

A Media Advocacy Toolkit for the Allergist-Immunologist



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For clinicians involved in improving healthcare for patients with allergic and immunologic conditions, advocacy on a broader level through public outreach is key to advancing value-based care. In this article, we provide a toolkit of strategies and resources that can be used to raise public awareness of important issues through various mediums, including podcasts and social media, newspapers, testimonies, presentations, and interviews. A simple approach to effective media interactions is described using the acronym “RATIO,” which stands for Research, Audience, Targeted topic, Interview rephrasing, and Optimism. The acronym also reminds the person who is presenting information that only a fraction of what is discussed will be recalled, and an even smaller proportion will be implemented. Key points should be made early. Examples of key talking points are provided for selected topics, including food allergy, anaphylaxis, asthma, rhinitis, and broader healthcare advocacy. © 2024 American Academy of Allergy, Asthma & Immunology (J Allergy Clin Immunol Pract 2024;12:2678-86)

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INTRODUCTION

Clinicians devoted to improving health care for patients with allergic and immunologic conditions have expertise in interpersonal communication.¹⁻⁵ However, in both private and hospital-based practices, there is a need for communication on a broader scale.⁶⁻⁸ Advocacy is key to advancing value-based care—and one of the best strategies to encourage grass-roots advocacy is public outreach.⁹⁻¹⁴ Indeed, health systems regularly participate in marketing campaigns, sharing important knowledge with the communities they serve.^{15,16}

Contemporary practice is often characterized by fragmented and competing interests of a myriad of stakeholders—some of whom may fail to realize and acknowledge a solemn duty and fiduciary trust to promote value in the health of our population.^{9,17-20} Now more than ever,

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Abbreviations used

RATIO- Research, Audience, Targeted topic, Interview rephrasing, Optimism

allergist-immunologists are called upon to provide their expertise.^{1,3,6,9,14} Informational marketing programs are often the only way to raise public awareness, breaking down economic disparities that impact access to care.^{9,16} In this article, we discuss high-yield strategies to effectively communicate key messaging to the public.

UNDERSTANDING AND USING RESEARCH, AUDIENCE, TARGETED TOPIC, INTERVIEW REPHRASING, AND OPTIMISM WITH THE MEDIA

Only a fraction of what is discussed through media interactions will be recalled, and an even smaller proportion will be implemented. For maximum effect, it is important to maximize the RATIO (Research, Audience, Targeted topic, Interview rephrasing, and Optimism) of high-impact content. This acronym represents a simple approach to effective media interactions (Figure 1). Thus, it is important to deliver key messages early.²¹ Important considerations when implementing the RATIO approach are outlined in Table I.

1. **Research:** After agreeing to be interviewed, watch or listen to the programming and become familiar with the host, reporter, and format before the interview. This will give you a sense of how your segment will be presented. Formal or informal, dress, and the nature of the show should be important considerations.
2. **Audience:** Know who your audience is and gear your responses to those individuals. If it is the general public and not medical specialists, then provide clear and simple answers. For example, rather than saying the patient was “diaphoretic,” it is preferable to say that the patient was sweating. You are not perceived to be smarter if you use “big words,” but rather if you communicate well.
3. **Targeted topic:** Make your key point early in the interview. Physicians tend to want to give background information before they get to the conclusion, like a scientific article. Give the headline first, as you would in a newspaper article. Two-to-three-minute interviews go fast, and it is important to share your core messages early before time runs out.
4. **Interview redirecting:** Do not be afraid to rephrase the question or not answer the question directly if you feel it is taking you down the wrong path. For example, if asked, “Do you think doctors make too much money?” you might say, “I think a better question would be how can we control medical costs,” and then answer the question the way you want the discussion to go. This is not an oral exam that is graded by how well you answer the interviewer’s questions, but rather how well you can stay focused on your agenda.
5. **Optimism:** Most of all, be enthusiastic and happy to be interviewed. Show excitement about your topic and smile whenever you can appropriately. The camera lens takes away a great deal of the speaker’s energy, so be upbeat and positive about your subject. Rehearsing in front of a mirror will always help you prepare for an interview!

MEDIUM MATTERS!

Media campaigns have been influential in the allergy-immunology arena, impacting allergen labeling regulations, improving access to epinephrine, and emphasizing the importance of community-based management plans.²² As experts, allergist-immunologists can play a significant role in community public health, positively impacting social and structural determinants of health and health equity.²³ One such example is our changing approach to peanut allergy. Advances in peanut allergy prevention and oral immunotherapy highlight the need to address disparities in healthcare access.^{1,9,10,24} Education is a critical tool for prevention, raising awareness, and reducing the risk of allergy development.^{22,25} One example of simple, straightforward messaging is the “Eat Early. Eat Often” campaign of Food Allergy Canada and the Canadian Society of Allergy and Clinical Immunology.²⁶

Having relevant knowledge and being part of a media campaign is only half the battle. Although allergist-immunologists are both trained scientists and healthcare professionals, media training is not part of the medical education paradigm. Effective communication is imperative when participating in television, radio, and public speaking campaigns (Table II).

Television and radio

The RATIO acronym is an excellent guide to preparing for a successful television or radio interview. Helpful tips include keeping answers short, using first-hand examples to make key points, and avoiding medical jargon.²⁷ It is okay to question facts that do not make sense and to take a brief pause before answering to offer a more thoughtful response to questions.²⁷ Remember to use body language effectively, keeping arms loose and avoiding crossing your arms or legs.²⁷ Stay relaxed, natural, and engaged. Do not forget to smile and maintain eye contact when on screen.²⁸ Always be honest and humble, especially if you do not know the answer.^{27,29} Of course, interviews will be most successful if you have “done your homework” and understand the content of the interview beforehand, as well as the key messages you need to deliver.

Social media

There are several reasons to want to engage with social media, the first of which should be to educate and combat misinformation. In a recent review of YouTube videos about allergic rhinitis, 36% were assessed as misleading.³⁰ Allergist-immunologists can and should work to combat this misinformation because the public may not understand what information is scientifically based versus opinion and outright misinformation.¹⁴ This interaction can be educational and rewarding for the healthcare professional.^{12,31} Because multiple media vehicles such as Facebook, Instagram, X, YouTube, and TikTok may seem overwhelming to begin with, it is often important to first decide what your goal is and what demographic you want to target.^{12,32} The goal could be to combat misinformation, educate with new, breaking news, or attract new patients.¹⁴ Each of these goals may require different content. Because TikTok may be more popular than Facebook among GenZ and millennials, you may target a strategy to reach that group if that is your ideal demographic.^{33,34} Second, once the goal is determined, make sure to be authentic.³⁵ Do not try to post content you think people want. Rather, follow through with the content you wish



FIGURE 1. Using the RATIO to educate and inform.

to present in your own style. Trying one style and then pivoting is perfectly acceptable if it does not work for you. Third, make sure to do what fits your schedule so that you do not get burnt out.^{36,37} Some physicians are comfortable posting daily. Other physicians film multiple snippets over the course of several days

and then post that content over time with a social media management tool. Do what works for your schedule, but make sure to stay active! Lastly, post relevant content that quickly grabs attention and allows you the opportunity to engage with your audience. With social media, patients are fed nonstop material on

TABLE I. The RATIO stepwise approach working with media

Component	Consideration
Research	Type of media, review previous shows, observe aesthetics of show and participants
Audience	Medical professionals vs community members (education, economic status, cultural aspects of community)
Targeted topic	Be direct—state the key message first
Interview redirecting	Redirect questions as needed to communicate message clearly
Optimism	Positivity, enthusiasm, and awareness of nonverbal communication

their phones.^{38,39} Make sure to use an attention grabber as your cover and then delve deeper into the topic, depending on the vehicle you choose to use.

Podcasts

Podcasts are long-format conversations that typically have a host(s) and 1 or 2 guests to discuss a topic.⁴⁰ These can be audio only or include video as well. Podcasts offer an excellent opportunity for allergist-immunologists to provide education and advocacy surrounding topics pertinent to patients, the public, and healthcare professionals. Unlike shorter media interviews or social media posts, podcasts often run 20 to 60 minutes, which offers time for perspective, nuance, and context. Podcasts are increasingly used for medical education, and there are several podcasts devoted specifically to allergy/immunology, including those from major professional organizations.^{40,41} Most podcasts invite guests on the basis of their media presence or known expertise in a specific area, but contacting the producer or host to offer one's expertise is often welcomed as well. When invited to be a guest, the RATIO acronym may be a very useful tool. Podcasts can vary widely in their format, length, and target audience. It is important to listen to several episodes to understand how the hosts interact with guests and know what audience is being targeted to avoid jargon for a lay audience or basic descriptions for healthcare professionals. Although a full description of how to be a great podcast guest lies outside the scope of this article, there are multiple resources available online and most focus on the importance of having a good audio setup and practicing before the recording.⁴²

Newspaper

Letters to the Editor are an excellent way to reach a large audience.⁴³ These newspaper letters are short (typically 300 words or less), focus on one issue, and provide readers with information and insights, sharing your experience and expertise. They are often monitored by elected officials. Finish the letter by asking readers to take action (eg, supporting or opposing legislation). Letters most likely to be published will be a response to a recent article or opinion published in that publication. Is your local paper a weekly? That's okay. The smaller the newspaper's circulation, the easier it may be to get your letter printed. These letters are usually also available online, reaching an even wider circulation.

Op-Eds, sometimes labeled "Opinion" by publications such as *The New York Times*, are typically longer than Letters to the Editor.⁴⁴ Length varies by publication but is typically around 800 words. The name "Op-Ed" derives its name from originally appearing opposite the editorial page (which is written by newspaper staff). You want to start with an opening "hook" to

TABLE II. Medium matters when advocating for patients

Medium	Considerations
Television and radio	<ul style="list-style-type: none"> • Research ahead of time • Keep answers short, do not ramble • Stay relaxed • Be honest and humble
Social media	<ul style="list-style-type: none"> • Address misinformation • Be authentic • Avoid burnout
Podcasts	<ul style="list-style-type: none"> • Research ahead of time • Use stories • Reference previous episodes if appropriate
Newspaper	<ul style="list-style-type: none"> • Stay focused • Provide information and insights • Finish by asking the reader to take action
Testimony	<ul style="list-style-type: none"> • Focus on your SOCO (Single Overriding Communication Objective) • Tell a personal story • Practice in advance • Listen to others preceding your testimony
Oral presentations	<ul style="list-style-type: none"> • Know the data • Make key points early • Stay enthusiastic

grab the reader's attention, and choose the most powerful 1 to 2 facts to support your message. When a staff columnist at the *Los Angeles Times* wrote an opinion column ridiculing food allergies and questioning the increase in diagnosis of food allergies in 2009, Robert Wood wrote a powerful, educational rebuttal published 6 days later, and highlighted his own expertise of taking care of more than 4000 children with food allergies.⁴⁵ In 2023, a resident physician wrote an opinion essay published in the *Boston Globe* advocating for epinephrine autoinjectors on airplanes, opening with her own experience.⁴⁶ Her opinion piece was timely because the Federal Aviation Administration Reauthorization Bill was going to expire and a new bill opened the opportunity to update requirements for emergency medical kits.⁴⁷ Further tips for an effective opinion piece can be found at The OpEd Project.⁴⁸

Testimony

Providing testimony at a public hearing can be a very valuable opportunity to express your opinion, particularly when you have an example of a personal story about policies/regulations that have led to bad outcomes for your patients, your practice, or yourself.⁴⁹ It is always helpful to have written testimony prepared for submission because time may run out at a hearing before your time to speak, and so you can submit a formal statement in writing for later consideration by policymakers.⁵⁰ Focusing on your SOCO (Single Overriding Communication Objective) is a media tool often used for interviews that can be helpful for testimony; 2 or 3 major points may be acceptable, depending on the time allowed—one should avoid information overload but include a few relevant statistics if necessary.^{51,52} The key is telling an engaging story that policymakers can identify with personally so that they will feel moved to take action.⁵¹ It is best not to read or memorize testimony but to use notes for speaking guidance and to practice in advance. If you can, it may be helpful to listen to other speakers preceding your testimony for various reasons, including to assess policymakers' responses/questions and to help

you not to repeat a possible largely identical testimony but still highlight supporting remarks from others. When finished, committee members may have questions—be prepared to support your request for action with research.⁵¹ There is no substitute for research on the issue(s) in advance to bolster your testimony. If possible, it is best to answer with brevity, honesty, and persuasiveness. If you do not know the answer, it is okay to say “I don’t know,” but offer to look into it and provide a written response after the hearing. Finally, it is always appropriate to consider “next steps,” which include future communications with policymakers based on what you heard, said, and concluded from the hearing.

Presenting from the podium

Allergist-immunologists can advocate from the podium when presenting at scientific meetings, but may also advocate when asked to speak at fundraising events or for patient advocacy groups.⁶ Both scenarios can act to further knowledge translation opportunities, but each has unique challenges. Podium presentations can be unique learning opportunities for both the presenter and the audience and can be powerful motivators of change.

The RATIO acronym can provide a helpful approach here as well, because both a high-level and more granular understanding of content serves as the basis for beginning a presentation. It is important to research the source articles that may be discussed before a presentation to solidify understanding and increase confidence.

Attention to the audience allows presenters to tailor content as well as capture and maintain the attention of attendees, who may have listened to many other sessions during a meeting. The audience may drive main aspects of a presentation. Clinicians may speak from the podium for fundraisers or with patient advocacy groups. These occasions often represent key moments for focused advocacy with engaged listeners from various social and educational backgrounds and potentially with media representatives. Although the need for up-to-date data is clear, these data are often at a higher level, with broader applications being the key takeaways. Knowledge translation in this scenario should encourage broader societal change.⁵³ Once again, ensuring the audience understands why the message matters is critical.

Targeted messaging helps to clearly identify the problem that a presentation will address. Although objectives are often used to give context to listeners, it should be clear to attendees early in the presentation why this information is important to them and their patients. Why does this presentation matter? How will this help patients? Why should an attendee listen? A clearly worded thesis can help to focus the presentation.⁵⁴ It is helpful to state and even restate the key points throughout the presentation to ensure that the main message is not missed by listeners. Speakers have a limited time to convey key messages and should do so with focus. Using a combination of balanced images and text is essential to address Mayer’s “dual channel assumption,” where a listener’s information processing pathways can be optimized.^{55,56} Similarly, limiting data presented to several key points considers the “limited capacity assumption.”²¹ Acknowledging that an audience can process 3 to 5 items at a time can help guide slide development.²¹

Optimism helps speakers stay engaged with their audience, and rehearsing a presentation in advance can help to ensure that the message is focused and, importantly, on time. When presenting from the podium, moving from behind the podium can convey

enthusiasm and help maintain audience attention. These approaches can ensure that a presenter’s important message reaches the listeners to inspire a transformation in clinical practice.

TALKING POINT EXAMPLES FOR ALLERGIC DISEASES

Media has played an important role in conveying key messages regarding a number of allergic diseases to both the public and healthcare communities. It is important to have talking points prepared. Effectively communicating key points for food allergy, anaphylaxis, asthma, rhinosinusitis, and broader healthcare advocacy is often a top priority (Table III). Examples of key points can be considered for each condition.

Food allergy

1. **Food allergies are common.** Food allergies affect up to 8% of children and 10% of adults in the United States, impact millions of Americans, and carry a significant psychosocial burden.⁵⁷⁻⁵⁹
2. **Early introduction works.** Early-life feeding of potentially allergenic foods appears to prevent food allergy development especially in higher-risk infants.²⁴ As soon as an infant is developmentally ready, feed early and often.²⁶ Potentially allergenic foods may be tried and retained in the diet if well tolerated, with no requirement to screen before introduction.^{20,26} This approach represents a major shift from previous guidelines, which previously advocated for delaying introduction until 2 years of life of some potential allergens.⁶⁰
3. **Food allergy diagnosis must be accurate.** Diagnosis is typically based on (1) a clear history of allergic reaction to food and positive testing or (2) the criterion standard testing of a positive oral food challenge. In limited situations of certain food allergy (eg, repeated anaphylaxis from a single allergen), confirmatory testing may not be required.⁶¹ Incorrect diagnosis of food allergy as a result of unvalidated methods can lead to unnecessary food avoidance, social limitations, increased anxiety and stress, financial burden, and potential nutrient deficiencies.^{62,63} As such, an allergist-immunologist should be consulted whenever food allergy is suspected.
4. **Many effective food allergy treatments exist.** Although the traditional approach of strict food avoidance may still be suitable for some individuals, oral immunotherapy and biologic agents, including omalizumab, now offer the opportunity to diminish the frequency and severity of allergic reactions, allow some amount of allergenic food introduction, and can improve quality of life.⁶⁴⁻⁶⁷
5. **Education is key.** Optimal food allergy management requires education of multiple stakeholders.⁶⁸ These may include members of the patient’s social network and local community, as well as school or work administrators.

Anaphylaxis

1. **Anaphylaxis is a serious allergic reaction that may rarely cause death.** Signs and symptoms of anaphylaxis should never be ignored.⁶⁹⁻⁷¹
2. **Treat anaphylaxis right away with epinephrine.** There remains significant hesitancy in treating anaphylaxis with epinephrine due to fear of side effects or cost. Noninjectable routes of epinephrine are on the horizon.^{69,72-77}

TABLE III. Key messaging

Condition	Key message
Food allergy	Food allergies are common and pose a significant psychosocial burden on individuals.
	Early food introduction prevents food allergy development. Screen before early food introduction is not required.
	Food allergy diagnosis is based on a clear history of allergic reaction to food, most typically with positive confirmatory testing, or on the criterion standard positive oral food challenge. Allergist-immunologists should be consulted when food allergy is suspected.
Anaphylaxis	Multiple new active treatments are currently available for food allergy (oral immunotherapy, omalizumab) in addition to the traditional approach of strict avoidance alone.
	Education of multiple stakeholders is key for optimal management of food allergies.
	Anaphylaxis is a serious allergic reaction that may rarely cause death.
	Prompt treatment of anaphylaxis with epinephrine is recommended. An emergency room visit may not be needed if symptoms resolve promptly.
Asthma	Common triggers for anaphylaxis are foods, drugs, and insect venom. Triggers may vary in different ages.
	If anaphylaxis occurs, give epinephrine—do not wait! There is hesitancy in treating anaphylaxis with epinephrine due to multiple barriers, such as fear of side effects, fear of injection, unwillingness to carry epinephrine, inability to use epinephrine device, and cost of device.
	Education is key for optimal management of anaphylaxis.
	Asthma is one of the most common chronic conditions of childhood, contributing to morbidity and mortality in this population.
Rhinitis	Diagnosis of asthma often requires confirmation of clinical history as well as objective measures such as spirometry.
	Visits for asthma should include assessment of asthma severity and control.
	Multiple new therapies are currently available for asthma management, such as biologics, in addition to other effective therapies (such as inhaled corticosteroids often combined with long-acting beta-agonists and leukotriene receptor antagonists)
	Social determinants of health play key roles in asthma outcomes and need to be considered.
Health reform	Rhinitis is not trivial and substantially impacts quality of life.
	Subgroups of rhinitis include allergic rhinitis, infectious rhinitis, and nonallergic noninfectious rhinitis. Rhinitis and sinusitis can be separate but can also coexist.
	Comprehensive assessment is important to identify triggers and comorbidities, and rule out other possible diagnoses.
Healthcare reform	Rhinitis control is especially important in those with concurrent asthma or other respiratory disease because improved rhinitis control can improve asthma control as well.
	Therapies include environmental control, medications, and aeroallergen immunotherapy.
	Healthcare reform should aim to ensure access to affordable and quality healthcare for all individuals.
	Effective healthcare reform should prioritize measures to contain health care costs while maintaining or improving quality.
Healthcare reform	Healthcare reform efforts must address disparities in healthcare access and outcomes based on race, ethnicity, sex, and other social determinants of health.
	Healthcare reform should foster innovation in healthcare delivery and technology while promoting efficiency and effectiveness.
Healthcare reform	Healthcare reform should prioritize patient-centered care models that empower individuals to actively participate in their healthcare decisions, promote shared decision making, and prioritize individual preferences, values, and goals.

- Emergency room treatment may not be needed if symptoms resolve promptly after epinephrine without recurrence.**^{69,74-76} Home management of resolved anaphylaxis can be a safe and effective approach within the context of patient preference—sensitive care.^{76,77}
- Anaphylaxis triggers vary in populations but are consistent among individuals.** Common anaphylaxis triggers vary by age group and include foods, drugs, and stinging insect venom. Although anaphylaxis in younger individuals is often triggered by foods, drugs are the most frequent trigger in older individuals.⁷¹
- Education is key.** Optimal management of anaphylaxis requires education and empowerment of patients and their families. Knowledge promotes informed decision making that can decrease the emotional, physical, and financial burdens on both patients and health care systems.⁷⁸

Asthma

- Asthma is common.** As one of the most common chronic conditions of childhood, asthma affects 14% of children

- globally and 6.5% in the United States.^{79,80} Asthma is a leading cause of childhood hospitalizations, missed school days, and physical inactivity.⁸¹
- Asthma diagnosis must be accurate.** The diagnosis of asthma often requires confirmation of clinical history as well as objective age-appropriate measures. According to the Global Initiative for Asthma, asthma is a heterogeneous disease defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness, and cough, together with variable expiratory airflow limitation.⁸² Conditions such as vocal cord dysfunction and eosinophilic bronchitis can closely mimic asthma, and so it is important to objectively assess airflow limitation to avoid inappropriate diagnosis.⁸³
- Asthma control involves decreasing impairment with activities and reducing risk of exacerbations.** Healthcare visits for asthma should include an assessment of asthma control in terms of both functional impairment and risk of exacerbations.⁸⁴ Assessing severity at the initial encounter should include measures such as short-acting β -agonist use and

nighttime awakenings, as well as measures to determine the patient's risk of acute exacerbations.⁸⁴ Simple patient-reported outcome measures may be used to evaluate the adequacy and consistency of asthma control.⁸⁵⁻⁸⁷

- Asthma can be effectively and safely treated.** Many new therapies are currently available for asthma management such as biologics, in addition to effective therapies such as inhaled corticosteroids, long-acting beta agonists, leukotriene receptor antagonists, and allergen immunotherapy when appropriate. Omalizumab, mepolizumab, benralizumab, dupilumab, and tezepelumab are each safe and effective.^{82,84,88} In addition, the foundation of asthma management, inhaled corticosteroids, which control inflammation, are effective and safe for long-term use.^{89,90}
- Equity matters.** Social determinants of health must be considered because they play key roles in asthma outcomes. Asthma prevalence rates are significantly higher in non-Hispanic Black children compared with non-Hispanic White children (14.5% vs 8.2%), and children from low-income and historically marginalized populations experience disproportionately higher rates of asthma morbidity and mortality.^{9,81,91,92} Children from underserved populations are at risk for fragmented health care due to barriers that include inadequate transportation, gaps in insurance coverage, and shortages of health care providers.⁹

Rhinitis

- Allergic rhinitis is not trivial and substantially impacts quality of life.** Up to 60 million people in the United States alone are affected by allergic rhinitis, which may have a large impact on quality of life.⁹³ Allergic rhinitis impacts sleep, attention, learning, social functioning, and mental health.^{93,94}
- Not all rhinitis is allergic.** The 3 subgroups are allergic rhinitis, infectious rhinitis, and nonallergic noninfectious rhinitis.^{93,95-98} Rhinitis and sinusitis can be separate but can also coexist because both affected areas share similar anatomical, vascular, and neuronal pathways.^{93,95,98}
- Help is here.** Comprehensive assessment is important to identify triggers, comorbidities, and other possible diagnoses.⁹³ This should include a thorough history and physical examination, as well as allergy testing for suspected allergic rhinitis.⁹³
- One airway.** Rhinitis control is especially important in those with concurrent asthma or other respiratory disease.⁹⁹ Because allergic rhinitis and asthma appear to represent a combined airway inflammatory disease, their treatments are often synergistic.^{30,82,84,88,93,95,98,99}
- Multifaceted management.** Therapies include environmental control, medications, and aeroallergen immunotherapy.^{93,96} The first-line treatment for allergic rhinitis is allergen avoidance, with other options including oral antihistamines, intranasal corticosteroids, intranasal antihistamines, and combination intranasal corticosteroid-intranasal antihistamine products.⁹³ When optimal avoidance measures and pharmacotherapy are insufficient or not well tolerated, allergen immunotherapy, which may be delivered by injection (subcutaneous) or under the tongue (sublingual), is a safe and effective approach.^{96,100}

Broader health care advocacy

- Right care, right time, every time, for everyone.** Healthcare reform should aim to ensure access to affordable and quality healthcare for all individuals, with an ultimate goal of health equity.^{9,10} Health equity is defined as "having the personal agency and fair access to resources and opportunities needed to achieve the best possible physical, emotional, and social well-being."¹⁰¹
- Value-based care.** Effective health care reform should prioritize measures to contain healthcare costs while maintaining or improving quality.¹⁰ Although the United States spends more on health care than anywhere in the world, it fares much worse than other wealthy, industrialized nations when comparing coverage and most indicators of value.¹⁰²
- Fair is fair.** Health care reform efforts must address disparities in health care access and outcomes based on race, ethnicity, sex, and other social determinants of health; the integration of social determinants of health into public health theory and practice can substantially expand the benefits of public health.^{9,103}
- Innovate.** Health care reform should foster innovation in healthcare delivery and technology while promoting efficiency and effectiveness.¹⁰ For example, the use of adequate health information technology has been identified as one of the ways to transform primary care and improve health care equity and quality.¹⁰⁴
- Everyone is responsible.** Healthcare reform should prioritize patient-centered care models that empower individuals to actively participate in their health care decisions, promote shared decision making, and prioritize individual preferences, values, and goals.⁷⁷ This sentiment is echoed by the National Academy of Medicine, which has identified patient centeredness as a key element of health care, which involves increasing emphasis on care coordination, shared decision making, informed consent, and patient preferences and values.¹⁰⁵

REFERENCES

- Abrams EM, Greenhawt M, Alqurashi W, Singer AG, Shaker M. The revenge of unintended consequences of anaphylaxis-risk overdiagnosis: how far we have come and how far we have to go. *J Allergy Clin Immunol Pract* 2021;9:3911-7.
- Abrams EM, Singer AG, Greenhawt M, Stukus D, Shaker M. Ten tips for improving your clinical practice during the COVID-19 pandemic. *Curr Opin Pediatr* 2021;33:260-7.
- Iglesia EGA, Greenhawt M, Shaker MS. Achieving the Quadruple Aim to deliver value-based allergy care in an ever-evolving health care system. *Ann Allergy Asthma Immunol* 2020;125:126-36.
- Mustafa SS, Anagnostou A, Greenhawt M, Lieberman JA, Shaker M. Patient partnerships and minimally disruptive medicine. *Ann Allergy Asthma Immunol* 2024;132:671-3.
- Shaker M, Hsu Blatman K, Abrams EM. Engaging patient partners in state-of-the-art allergy care: finding balance when discussing risk. *Ann Allergy Asthma Immunol* 2020;125:252-61.
- Abrams EM, Louisias M, Blumenthal KG. The importance of physician advocacy. *Ann Allergy Asthma Immunol* 2022;129:679-80.
- Chimonas S, Mamoor M, Kaltenboeck A, Korenstein D. The future of physician advocacy: a survey of U.S. medical students. *BMC Med Educ* 2021;21:399.
- Earnest MA, Wong SL, Federico SG. Perspective: Physician advocacy: what is it and how do we do it? *Acad Med* 2010;85:63-7.
- Conway AE, Lieberman J, Codispoti CD, Mahdavinia M, Anagnostou A, Hsu Blatman KS, et al. Pharmacoequity and biologics in the allergy clinic:

- providing the right care, at the right time, every time, to everyone. *J Allergy Clin Immunol Pract* 2024;12:1170-80.
10. Shaker M, Mauger D, Fuhlbrigge AL. Value-based, cost-effective care: the role of the allergist-immunologist. *J Allergy Clin Immunol Pract* 2023;11:132-9.
 11. Adabanya U, Awosika A, Moon JH, Reddy YU, Ugwuja F. Changing a community: a holistic view of the fundamental human needs and their public health impacts. *Cureus* 2023;15:e44023.
 12. Patrick M, Venkatesh RD, Stukus DR. Social media and its impact on health care. *Ann Allergy Asthma Immunol* 2022;128:139-45.
 13. Radmanesh A, Duszak R, Fitzgerald RT. Social media and public outreach: a physician primer. *AJNR Am J Neuroradiol* 2015;36:1223-4.
 14. Stukus DR. Tackling medical misinformation in allergy and immunology practice. *Expert Rev Clin Immunol* 2022;18:995-6.
 15. Elrod JK, Fortenberry JL Jr. Advertising in health and medicine: using mass media to communicate with patients. *BMC Health Serv Res* 2020;20:818.
 16. Purcarea VL. The impact of marketing strategies in healthcare systems. *J Med Life* 2019;12:93-6.
 17. Kern LM, Safford MM, Slavin MJ, Makovkina E, Fucl A, Carrillo JE, et al. Patients' and providers' views on causes and consequences of healthcare fragmentation in the ambulatory setting: a qualitative study. *J Gen Intern Med* 2019;34:899-907.
 18. Prior A, Vestergaard CH, Vedsted P, Smith SM, Virgilsen LF, Rasmussen LA, et al. Healthcare fragmentation, multimorbidity, potentially inappropriate medication, and mortality: a Danish nationwide cohort study. *BMC Med* 2023;21:305.
 19. Brennan MD. The role of professionalism in clinical practice, medical education, biomedical research and health care administration. *J Transl Int Med* 2016;4:64-5.
 20. Sriharan K, Russell G, Fritz Z, Wong D, Rollin M, Dunning J, et al. Medical oaths and declarations. *BMJ* 2001;323:1440-1.
 21. Cowan N. The magical number 4 in short-term memory: a reconsideration of mental storage capacity. *Behav Brain Sci* 2001;24:87-114. discussion 85.
 22. Sansweet S, Rolling C Jr, Ebisawa M, Wang J, Gupta R, Davis CM. Reaching communities through food allergy advocacy, research, and education: a comprehensive analysis. *J Allergy Clin Immunol Pract* 2024;12:310-5.
 23. Golden TL, Wendel ML. Public health's next step in advancing equity: re-evaluating epistemological assumptions to move social determinants from theory to practice. *Front Public Health* 2020;8:131.
 24. Fleischer DM, Chan ES, Venter C, Spergel JM, Abrams EM, Stukus D, et al. A consensus approach to the primary prevention of food allergy through nutrition: guidance from the American Academy of Allergy, Asthma, and Immunology; American College of Allergy, Asthma, and Immunology; and the Canadian Society for Allergy and Clinical Immunology. *J Allergy Clin Immunol Pract* 2021;9:22-43.e4.
 25. Shaker M, Abrams EM, Greenhawt M. Clinician adoption of US Peanut Introduction Guidelines—a case for conditional recommendations and contextual considerations to empower shared decision-making. *JAMA Netw Open* 2020;3:e2011535.
 26. Eat Early. Eat Often. Accessed June 8, 2024. <https://foodallergycanada.ca/wp-content/uploads/Eat-Early-Eat-Often.pdf>
 27. Emergency College of Physicians. Effective media interview techniques. Accessed June 8, 2024. <https://www.acep.org/get-involved/becoming-a-spokesperson/effective-media-interview-techniques>
 28. Sabbagh LB. Managing the media interview. *Compr Ther* 1998;24:33-5.
 29. Lencioni P. The ideal team player. Accessed June 8, 2024. <https://www.tablegroup.com/product/ideal-team-player/>
 30. Remvig CL, Diers CS, Meteran H, Thomsen SF, Sigsgaard T, Hoj S, et al. YouTube as a source of (mis)information on allergic rhinitis. *Ann Allergy Asthma Immunol* 2022;129:612-7.
 31. Bansal P, Bingham TA, Greenhawt M, Mosnaim G, Nanda A, Oppenheimer J, et al. Clinician wellness during the COVID-19 pandemic: extraordinary times and unusual challenges for the allergist/immunologist. *J Allergy Clin Immunol Pract* 2020;8:1781-1790.e3.
 32. Anagnostou A, Hearrell M, Timberlake D, Huang X, Staggers KA, Stukus D. Social media use among parents of children with food allergies. *Ann Allergy Asthma Immunol* 2024;133:103-5.
 33. HootSuite. Top Facebook demographics that matter to marketers. Accessed June 8, 2024. <https://blog.hootsuite.com/facebook-demographics/>
 34. Social Shepherd. 25 essential TikTok statistics you need to know in. Accessed June 8, 2024. <https://blog.hootsuite.com/facebook-demographics/>
 35. Jenkins EL, Ilicic J, Barklamb AM, McCaffrey TA. Assessing the credibility and authenticity of social media content for applications in health communication: scoping review. *J Med Internet Res* 2020;22:e17296.
 36. Shaker M. Preventing burnout through wellness and an attitude of gratitude. *Ann Allergy Asthma Immunol* 2021;126:215-6.
 37. Bingham TA, Bansal P, Nanda A, Sharma H. Allergy and immunology physician and patient (un)Wellness during COVID-19 and beyond: lessons for the future. *J Allergy Clin Immunol Pract* 2023;11:3365-72.
 38. Riehm KE, Feder KA, Tormohlen KN, Crum RM, Young AS, Green KM, et al. Associations between time spent using social media and internalizing and externalizing problems among US youth. *JAMA Psychiatry* 2019;76:1266-73.
 39. Voss C, Shorter P, Mueller-Coyne J, Turner K. Screen time, phone usage, and social media usage: before and during the COVID-19 pandemic. *Digit Health* 2023;9:20552076231171510.
 40. Kelly JM, Perseghin A, Dow AW, Trivedi SP, Rodman A, Berk J. Learning through listening: a scoping review of podcast use in medical education. *Acad Med* 2022;97:1079-85.
 41. Little A, Hampton Z, Gronowski T, Meyer C, Kalnow A. Podcasting in medicine: a review of the current content by specialty. *Cureus* 2020;12:e6726.
 42. Podcastle. How to be a good podcast guest—important tips. Accessed June 8, 2024. <https://podcastle.ai/blog/how-to-be-a-good-podcast-guest/>
 43. Siau K, El-Omar E. How to write a Letter to the Editor. *United Eur Gastroenterol J* 2020;8:981-3.
 44. Goh HH, Bourne P. Ten simple rules for writing scientific op-ed articles. *PLoS Comput Biol* 2020;16:e1008187.
 45. Wood RA. Food allergies are nothing to laugh about. *Los Angeles Times*. Accessed June 8, 2024. <https://www.latimes.com/opinion/la-oe-w-wood15-2009jan15-story.html>
 46. Ulin L. I learned the hard way that US airlines aren't required to have Epi-pens. *Boston Globe*. Accessed June 8, 2024. <https://www.bostonglobe.com/2023/08/03/opinion/epipen-airlines-flight/>
 47. Congress.gov. S.1939 - FAA Reauthorization Act of 2024. Accessed June 8, 2024. <https://www.congress.gov/bill/118th-congress/senate-bill/1939>
 48. The OpEd Project. Accessed June 8, 2024. <https://www.theopedproject.org>
 49. The National Consumer Voice for Quality Long-Term Care. Advocacy toolkit. Accessed June 8, 2024. https://theconsumervoice.org/uploads/files/issues/Crafting_an_Effective_Advocacy_Message_han.pdf
 50. Community Associations Institute. Advocate's guide to written and oral testimony. Accessed June 8, 2024. <https://www.caionline.org/Advocacy/Resources/guide/Pages/writtentestimony.aspx>
 51. American Heart Association. You're the cure advocate tips: written and oral testimony. Accessed June 8, 2024. <https://www.caionline.org/Advocacy/Resources/guide/Pages/writtentestimony.aspx>
 52. Health Links. Single Overriding Communication Objective (SOCO) worksheet. Accessed June 8, 2024. https://www.healthlinkscertified.org/uploads/files/2023_02_11_06_55_26_SOCO_Worksheet%60.pdf
 53. Paterson M, Lagosky S, Mason R. Health promotion and knowledge translation: two roads to the same destination? *Glob Health Promot* 2018;25:65-9.
 54. Wood TJ, Hollier A. Punch up your podium presentations. *J Am Assoc Nurse Pract* 2017;29:470-4.
 55. Mayer RE. Applying the science of learning to medical education. *Med Educ* 2010;44:543-9.
 56. Digital Learning Institute. Mayer's 12 principles of multimedia learning. Accessed June 8, 2024. <https://www.digitallearninginstitute.com/blog/mayers-principles-multimedia-learning>
 57. Warren CM, Jiang J, Gupta RS. Epidemiology and burden of food allergy. *Curr Allergy Asthma Rep* 2020;20:6.
 58. Shaker M, Greenhawt M. Peanut allergy: burden of illness. *Allergy Asthma Proc* 2019;40:290-4.
 59. Shaker MS, Schwartz J, Ferguson M. An update on the impact of food allergy on anxiety and quality of life. *Curr Opin Pediatr* 2017;29:497-502.
 60. Zeiger RS, Heller S, Mellon MH, Forsythe AB, O'Connor RD, Hamburger RN, et al. Effect of combined maternal and infant food-allergen avoidance on development of atopy in early infancy: a randomized study. *J Allergy Clin Immunol* 1989;84:72-89.
 61. Greenhawt M, Shaker M, Wang J, Oppenheimer JJ, Sicherer S, Keet C, et al. Peanut allergy diagnosis: a 2020 practice parameter update, systematic review, and GRADE analysis. *J Allergy Clin Immunol* 2020;146:1302-34.
 62. Bird JA, Crain M, Varshney P. Food allergen panel testing often results in misdiagnosis of food allergy. *J Pediatr* 2015;166:97-100.
 63. Fleischer DM, Bock SA, Spears GC, Wilson CG, Miyazawa NK, Gleason MC, et al. Oral food challenges in children with a diagnosis of food allergy. *J Pediatr* 2011;158:578-583.e1.
 64. Nurmatov U, Dhami S, Arasi S, Pajno GB, Fernandez-Rivas M, Muraro A, et al. Allergen immunotherapy for IgE-mediated food allergy: a systematic review and meta-analysis. *Allergy* 2017;72:1133-47.

65. Wasserman RL, Factor J, Windom HH, Abrams EM, Begin P, Chan ES, et al. An approach to the office-based practice of food oral immunotherapy. *J Allergy Clin Immunol Pract* 2021;9:1826-1838.e8.
66. Zuberbier T, Wood RA, Bindslev-Jensen C, Fiocchi A, Chinthrajah RS, Worm M, et al. Omalizumab in IgE-mediated food allergy: a systematic review and meta-analysis. *J Allergy Clin Immunol Pract* 2023;11:1134-46.
67. Mack DP, Dribin TE, Turner PJ, Wasserman RL, Hanna MA, Shaker M, et al. Preparing Patients for Oral Immunotherapy (PPOINT): International Delphi consensus for procedural preparation and consent. *J Allergy Clin Immunol* 2024;153:1621-33.
68. Cheon J, Cho CM, Kim HJ, Kim DH. Effectiveness of educational interventions for quality of life of parents and children with food allergy: a systematic review. *Medicine (Baltimore)* 2022;101:e30404.
69. Golden DBK, Wang J, Waserman S, Akin C, Campbell RL, Ellis AK, et al. Anaphylaxis: a 2023 practice parameter update. *Ann Allergy Asthma Immunol* 2024;132:124-76.
70. Shaker MS, Wallace DV, Golden DBK, Oppenheimer J, Bernstein JA, Campbell RL, et al. Anaphylaxis—a 2020 practice parameter update, systematic review, and Grading of Recommendations, Assessment, Development and Evaluation (GRADE) analysis. *J Allergy Clin Immunol* 2020;145:1082-123.
71. Turner PJ, Jerschow E, Umasunthar T, Lin R, Campbell DE, Boyle RJ. Fatal anaphylaxis: mortality rate and risk factors. *J Allergy Clin Immunol Pract* 2017;5:1169-78.
72. Lieberman JA, Oppenheimer J, Hernandez-Trujillo VP, Blaiss MS. Innovations in the treatment of anaphylaxis: a review of recent data. *Ann Allergy Asthma Immunol* 2023;131:185-193.e10.
73. Shaker MS, Golden DBK, Lieberman JA, Greenhawt M, Lee MW. Inhaled epinephrine for anaphylaxis: time for another look? *Ann Allergy Asthma Immunol* 2024;132:267-9.
74. Casale TB, Wang J, Oppenheimer J, Nowak-Wegrzyn A. Acute at-home management of anaphylaxis: 911: what is the emergency? *J Allergy Clin Immunol Pract* 2022;10:2274-9.
75. Shaker M, Abrams EM, Sublett JW. Contextual community epinephrine prescribing: is more always better? *Ann Allergy Asthma Immunol* 2023;131:176-84.
76. Shaker M, Kanaoka T, Feenan L, Greenhawt M. An economic evaluation of immediate vs non-immediate activation of emergency medical services after epinephrine use for peanut-induced anaphylaxis. *Ann Allergy Asthma Immunol* 2019;122:79-85.
77. Bukstein DA, Guerra DG Jr, Huwe T, Davis RA. A review of shared decision-making: a call to arms for health care professionals. *Ann Allergy Asthma Immunol* 2020;125:273-9.
78. Lieberman JA, Wang J. Epinephrine in anaphylaxis: too little, too late. *Curr Opin Allergy Clin Immunol* 2020;20:452-8.
79. Asher MI, Montefort S, Bjorksten B, Lai CK, Strachan DP, Weiland SK, et al. Worldwide time trends in the prevalence of symptoms of asthma, allergic rhinoconjunctivitis, and eczema in childhood: ISAAC Phases One and Three repeat multicountry cross-sectional surveys. *Lancet* 2006;368:733-43.
80. Centers for Disease Control and Prevention. Most recent asthma data. Accessed June 8, 2024. https://www.cdc.gov/asthma/most_recent_data.htm
81. Gleason M, Cicutto L, Haas-Howard C, Raleigh BM, Szeffler SJ. Leveraging partnerships: families, schools, and providers working together to improve asthma management. *Curr Allergy Asthma Rep* 2016;16:74.
82. Global Initiative for Asthma (GINA). Accessed June 8, 2024. https://ginasthma.org/wp-content/uploads/2023/07/GINA-2023-Full-report-23_07_06-WMS.pdf
83. Aaron SD, Boulet LP, Reddel HK, Gershon AS. Underdiagnosis and overdiagnosis of asthma. *Am J Respir Crit Care Med* 2018;198:1012-20.
84. Expert Panel Working Group of the National Heart, Lung, and Blood Institute (NHLBI) administered and coordinated National Asthma Education and Prevention Program Coordinating Committee (NAEPCC)Cloutier MM, Baptist AP, Blake KV, Brooks EG, Bryant-Stephens T, DiMango E, et al. 2020 Focused Updates to the Asthma Management Guidelines: a report from the National Asthma Education and Prevention Program Coordinating Committee Expert Panel Working Group. *J Allergy Clin Immunol* 2020;146:1217-70.
85. Mosnaim G, Stempel H, Szeffler SJ, Stempel DA. Asthma control—time to rethink definitions and criteria. *J Allergy Clin Immunol Pract* 2019;7:1522-3.
86. Murphy KR, Chipps B, Beuther DA, Wise RA, McCann W, Gilbert I, et al. Development of the Asthma Impairment and Risk Questionnaire (AIRQ): a composite control measure. *J Allergy Clin Immunol Pract* 2020;8:2263-2274.e5.
87. Schatz M, Sorkness CA, Li JT, Marcus P, Murray JJ, Nathan RA, et al. Asthma Control Test: reliability, validity, and responsiveness in patients not previously followed by asthma specialists. *J Allergy Clin Immunol* 2006;117:549-56.
88. Pitre T, Jassal T, Angjeli A, Jarabana V, Nannapaneni S, Umair A, et al. A comparison of the effectiveness of biologic therapies for asthma: a systematic review and network meta-analysis. *Ann Allergy Asthma Immunol* 2023;130:595-606.
89. Pedersen S. Clinical safety of inhaled corticosteroids for asthma in children: an update of long-term trials. *Drug Saf* 2006;29:599-612.
90. Shang W, Wang G, Wang Y, Han D. The safety of long-term use of inhaled corticosteroids in patients with asthma: a systematic review and meta-analysis. *Clin Immunol* 2022;236:108960.
91. Federico MJ, McFarlane AEII, Szeffler SJ, Abrams EM. The impact of social determinants of health on children with asthma. *J Allergy Clin Immunol Pract* 2020;8:1808-14.
92. Perez MF, Coutinho MT. An overview of health disparities in asthma. *Yale J Biol Med* 2021;94:497-507.
93. Dykewicz MS, Wallace DV, Amrol DJ, Baroody FM, Bernstein JA, Craig TJ, et al. Rhinitis 2020: a practice parameter update. *J Allergy Clin Immunol* 2020;146:721-67.
94. Conway AE, Verdi M, Kartha N, Maddukuri C, Anagnostou A, Abrams EM, et al. Allergic diseases and mental health. *J Allergy Clin Immunol Pract* 2024;12:2298-309.
95. Papadopoulos NG, Guibas GV. Rhinitis subtypes, endotypes, and definitions. *Immunol Allergy Clin North Am* 2016;36:215-33.
96. Calderon AL, Casale TB, Nelson HS, Bacharier LB, Bansal P, Bernstein DI, et al. Extrapolating evidence-based medicine of AIT into clinical practice in the United States. *J Allergy Clin Immunol Pract* 2023;11:1100-15.
97. Rank MA, Chu DK, Bognanni A, Oykhman P, Bernstein JA, Ellis AK, et al. The Joint Task Force on Practice Parameters GRADE guidelines for the medical management of chronic rhinosinusitis with nasal polyposis. *J Allergy Clin Immunol* 2023;151:386-98.
98. Wise SK, Damask C, Greenhawt M, Oppenheimer J, Roland LT, Shaker MS, et al. A synopsis of guidance for allergic rhinitis diagnosis and management from ICAR 2023. *J Allergy Clin Immunol Pract* 2023;11:773-96.
99. Brozek JL, Bousquet J, Agache I, Agarwal A, Bachert C, Bosnic-Anticevich S, et al. Allergic Rhinitis and its Impact on Asthma (ARIA) guidelines—2016 revision. *J Allergy Clin Immunol* 2017;140:950-8.
100. Cox L, Nelson H, Lockey R, Calabria C, Chacko T, Finegold I, et al. Allergen immunotherapy: a practice parameter third update. *J Allergy Clin Immunol* 2011;127:S1-55.
101. Peterson A, Charles V, Yeung D, Coyle K. The Health Equity Framework: a science- and justice-based model for public health researchers and practitioners. *Health Promot Pract* 2021;22:741-6.
102. Crowley R, Daniel H, Cooney TG, Engel LS, Health and Public Policy Committee of the American College of Physicians. Envisioning a better U.S. health care system for all: coverage and cost of care. *Ann Intern Med* 2020;172:S7-32.
103. Hahn RA. What is a social determinant of health? Back to basics. *J Public Health Res* 2021;10:2324.
104. Bodenheimer T, Grumbach K. Electronic technology: a spark to revitalize primary care? *JAMA* 2003;290:259-64.
105. Warner JJ, Benjamin IJ, Churchwell K, Firestone G, Gardner TJ, Johnson JC, et al. Advancing healthcare reform: the American Heart Association's 2020 Statement of Principles for Adequate, Accessible, and Affordable Health Care: a presidential advisory from the American Heart Association. *Circulation* 2020;141:e601-14.