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# Community engagement in health promotion campaigns: A qualitative photo content analysis from vitalizing communities against NCD risk factors (V-CaN) field trial in rural central India

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#### **Abstract:**

**BACKGROUND:** India faces a critical challenge with 5.8 million annual deaths from non-communicable diseases (NCDs). Maharashtra, where NCDs constitute 66% of the disease burden. The youth, lacking awareness, are vulnerable. Vitalizing communities against NCD risk factors (V-CaN) melawa, inspired by the "Pandharpur Wari" pilgrimage, aims to bridge implementation gaps and empower communities. "Arogya chi wari" integrates health practices with cultural events, offering a unique approach. Photo documentation from V-CaN melawa becomes a powerful tool for assessing community engagement qualitatively. The aim of the study was to qualitatively analyze photos from V-CaN melawas, exploring community engagement in health promotion against NCD risk factors.

**MATERIALS AND METHODS:** V-CaN melawas were organized in the field practice area of the department of community medicine. These melawas were part of the cluster randomized field trial named V-CaN, which is being implemented in a rural area of the Wardha district of Maharashtra. The V-CaN days, also known as melawas, were organized with the aim of facilitating behavioral change among participants. A qualitative study using photo content analysis was conducted, reviewing 2000 pictures from 59 V-CaN melawas. Thematic content analysis was employed, with researchers selecting 61 photos based on uniqueness.

**RESULTS:** Six major themes emerged: health promotion, health system involvement, intersectoral coordination, inclusiveness, community resource mobilization, and innovation. Examples include nutrition exhibitions, health screenings, and innovative games.

**CONCLUSIONS:** The analysis showcases diverse community participation in V-CaN melawas, emphasizing inclusivity, collaboration, and innovation. While qualitative, the study lays the foundation for future quantitative assessments of the intervention's impact on health outcomes and community attitudes.

## **Keywords:**

Chronic disease, community participation, preventive health services, qualitative research

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## Introduction

on-communicable diseases (NCDs) claim the lives of around 5.8 million

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individuals in India. This translates to a one in four risk of NCD-related mortality before the age of 70 for the population. In 2016, NCDs accounted for 66% of the

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overall disease burden in Maharashtra. The primary contributors to disability-adjusted life years (DALYs) in that year included ischemic heart disease (17.1%), chronic obstructive pulmonary disease (COPD) (4%), diabetes (3.9%), and stroke (2.9%).<sup>[1]</sup>

From November 16 to December 31, 2021, the Maharashtra Health Department conducted screenings for individuals aged 30 and above as part of the Azadi Ka Amrit Mahotsav. Out of 17.60 lakh people screened, 35,510 were identified with diabetes (2.1%), 352 with oral cancer, 53 with breast cancer, and approximately 80 with cervical cancer. Approximately one lakh persons were diagnosed with hypertension (4%) and diabetes.<sup>[1]</sup>

The majority of these conditions stem from four specific behaviors: smoking, lack of physical activity, poor dietary choices, and excessive alcohol consumption. Chronic illnesses manifest unexpectedly, which makes it difficult to detect them until they have greatly advanced. The United Nations (UN) recognized that the rising burden of NCDs poses a significant challenge to achieving its Sustainable Development Goals (SDGs) by 2030.

The risk factors for NCDs may be more pronounced among young individuals, given that this stage is marked by experimentation and a susceptibility to engaging in risky behaviors. [5] Research indicates that the youth in India lack sufficient awareness about NCDs and the necessary skills to adopt healthy lifestyle choices. This age group exhibits a high prevalence of behaviors and metabolic factors associated with NCDs. Moreover, they are consistently exposed to a multitude of media messages influencing their health behavior, underscoring the importance of empowering youth to make informed decisions regarding their lifestyles. [6]

Intervention programs that engage the population through multiple activities or activities that are spaced over the entire duration of the program are more successful than those based on a single activity. [7] Vitalizing communities against NCD risk factors (V-CaN) is an ongoing community-based intervention for health promotion against NCD risk factors, mainly targeting 10–30-year-old age group, funded by the Indian Council of Medical Research (ICMR), engaging the population at spaced intervals with multiple activities over a period of time. [8]

"Arogya chi wari" is a Marathi word for V-CaN melawa (health promotion campaign against NCD risk factors). "Arogya chi wari" draws inspiration from the inclusive religious pilgrimage of "Pandharpur Wari" in Maharashtra. This initiative connects the well-known local pilgrimage of "Pandharpur Wari" to health-related activities aimed at preventing NCDs. The association

is based on the healthy practices observed during the pilgrimage, including adherence to a vegetarian diet, fasting, abstaining from alcohol and tobacco, and participating in spiritual activities such as bhajans and keertans.

Community participation is crucial in primary health care, yet it is often seen as a weak link. Community participation was evident in all of these melawas, sparking interest in understanding the nature of community engagement. Very few studies have employed photo content analysis as an analytical technique for studying community engagement in health promotion initiatives for chronic diseases, particularly in rural areas. Photos taken during the V-CaN day (melawa) by the field personnel are an opportunity to analyze and understand the engagement of the community in health promotion.

The objective of the study was to identify and understand the photos from the V-CaN melawa depicting unique ways as well as various domains for health promotion.

## **Materials and Methods**

# Study design and setting

This was a qualitative study done using photo content analysis. V-CaN melawas were organized in the field practice area of the Department of Community Medicine. These melawas were part of the cluster randomized field trial named V-CaN, which is being implemented in a rural area of the Wardha district of Maharashtra. The detailed study design of this cluster randomized field trial is described elsewhere.<sup>[8]</sup>

The V-CaN days, also known as melawas, were organized with the aim of facilitating behavioral change among participants. The objectives of the melawas included encouraging individuals to: i) quit tobacco and alcohol consumption, if applicable, ii) adopt a well-balanced diet, and iii) engage in regular physical activity. Collaborating with village-level health functionaries such as Village Health Nutrition Sanitation Committees (VHNSCs), community health officers (CHO), accredited social health activists (ASHA), and anganwadi workers (AWW), various activities were planned for V-CaN days. The focus was on raising awareness about the adverse effects of NCD risk factors through methods like exhibitions, demonstrations, and participatory games. A concerted effort was made to boost participation in these V-CaN day celebrations.[8]

# Study participants and sampling

Fifty-nine V-CaN melawas were organized by the time we decided to analyze the photos. Melawas were organized from September 2022 to April 2023. There were about 2000 pictures taken during these melawas.

Purposive sampling was employed in selecting the photos. Two separate researchers looked through every one of these images. If necessary, a thorough description of the images was obtained by speaking with the field personnel. During the melawa, field personnel took pictures for documentation purposes. The field personnel who took the images during this V-CaN melawa session were unaware that the photos would be analyzed for publication. Although researchers did not participate in the design or execution of these V-CaN melawas, they witnessed a few of them.

## Data collection tool and technique

Considering various health domains, around 120 photos were selected by each of the two researchers. The photo folders were exchanged between the two researchers. Seventy photos from each folder were selected. Sixty-one photos were selected by a third person out of 140 photos. Photos were selected based on their uniqueness in the following characteristics: Nutrition, physical activity, mental health, deaddiction, awareness regarding hypertension, diabetes, etc., The data analysis was done using thematic content analysis of the photos by both researchers.

#### **Ethical considerations**

This article is part of a larger study that has been registered with Clinical Trials Registration India prospectively. Ethics approval had been obtained from the institutional ethics committee (IEC/COMMED/79/2020), before the start of the trial. All the participants in the V-CaN melawa were informed about capturing photos for the documentation and verbal consent was taken for the same.

#### Results

The content from the photos was categorized into six major themes as follows:

- 1. Health promotion: nutrition, physical activity (kabaddi and other recreation games for children and adults), awareness of symptoms and causes of stress and ways to deal with them (mental health), tobacco (placards), hypertension, diabetes, community BMI chart, etc.
- 2. Health system involvement: CHO, auxiliary nurse midwife (ANM), ASHA, etc.
- Intersectoral coordination: self-help group (SHG), integrated child development services (ICDS), VHNSC, police, Panchayati Raj Institution (PRI), and school students.
- Inclusiveness: gender, age groups (intergenerational involvement), place of V-CaN melawa (school, temple, panchayat)
- 5. Community resource mobilization: local people acting as health promotion agents to the villagers (local resource persons), fruits, vegetables, rallies,

- pendol (local village people spent money and arranged for pendol, tables, etc.)
- Innovation: innovative modified NCD board and dice game, modified musical chair, rally (Prabhathferi), modified Fagerstrom scale to see dependence on tobacco, body mapping

These themes are further explained in Table 1 below. Figures 1-3 depicts few of the above themes.

Innovative games and ideas were the main attractions of the melawas. These innovations not only helped in age and gender inclusiveness but also piqued the interest and curiosity of the villagers from the same as well as surrounding villages. A few of the innovative games are explained below, which the researchers understood after talking with the project field staff.

- 1. Modified board and dice game: commencing with a roll of the dice, this game initiates the player's journey on the board from the starting point. The participant advances based on the number rolled, encountering specific habits associated with each number, whether good or bad. The participant must respond to questions posed by the facilitator pertaining to the particular habit corresponding to the current position. A correct answer grants the player an additional dice throw. Failure to answer results in the participant being halted, accompanied by a penalty such as performing five jumps or five sit-ups. As the game concludes, the facilitator provides insights into significant good and bad habits relevant to lifestyle.
- 2. Adapted musical chair game: In this variation, the chairs arranged in a circular formation are one less in number than the participants. While the participants continuously move around the circle, a question related to habits is posed. Once the question concludes, participants must swiftly secure a chair. Failure to do so is interpreted as a playful indication of not adhering to habits, even if they may be following them correctly. A brief discussion on the particular habit follows this scenario. Subsequently, the game persists with the removal of one chair in each round.

Table 2 shows the scores of implementation of all six different themes separately in 59 villages. Qualitative qualifiers for the qualitative research were used for scoring the photos.

At the end of the melawa, in a few villages, snacks/refreshments that are energy-rich, nutrient-poor foods that are high in fat, sugar, and salt were served. Reflection from one of the field staff regarding arranged refreshments in a village at the end of V-CaN melawa: it was neither easy nor a social norm for them to arrange for nutritious, protective, body-building, and fiber-rich snacks consisting of fruits, sprouts, vegetable salad,

Table 1: Content analysis of the photos from V-CaN melawa

Higher order	Second order	First order			
1. Health	Exhibition of highly	1.	Exhibition of following food by the villagers		
promotion	nutritious diverse local food	•	Various grains and pulses		
		•	Dry fruits, nuts, and seeds		
		•	Sprouts and raw vegetables as salad.		
		•	Fermented food		
		•	Fruits and vegetables		
		•	Cooked rice, roti, vegetable curries.		
		2.	Enhancing nutrition content of locally cooked foods, by local village women. For example, beetroot paratha and palak paratha.		
	Nutrition posters	1.	Locally available nutritious wild plants of medicinal importance		
	·	2.	Food balance poster, that is, food to be taken vs. food to be avoided		
		3.	Food plate poster.		
		4.	Food to be taken by people with anemia.		
	Mental health	1.	Local villagers listening to symptoms and causes of stress and the ways to reduce them.		
	awareness and deaddiction	2.	A poster depicting the ill effects of stress on the body.		
		3.	Many posters depicting ill effects of tobacco and alcohol on various body parts.		
	Physical activity	1.	Recreational games and physical activity sessions like Kabaddi: involvement by school		
	promotion		students of both genders.		
	Availability of technical expertise	1.	Postgraduate students and interns of department posted in respective sectors explaining the displayed charts		
		2.	Trained project field staff creating awareness about various prepared charts on NCD risk factors and promoting factors to combat NCDs.		
2. Health system involvement	CHO, ANM, ASHA, and MPW involvement in Melawa activities	1.	Public health system people like CHO, ANM, ASHA, and MPW also utilized this platform to organize their health screening camps like checking blood pressure, blood sugar, and anthropometric measurements.		
		2.	Blood tests like, complete blood count, lipid profile, etc., were also done.		
3. Intersectoral coordination	SHG, VHNSC, PRI, police	1.	In a few villages, local people invited eminent people like member of legislative assembly (MLA), ICDS officer, district administrative authorities, etc.		
		2.	SHG women utilized this platform to promote their products as depicted in Figure 2.		
		3.	Local village schools welcomed these events to help promote healthy behaviors for their school students.		
		4.	Involvement of government officials to register village people for voter ID.		
4. Inclusiveness	Involvement of people of all ages and genders Use of diverse gathering places	1.	Active participation by the village people of all age groups and both genders was clear from these photos as depicted in Figure 1.		
		1.	A few melawas occurred on school grounds in the village		
		2.	Some of the melawas occurred in temples		
		3.	A sew melawas occurred in an open space outside the gram panchayath.		
5. Community Arrangement of pendol, resource tables, and chairs		1.	Villagers themselves arranged for pendol, chairs, etc.		
mobilization	Resource person	1.	Masters of social work (MSW) students acting as resource persons in some villages.		
		2.	College students from the respective village acting as resource persons in some villages.		
	Food	1.	Fruits, vegetables, pulses, grains, nuts, seeds, etc., both cooked and raw were brought by people from the respective village from their home.		
6. Innovation	Innovative recreational games for physical activity promotion	1.	Trained project field staff involved in engaging children, adults, front-line health workers in recreational games.		
		2.	Active participation of school students in modified NCD board and dice game.		
		3.	Modified musical chair game: active participation is seen from ASHA, other village women, school students.		
	Community BMI	1.	Demonstration by field personnel to the villagers		
	Community DIVII	2.	Calculation of BMI to school students by ANM		
	Tobacco-body mapping	1.	Village people of diverse age groups and both genders are involved in body mapping and		
	game	2.	understanding the ill effects of tobacco and playing modified Fagerstrom scale.  A body diagram is drawn on the street floor with chalk instead of a readymade human body poster, to identify sites of the body where tobacco can show its effects.		

Table 1: Contd...

Higher order	Second order	First order		
	Rally (prabhatpheri)	<ol> <li>Local school students used drums and arogya chi vaari banners and placards and moved in the streets of the village to call villagers to the V-CaN melawa as depicted in Figure 3.</li> </ol>		
		<ol><li>Local bhajan mandal used bhajans and keertans and moved in the streets of the village to call villagers to the V-CaN melawa as depicted in Figure 3.</li></ol>		
		<ol><li>Children of the village also went to a rally to educate the public about tobacco effects on the body using placards.</li></ol>		
	Choose the path	<ol> <li>Visitors of the melawa were asked to choose the path, either towards the path where you follow good habits and stay healthy or choose bad habits and remain unhealthy and get chronic illnesses.</li> </ol>		
	Health tree and disease tree	<ol> <li>A poster depicting healthy habits in the roots of the tree and healthy lifestyle in the branches.</li> </ol>		
		<ol><li>A poster depicting risk factors for NCD in the roots and various NCD in the branches of the tree.</li></ol>		



Figure 1: Empowering communities: A vibrant health promotion fair. This image depicts multiple health promotion activities taking place at various stalls through posters related to nutrition, mental health, anemia, and awareness about hypertension and diabetes. Enthusiasm and participation among many villagers of different genders and age groups were also seen. Resource persons, ASHA are also seen. This event occurred in the open space of the gram panchayat

cooked food prepared with less oil, less sugar, less salt, etc., or alternatives prepared from natural sources that are available.

# Discussion

This content analysis of the photos from V-CaN melawas gives us information about the community participation and community mobilization that happened in the villages for the melawas. Melawas were organized to promote healthy habits and lifestyle modifications against risk factors for NCDs, under V-CaN project targeting mainly 10–30-year-old individuals. During this process, six themes were identified, which include health promotion, health system involvement, intersectoral coordination, inclusiveness, community resource mobilization, and innovation, as shown in Table 1.

The photos demonstrate the participation of people of all ages, from young children in school to the elderly and people of both genders, at different places, emphasizing the melawas' diversity and inclusiveness. Melawas featured a plethora of diverse performances, events, sports, and competitions, including essays, rangoli, and drawing contests. Finding, using, and enhancing



Figure 2: Community empowerment in action: SHG women marketing their products. SHG women were explaining about their products to the villagers. A few V-CaN melawa posters were also visible, like hand washing, food balance, anemia awareness, and wild vegetables. ASHA and the social worker of the department were involved in arranging the local vegetables for the display. Field staff seems to be supervising the arrangements

community resources to address regional health challenges makes it feasible to engage the community in creative, asset-based community engagement with diabetes and other NCDs at scale. [10] Perhaps because this was something different from their usual work and a platform within their own village at a regular site for expression and enjoyment, women and children participated at a higher rate than men.

The photos indicate that the community mobilized and not only brought various locally available vegetables, ranbhajya (wild and esculent vegetables), and traditional local foods but also innovated in making the food and presenting it at the melawa. This suggests that empowering the community to choose health-enabling foods is possible. Similar results were also found in a study conducted in Australia. <sup>[11]</sup> The community provided pendol, tables, chairs, and other items for the melawa in addition to food items.

Different sectors can be seen in the photos participating in different activities before and during the melawas.

Table 2: Cross matrix showing scores for each village for the depiction of the themes in the photos from V-CaN melawa

Name of the village	Health promotion	Health system involvement	Intersectoral	Inclusiveness	Community resource mobilization	Innovation
Anji	5+	5+	5+	5+	5+	4+
karla	5+	3+	4+	5+	4+	4+
Pavnar	5+	4+	5+	5+	4+	4+
Satoda	5+	3+	4+	5+	4+	4+
Mahakal	5+	3+	4+	5+	4+	4+
Ganeshpur	5+	3+	4+	5+	5+	4+
Warud	5+	4+	5+	5+	4+	4+
Pandharkawada	5+	4+	5+	5+	3+	4+
Kamthi-Khanpur	5+	2+	3+	5+	3+	4+
Chaka-Majra	5+	4+	5+	5+	4+	3+
Peth	5+	4+	5+	5+	4+	3+
Pulai	5+	3+	5+	5+	4+	3+
Narsula	5+	3+	5+	5+	4+	4+
Borgaon-Sawli	5+	2+	5+	5+	4+	4+
Borgaon- Nandora	5+	5+	5+	5+	5+	4+
Dhulwa	5+	5+	4+	5+	5+	4+
Mandwa	5+	4+	5+	5+	5+	4+
Pavnur	5+	4+	5+	5+	4+	3+
Bhugaon	5+	5+	4+	5+	5+	4+
Jaulgaon	5+	5+ 5+	4+ 4+	4+	5+	4+
Aashta	5+			4+ 4+	5+	
		4+	4+			4+
Sonegaon	5+	4+	4+	5+	4+	4+
Dutra-Railway	5+	4+	5+	4+	5+	4+
Ekurli	5+	4+	4+	4+	5+	5+
Talegaon	5+	4+	5+	4+	4+	4+
Bhivapur	5+	4+	4+	4+	5+	4+
Mirapur	5+	4+	4+	4+	5+	4+
Waigaon	5+	5+	4+	4+	5+	4+
Selukate	5+	4+	4+	4+	5+	4+
Inzapur	5+	4+	4+	5+	5+	4+
Kurzadi	5+	4+	5+	4+	5+	4+
Jamtha	5+	4+	4+	4+	5+	4+
Wadad	5+	4+	4+	4+	5+	4+
Sirasgaon	5+	3+	4+	5+	5+	4+
Aajgaon	5+	3+	4+	5+	4+	4+
Selsura	5+	4+	4+	4+	5+	4+
Padegaon	5+	4+	4+	4+	5+	5+
Salod	5+	5+	4+	4+	5+	4+
Dhotra (kasor)	5+	4+	4+	4+	5+	4+
Dhanora	5+	5+	5+	5+	5+	4+
Yesamba	5+	4+	4+	4+	5+	4+
Bhankheda	5+	4+	5+	5+	4+	3+
Goji	5+	4+	4+	4+	5+	4+
Yerangaon	5+	4+	4+	5+	5+	4+
Taroda	5+	4+	4+	5+	4+	4+
Nandora	5+	4+	4+	5+	5+	4+
Mandavgad	5+	4+	4+	4+	5+	4+
Sawali	5+	5+	4+	5+	5+	4+
Pujai	5+	4+	4+	5+	5+	4+
Nagapur	5+	4+	4+	4+	5+	4+
Barbadi	5+	4+	5+	5+	5+	4+
Chitoda	5+	4+	4+	4+	5+	4+
Kharangana	5+	3+	4+	4+	4+	4+

Contd...

Table 2: Contd...

Name of the village	Health promotion	Health system involvement	Intersectoral	Inclusiveness	Community resource mobilization	Innovation
Kutki	4+	4+	3+	4+	5+	4+
Ambanagar	5+	3+	5+	5+	4+	3+
Karanji (Bhoge)	5+	4+	4+	3+	5+	4+
Karanji Kaji	5+	4+	5+	5+	4+	3+
Sevagram	5+	4+	5+	4+	5+	4+
Madani	5+	4+	4+	5+	5+	4+



Figure 3: Prabhatpheri (rally) before vari (melawa). ASHA, anganwadi teacher, anganwadi and primary school children, local bhajan mandal (men and women), and a few resource people were involved in the prabhatferi (rally) to invite the villagers for the rally

Participation of school children and bhajan mandals along with villagers in the "Prabhatpheri" before the melawas, participation of CHOs, ANM, ASHAs, AWWs, etc., (health sector and ICDS) along with school children and school teachers (education sector), sarpanch and other grampanchayat members (PRI sector), SHGs, etc., during the melawa enriched the melawa experience.

The present qualitative study depicted intergenerational involvement in the melawa and engaged community members in organizing the event and utilized the historical and spiritual aspect of pandarpur wari and a study that used the digital stories method also utilized similar aspects to promote healthy lifestyles.<sup>[12]</sup>

A quasi-experimental study in South India educated school students in the intervention group through modular training with interactive teaching-learning methods about hypertension. This study indicated that parents in the intervention group experienced an increase in knowledge, implying successful knowledge transfer from students to parents. [13] The photographs from this melawa illustrated extensive involvement from school students, which likely helped them share what they learned with their parents.

A scoping review identified political and economic factors that have a significant effect on all risk factors for NCDs.<sup>[14]</sup> This melawa highlights intersectoral coordination with the gram panchayat, the involvement of SHG members, and mobilizing local resources to promote health and address the political and economic factors.

A mixed-method study conducted in a rural area of Puducherry, India, revealed that most SHG members have demonstrated readiness to participate in health-related initiatives, thus presenting a valuable resource for promoting health in rural regions.<sup>[15]</sup> Similarly, this melawa also utilized the role of SHG members for health promotion, as well as giving them a platform for marketing their products, creating a win-win situation.

All participants in a qualitative study focusing on individuals with NCDs in West Bengal, India, shared the view that in settings with limited resources like India, various social networks, civil society organizations, and patient-led groups could act as enablers in raising awareness about NCD risk factors, promoting early screening, facilitating referrals, and ensuring follow-up along the care pathway. [16] This melawa extrapolated these recommendations to achieve community involvement to act towards reducing NCD risk factors.

While acknowledging the positive community involvement, future investigations must employ quantitative methods to gauge the effectiveness of V-CaN melawas on health outcomes, behavioral shifts, and community attitudes. Efforts to prolong community participation post-melawas, such as integrating health promotion into local cultural events or customary community activities, should be explored. Customized interventions targeting specific age groups, genders, and risk factors should be devised based on the identified community dynamics. Boosting the capabilities of local health functionaries and community leaders is crucial to fortifying their role in sustaining health promotion initiatives and addressing implementation gaps.

The photos were analyzed subjectively by researchers, and personal biases might influence the interpretation of the content. The study primarily focused on a rural area in Maharashtra, and the findings may not be generalizable to other regions or urban settings.

# Conclusion

The analysis of V-CaN melawas in rural central India reveals diverse community engagement in health promotion campaigns against NCD risk factors. Categorized into six major themes, including health promotion, health system involvement, intersectoral coordination, inclusiveness, community resource mobilization, and innovation, the melawas demonstrated active community participation in exhibitions, health screenings, and educational activities. Collaboration with various sectors, inclusivity of all age groups, and innovative approaches were evident. It is possible to have community engagement as envisaged in the importance of communitization in the National Health Mission. However, future studies should quantitatively measure the impact of these interventions, ensure sustainability, target specific groups, and focus on capacity building.

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## **Conflicts of interest**

There are no conflicts of interest.

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