicated, collecting data on mentors' assessment of mentee communication competencies as well as with value of the project to mentees' work supervisors could strengthen evaluation.

Conclusion

The Mentorship Program shows promise in increasing capacity for CCC practitioners to advance their personal and professional goals. Mentees in each cohort made substantial progress under the guidance of a mentor and support from GWCC. Knowing that both mentor and mentee can learn from each other is a valuable aspect of this relationship. Even though the mentorship projects only ran for one year, there is great potential for the impact of the program to continue long-term as a result of collaborative decision-making, partnerships established, resources shared, and expansion of professional networks.

The Mentorship Program can be adapted for similar public health programs seeking to offer TA and can also

be adapted for regional facilitators, such as CCC coalitions wishing to provide TA to CCC partners. A program manual [7], located in the GWCC Cancer Control Tap Resource Repository, can be used to guide replication and adaptation of activities. With staffing support to coordinate this program, it has the potential to improve the effectiveness of CCC and similar public health campaigns in diverse settings.

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Data availability There are no data available for this study as the majority of outcomes described were experiential.

Code availability Not applicable.

Declarations

Conflict of interest The authors report no conflict of interest.

Ethical approval Not applicable.

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